Chronic Conditions Manual

3rd Edition 2024

Prevention and Management of Chronic Conditions in Rural and Remote Australia

Royal Flying Doctor Service
QUEENSLAND SECTION

apunipima
CAPE YORK HEALTH COUNCIL

Queensland
Government

Chronic Conditions Manual

Prevention and Management of Chronic Conditions in Rural and Remote Australia

3rd edition 2024

Copyright

Chronic Conditions Manual: Prevention and Management of Chronic Conditions in Rural and Remote Australia 3rd edition 2024. ISBN: 978-1-876560-21-8.

Controlled and uncontrolled copies

The electronic version is the only controlled version of the *Chronic Conditions Manual.* Once downloaded it is no longer a controlled copy. The A5/spiral bound print and downloaded versions are uncontrolled. Users are responsible for accessing the most recent controlled electronic version at: https://www.ccm.health.qld.gov.au/

Copying and reproduction

Comments and feedback

Comments and feedback are welcome. Please email: ORRH-Admin@health.qld.gov.au

Suggested citation

Queensland Health, Royal Flying Doctor Service (Queensland Section) and Apunipima Cape York Health Council (2024) *Chronic Conditions Manual: Prevention and Management of Chronic Conditions in Rural and Remote Australia 3rd edition 2024*, Office of Rural and Remote Health, Clinical Excellence Queensland, Queensland Health.

Contents

Foreword

Chronic conditions are characterised by prolonged illness causing functional impairment or disability due to multiple and mostly preventable risk factors. Occurring insidiously over time with little chance of cure or spontaneous resolution, these conditions often affect the most vulnerable in our society.

The fiscal and social burden of chronic conditions is widely known and reported as the largest contributor to premature death in Australia. It is estimated that if current trends continue over the next two decades, the burden of chronic conditions will account for 80% of our nation's ill health and represent more than 70% of all health care expenditure, leaving an indelible socioeconomic and personal impact on the fabric of the nation, straining national health infrastructure and valuable resources.

This manual has been developed using contemporary, evidenced literature, best practice frameworks and statewide strategies. The concise Medicare compliant health checks and nationally accepted management guidelines to address chronic conditions in a clear and consistent format, provides clinicians with a safe quality platform for early intervention to support a patients journey to a healthier life.

The health checks and guidelines are supported by lifestyle behaviour recommendations to promote patient health literacy and proactively plan, manage and optimise their health, wellbeing and quality of life while living with one or more chronic conditions.

It is our privilege to continue to support the rural and remote workforce by presenting to you the ***Chronic Conditions Manual: Prevention and Management of Chronic Conditions in Rural and Remote Australia 3rd edition 2024.***

Dr Helen Brown
Deputy Director-General
Clinical Excellence Queensland
Queensland Health

Debra Malthouse
Chief Executive Officer
Apunipima Cape York
Health Council

Dr Jacob O'Gorman
Chief Medical Officer
Royal Flying Doctor Service
(Queensland Section)

Queensland Government

apunipima
CAPE YORK HEALTH COUNCIL

Royal Flying Doctor Service
QUEENSLAND SECTION

Office of Rural and Remote Health

The Office of Rural and Remote Health provides quality evidenced clinical support tools for Queensland Health's rural and remote workforce. The unit develops contemporary reference manuals and digital education courses in partnership with state and national rural and remote health care service providers and stakeholders, including the Royal Flying Doctor Service, the Australian Defence Force, Apunipima Cape York Health Council and statewide clinical networks.

The suite of tools for rural and remote clinicians include the *Chronic Conditions Manual* (CCM), *the rural and remote Medicare compliant Health Check forms*, the *Primary Clinical Care Manual* (PCCM), the *Rural and Remote Emergency Services Standardisation* (RRESS) guidelines and the *Office of Rural and Remote Digital Education Program.*

The Office of Rural and Remote Health Clinical Support Unit takes pride in these initiatives to support the diverse clinical requirements of our rural remote health workforce and the health needs of our target consumer population.

Acknowledgements

The Office of Rural and Remote Health would like to acknowledge Apunipima Cape York Health Council, the Royal Flying Doctor Service (Queensland Section) and rural and remote stakeholders for their substantial ongoing support to develop this manual.

We would like to acknowledge the following people and organisations for their expert contribution.

Editor

- Sean Booth, Clinical Nurse Consultant, Chronic Conditions Manual, Office of Rural and Remote Health, Clinical Excellence Queensland

Editorial Committee

- Angela Cornford, Director of Pharmacy, Emerald Hospital, Central Queensland HHS
- Dr Ewen McPhee (Chair), AM, Visiting Medical Officer, Emerald Hospital, Central Queensland HHS
- Dr Charles Ellis-Hallett, Medical Lead Primary Health Care Charleville, RFDS Queensland Section
- Dr Lea Merone, Senior Medical Administration Registrar and Voluntary Assisted Dying Senior Medical Officer, Cairns Hospital, Cairns and Hinterland HHS
- Georgina Keys, Senior Clinical Pharmacist, Queensland Country Practice, Darling Downs HHS
- Janet Struber, Program Advisor Chronic Conditions Strategy, Apunipima Cape York Health Council, Cairns
- Jasmine Wasiu, Executive Support Officer, Primary Health Care Manager, Apunipima Cape York Health Council, Cairns
- Lynda Marshall, Diabetes Nurse Educator, Apunipima Cape York Health Council, Cairns
- Sonia Small, Nurse Practitioner, Roma Hospital, South West HHS
- Sue Williamson, Health Consumers Queensland, Roma
- Wendy Cannon, Director of Nursing, Chillagoe Primary Health Centre, Cairns and Hinterland HHS

Section 1. Specialist content review

- Joanne Leamy, Clinical Coordinator, Men's, Women's and Sexual Health, Family Health Unit, Torres and Cape HHS

Section 2. Specialist content review

- Dennis Conlon, Acting Director, Deadly Ears, Deadly Ears Program
- Emma Landherr, Clinical Nurse, Child and Family Health, Maternity Unit, Kingaroy Hospital, Darling Downs HHS
- Janet Adsett, Clinical Nurse, Woorabinda Community Health, Central Queensland HHS
- Jasminka Corporal, Clinical Child Health Nurse and Care Co-Ordinator Chronic Conditions, Sunshine Coast HHS
- Jess Abbott, Nursing Education Officer, Primary Health Care, RFDS Queensland Section

- Kate Lynch, Clinical Nurse Consultant, Communicable Diseases Branch, Queensland Public Health and Scientific Services
- Kelly Lloyd, Acting Clinical Nurse Consultant, Family Health Unit, Weipa Integrated Health Service, Torres and Cape HHS
- Kylah Collins, Acting Advanced Audiologist, Deadly Ears, Deadly Ears Program, Child Health Queensland HHS
- Leonie Trembath, Clinical Child Health Nurse, Charleville Community and Allied Health, South West HHS
- Marie McLaughlin, Child Health Nurse and Lactation Consultant (IBCLC), Child Health Division, Women, Children and Family, West Moreton HHS
- Mary Hindmarsh, Child Health Nurse, Community Services, Weipa, Torres and Cape HHS
- Migien Swindon, Audiologist, State Manager Clinical Operations QLD, First Nations Services, Hearing Australia
- Sarah Sim, Primary Health Care Nurse (Non-Midwifery), RFDS Queensland Section, Cairns
- Shirley Bradley, Primary Health Care Nurse (Midwifery), RFDS Queensland Section, Cairns
- Simon McCormack, Audiologist, Deadly Ears, Deadly Ears Program, Child Health Queensland HHS

Section 3. Specialist content review

- Ailie Perich, Principal Project Officer, Mental Health Alcohol and Other Drugs Branch, Clinical Excellence Queensland
- Cara Neale, NUM/Clinical Nurse Consultant Advance Care Planning, Statewide Office of Advance Care Planning
- Dr Eddy Strivens, Clinical Director, Older Persons Sub-Acute and Rehabilitation (OPSAR), Cairns and Hinterland HHS
- Dr Lisa Kelly, Senior Staff Specialist, Princess Alexandra Hospital, Metro South HHS
- Elzahn de Waal, Chemical Pathologist, Pathology Queensland, Health Support Queensland
- Hayley Warren, CSR Manager, Pathology Queensland, Queensland Public Health and Scientific Services
- Kate Lynch, Clinical Nurse Consultant, Communicable Diseases Branch, Queensland Public Health and Scientific Services
- Kathryn Monaghan, Senior Scientist, Pathology Queensland, Queensland Public Health and Scientific Services
- Leanne Clemesha, NUM/Clinical Nurse Consultant Advance Care Planning, Statewide Office of Advance Care Planning

Section 4. Specialist content review

- Ailie Perich, Principal Project Officer, Mental Health Alcohol and Other Drugs Branch, Clinical Excellence Queensland
- Annabel Hickey, Statewide Coordinator Heart Failure Services, Statewide Heart Failure Service
- Aoife Elliott, Acting/Dietitian Consultant, Department of Dietetics & Food Services, Children's Health Queensland HHS

- Ben Sarnkey, Clinical Nurse Consultant, Palliative Care, Metro South HHS
- Carissa Matthews, Program Support Officer, Medicine Stream, Metro North HHS
- Carolyn Wilkinson, Network Coordinator, Southern Clinical Cluster, Mental Health Alcohol and Other Drugs, Metro South HHS
- Dr Aisling Fleury, Geriatrician, Perioperative Medicine, Division of Surgery, Logan Hospital, Metro South HHS
- Dr Ashleigh Hennessey, Staff Specialist Rheumatology, Royal Brisbane and Women's Hospital, Metro North HHS
- Dr Christine Fawcett, Senior Medical Officer Geriatrics, Medical Service Group, Sunshine Coast University Hospital, Sunshine Coast HHS
- Dr Claire Barrett, Medical Senior Officer, Redcliffe Hospital, Metro North HHS
- Dr Daniel Smith, Thoracic and Cystic Fibrosis Physician, Department of Thoracic Medicine, The Prince Charles Hospital, Metro North HHS
- Dr Dariusz Korczyk, Staff specialist, Princess Alexandra Hospital, Metro South HHS
- Dr Gregory Starmer, Staff Specialist Cardiologist, Cairns Hospital, Cairns and Hinterland HHS
- Dr Greg Parker, Co-Director, PallConsult, Statewide Office of Advance Care Planning, Metro South HHS
- Dr James Martin, General Practice Liaison Officer, Primary Health Network, Brisbane North
- Dr John Reilly, Chief Mental Health Alcohol and Other Drugs Officer, Mental Health Alcohol and Other Drugs Branch, Clinical Excellence Queensland
- Dr Katherine Poulsen, Senior Medical Officer, Royal Brisbane and Women's Hospital, Metro North HHS
- Dr Lisa Kelly, Senior Staff Specialist, Princess Alexandra Hospital, Metro South HHS
- Dr Mark Daglish, Director, Hospital Alcohol and Drug Service, Royal Brisbane and Women's Hospital, Metro North HHS
- Dr Robert Gluer, Director of Cardiology, Toowoomba Hospital, Steering Committee Member Queensland Cardiac Clinical Network, Darling Downs HHS
- Dr Sayed Fayez, Rheumatology, Townsville Hospital, Townsville HHS
- Dr Stella Lin, Geriatrician and General Physician, Surgical, Treatment and Rehabilitation Service (STARS), Metro North HHS
- Erin Dunn, Assistant Director of Pharmacy, TPCH, Co-Chair Queensland General Medicine Clinical Network
- Jennifer Mann, Queensland Dementia Ageing and Frailty Clinical Network Coordinator, and Clinical Lead Healthcare Improvement Unit, Clinical Excellence Queensland
- Kate Richardson, Social Worker Advanced, Pop Up Palliative Service, Torres and Cape HHS
- Kylie Kidby, Queensland Cardiac Clinical Network Coordinator, Healthcare Improvement Unit, Clinical Excellence Queensland
- Kylie McKenna, Nurse Manager Digital Education, Office of Rural and Remote Health, Clinical Excellence Queensland
- Linda Witjes, Independent Patient Rights Advisor, Strategy Governance and Engagement, MacKay HHS

- Nicole Hutchinson, Nurse Practitioner, Community and Oral Health Community Palliative Care, Metro North HHS
- Professor Ian Scott, Director Internal Medicine, Princess Alexandra Hospital, Metro South HHS, Chair Queensland Clinical Network Executive
- Sarah O'Neill, Dietitian, Department of Dietetics and Food Services, Children's Health Queensland HHS
- Sruthy Raju, Nurse Practitioner, Prison Health Services, West Moreton HHS
- Troy Boles, Senior Project Officer and Network Coordinator, Queensland Palliative Care Clinical Network
- Tania Heron, Data and Quality Officer, Rheumatic Heart Disease (RHD) Program, Queensland

Section 5. Specialist content review

- Jessica Shepherd, Principal Program Officer, Child Protection Practice, Office of the Chief Practitioner, Department of Child Safety, Seniors and Disability Services
- Rachel Sutherland, Child Protection Liaison Officer and Early Intervention Parenting Clinician, Family Health Unit, Torres and Cape HHS
- Sarah Mathers, Senior Medication Safety Officer, Medication Services Queensland, Queensland Public Health and Scientific Services

State-wide Health Check forms

- Emma Landherr, Clinical Nurse, Child and Family Health, Maternity Unit, Kingaroy Hospital, Darling Downs HHS
- Janet Adsett, Clinical Nurse, Woorabinda Community Health, Central Queensland HHS
- Jasminka Corporal, Clinical Child Health Nurse and Care Co-Ordinator Chronic Conditions, Sunshine Coast HHS
- Jess Abbott, Nursing Education Officer, Primary Health Care, RFDS Queensland Section
- Kelly Lloyd, Acting Clinical Nurse Consultant, Family Health Unit, Weipa Integrated Health Service, Torres and Cape HHS
- Leonie Trembath, Clinical Child Health Nurse, Charleville Community and Allied Health, South West HHS
- Marie McLaughlin, Child Health Nurse and Lactation Consultant (IBCLC), Child Health Division, Women, Children and Family, West Moreton HHS
- Sarah Sim, Primary Health Care Nurse (Non-Midwifery), RFDS Queensland Section, Cairns
- Shirley Bradley, Primary Health Care Nurse (Midwifery), RFDS Queensland Section, Cairns

Pharmaceutical content review

- Danielle Ironside, Independent Medicines Reviewer, Senior Pharmacist, Thursday Island Hospital, Torres and Cape HHS
- Angela Cornford, Director of Pharmacy, Emerald Hospital, Central Queensland HHS
- Georgina Keys, Senior Clinical Pharmacist, Queensland Country Practice, Darling Downs HHS

Queensland Health Clinical Networks and National Services and Organisations

- Department of Child Safety, Youth and Women
- Dietitian Nutritionist Strategic Council
- Hearing Australia
- Mental Health Alcohol and Other Drugs Clinical Network
- National Asthma Council Australia
- National Heart Foundation of Australia
- Office of the Chief Dental Officer
- Queensland Cardiac Clinical Network
- Queensland Dementia Ageing and Frailty Clinical Network
- Queensland Diabetes Clinical Network
- Queensland General Medicine Clinical Network
- Queensland Gastroenterology Clinical Network
- Queensland Palliative Care Clinical Network
- Queensland Persistent Pain Clinical Network
- Queensland Public Health and Scientific Services
- Queensland Renal Clinical Network
- Queensland Respiratory and Sleep Clinical Network
- Queensland Statewide Aboriginal and Torres Strait Islander Ear Health Program Deadly Ears
- Statewide Child and Youth Clinical Network
- Statewide Heart Failure Service
- Statewide Office of Advance Care Planning
- Statewide Palliative Care Clinical Network (QPCCN)

Special thanks

- Dr Alister Keyser, Senior Medical Officer, Wheels of Wellness
- Janelle Dockray, Pharmacist/Clinical Data Analyst, Torres and Cape HHS
- Michelle Guilliatt, Business Support Officer, Office of Rural and Remote Health, Clinical Excellence Queensland
- Tazz Harding, Program Support Officer, Office of Rural and Remote Health, Clinical Excellence Queensland

Graphic design

- Alyson McCulloch, Senior Graphic and Multimedia Designer, Communication Services, Clinical Excellence Queensland
- Emma Sutton-Schmidt, Communications Account Manager, Clinical Excellence Queensland

How to use this manual

The *Chronic Conditions Manual* is broken into sections

Section 1. Lifestyle modifications

This section contains best-practice healthy lifestyle information that aims to support clinical practice. These are:

- Engaging our patients
- Alcohol reduction
- Diet and nutrition
- Physical activity
- Sexual and reproductive health
- Smoking cessation
- Social-emotional wellbeing

This information can be copied and offered to patients to support healthy lifestyle behaviours.

Section 2. Child health check

This section provides best-practice recommendations for routine checks from birth to 15 years of age to identify chronic conditions. It provides a systematic Medicare compliant guide for performing health check assessments via direct questioning and clinical procedures, and recommended referral pathways if concerns are identified.

Section 3. Adult health check

This section provides best-practice recommendations for routine Medicare compliant health checks of people > 15 years.

Both health check sections focus on health promotion and are complemented by both the Lifestyle modifications, page 18 and Management of diagnosed conditions, page 196.

Section 4. Management of diagnosed conditions

This section is intended for all clinicians who work directly with patients with a chronic condition in a community setting. It provides 26 separate guides for the most common chronic conditions in Australia. These guides follow the same format and include the following:

The shaded introductory box–highlights high risk groups, consideration, considerations in pregnancy, and the need for urgent referral.

1. What is–provides a brief background and explanation of the condition.

2. Diagnosis–briefly outlines elements taken into consideration when diagnosing the condition.

3. Management–details the specific elements required to successfully manage the condition including strategies around patient engagement and continuity of care.

4. Medicines–provides options on various medicine treatment modalities considered best practice for the condition, including a list of suggested LAM and PBS approved medicines.

5. Cycle of care–provides a structured care pathway for the clinician to monitor progress and assist with follow-up and ongoing management.

6. References–available from the ORRH website.

7. Resources–offers the clinician with recommended up to date online resources to provide further assistance with managing and educating patients. The clinician is also encouraged to seek and utilise local resources as required. **NOTE: Some resources are only available via the Queensland Health Electronic Publishing website for those with access. Similar resources can be found online.**

Section 5.
Appendices

This section contains tools to support chronic condition risk assessment and decision making.

Online and ordering
The Chronic Conditions Manual and Health Check Forms

Medicare compliant Child and Adult health check forms are freely available at the ORRH website, while the Chronic Conditions Manual is freely available for download or purchase at the ORRH website.

Abbreviations

ACP	Advance Care Planning
ACR	Albumin-creatinine ratio
ADLs	Activities of daily living
AF	Atrial fibrillation
ALT	Alanine aminotransferase
ARF	Acute rheumatic fever
APSGN	Acute post-streptococcal glomerular nephritis
ASQ	Ages and Stages Questionnaire
ATODs	Alcohol, tobacco and other drugs
BBV	Blood borne viruses
bd	Twice daily
BGL	Blood glucose level
BMI	Body mass index
BP	Blood pressure
BRCA1 BRCA2	Genes for breast cancer, early onset
Ca^{2+}	Calcium
CABG	Coronary artery bypass graft
CALD	Culturally and linguistically diverse
CAT	Chronic obstructive pulmonary disease assessment test
CBT	Cognitive behaviour therapy
CHA_2DS_2-VA_2	Calculator to assess atrial fibrillation stroke risk
CHB	Chronic hepatitis B
CKD	Chronic kidney disease
cm	centimetre
cm^2	centimetre squared (area)
cm^3	centimetre cubed (volume)
CPAP	Continuous positive airway pressure
CrCl	Creatinine clearance
CR	Controlled release
CT	Computed tomography scan takes cross-sectional images of a body
CTA	Computed tomography angiography scan
CVA	Cerebrovascular accident
CVD	Cardiovascular disease
daPa	Dekapascal, a measure of middle ear pressure
dB	Decibel
DBP	Diastolic blood pressure
DOAC	Direct oral anticoagulants
DPI	Dry powder inhaler
DV	Domestic violence
DVT	Deep vein thrombosis
Dx	Diagnosis. During or at diagnosis
ECG	Electrocardiogram/graph
ECV	Ear canal volume
eGFR	Estimated glomerular filtration rate
EPDS	Edinburgh Postnatal Depression Scale
ESR	Erythrocyte sedimentation rate
FAQ	Functional Activities Questionnaire
FASD	Fetal alcohol spectrum disorder
FEV_1	Forced expiratory volume
FiT	Faecal immunochemical test
FVC	Forced vital capacity
GORD	Gastroesophageal reflux disease
g	gram
HAS-BLED	Questions to assess risk of major bleeding with anticoagulation in atrial fibrillation
Hb	Haemoglobin
HbA1c	Glycated haemoglobin
HBV	Hepatitis B virus
HCC	hepatocellular carcinoma
HDL-C	High-density lipoprotein cholesterol

HIV	Human immunodeficiency virus
HPV	Human papillomavirus
HTN or HT	Hypertension
Hx	History
IADLs	Instrumental activities of daily living
ICS	Inhaled corticosteroids
IGT	Impaired glucose tolerance
IFG	Impaired fasting glucose
iFOBT	Immunochemical faecal occult blood test
IM	Intra-muscular
IU	International units
kg	Kilogram
K^+	Potassium
KICA	Kimberley Indigenous Cognitive Assessment
L	Litre
LABA	Long acting $ß_2$ agonist
LAM	List of Approved Medicines (used in Queensland Health facilities)
LAMA	Long-acting muscarinic antagonist
LDL-C	Low density lipoprotein cholesterol
LGBTQI+	Lesbian, gay, bisexual, transgender, and queer or questioning. The 'plus' sign refers to other self-identifications of 'sexuality' and/or 'gender'
LTRA	Leukotriene receptor antagonist
LV	Left ventricle/ventricular
mane	Morning/in the morning
MASS	Medical Aid Subsidy Scheme
MDI	Metered dose inhaler
MI	Myocardial infarction (heart attack)
MBS	Medicare Benefits Schedule
Medicare item	Item numbers referring to services that can be claimed
mg	Milligram
MHAODs	Mental Health, Alcohol and other Drugs
MI	Myocardial infarction
microg	Microgram
mins.	Minutes
mL	Millilitre
mm	Millimetre
mmol	Millimole
MMSE	Mini Mental State Examination
MO	Medical Officer
Mthly	Monthly
MR	Modified release (medicines)
MRI	Magnetic resonance imaging
N-HDL-C	Non-HDL-cholesterol
nmol	Nanomol
nocte	Nightly/at night
NVAF	Non-valvular atrial fibrillation
NP	Nurse Practitioner
NRT	Nicotine replacement therapy
NSAID	Non-steroidal anti-inflammatory drug
NTM	Non-tuberculous mycobacteria
OGTT	Oral glucose tolerance test
OSA	Obstructive sleep apnoea
Parent	The biological parent, a primary carer, provider, or caregiver of a child
PBS	Pharmaceutical Benefits Scheme
PCR	Polymerase chain reaction
PEDS	Parent Evaluation of Developmental Status
PEF	Peak expiratory flow
PHC	Primary health care
PHR	Personal health record booklet (baby book)
PrEP	Pre-exposure prophylaxis
prn	As required
pMDI	Pressurised metered dose inhaler
PO	Per oral/orally
RBG	Random blood glucose

RFDS	Royal Flying Doctor Service
RHD	Rheumatic heart disease
RhF	Rheumatoid factor
RN	Registered Nurse
ROM	Range of motion
RUDAS	Rowland Universal Dementia Assessment Scale
SABA	Short acting $ß_2$ agonist
SAMA	Short-acting muscarinic antagonist (reliever puffers)
SEWB	Social-emotional wellbeing
SBP	Systolic blood pressure
SOB	Shortness of breath
STI	Sexually transmitted infection
SIDS	Sudden infant death syndrome
Significant other	A general term to include family, children, next of kin, spouse, carers and friends
SMoCC	Self management of chronic conditions
TC	Total cholesterol
tds	Three times daily
TG	Triglyceride
TIA	Transient ischaemic attack
TSAT	Transferrin saturation
UEC	Urea, electrolytes, creatinine
ULN	Upper limit of normal
UTI	Urinary tract infection
VLDL-C	Very low density lipoproteins cholesterol
Wkly	Weekly
yo	Year(s) old
>	Greater than
<	Less than
≥	Greater than or equal to
≤	Less than or equal to
/	Per/or
=	Equals, equal to
-ve	Negative
+ve	Positive
+/-	With or without

Section 1.
Lifestyle modifications

Engaging our patients

Background [1–4]

- Productive health outcomes are achieved by involving patients in treatment and management decisions of their condition
- Helping patients can be challenging
- Clinicians should be mindful that patients have significant personal, social, emotional and financial conditions affecting their lives
- Skilled communication takes time to learn and practice to be effective

An evidenced approach [1–4]

- Evidenced behaviour change intervention skills with origins in health psychology, can be used and applied to the rural and remote context. See Resource 1.
- Continued development and practice of effective communication skills can help patients modify their health behaviours

1. What is effective communication? [1–4]

- Core skills and processes to successfully help others
- A way to work with and support individuals to help them achieve their goals within their broader socioeconomic and cultural environment
- Equips clinicians to respond to the needs of individuals and families

2. Clinician qualities [2–7]

- The personal qualities that clinicians bring to a relationship (or partnership) with patients and their family include:
  - being respectful by accepting and valuing patient decisions and views
  - being genuine, sincere, reliable and honest without judgement or defensiveness
  - having humility, by understanding own limitations, and being flexible to accept and learn that patients know what is best for themselves
  - being empathic, by seeing, understanding, experiencing and feeling the world from a patient's point of view and setting aside their own biases, views and anxieties
  - being enthusiastic, warm, and encouraging and maintaining a positive outlook
  - having personal integrity, by having the maturity to listen and accept the feelings, ideas and views of their patients
  - being constructive and sensitive when providing feedback and to recognise the impact of their own feelings and views on the process of helping
  - using knowledge, experience and technical expertise

3. Clinician skills [2–4,6,7]

- The observable behaviours and communication methods clinicians use to effectively express the above clinician qualities, while interacting with patients and families are:
  - listening closely. Being attentive without distraction

- communicating clearly and summarising accurately
- showing empathy and being receptive to the patient's life experiences
- actively negotiating, seeking, clarifying and exchanging ideas and priorities with patients
- being encouraging and build patient confidence by admiring and praising their efforts
- being focused and prioritising
- helping patients to change ideas, feelings and behaviours

"The most basic of all human needs is the need to understand and be understood. The best way to understand people is to listen to them" **Ralph Nichols (1910 - 2001)**

4. Characteristics of our patients and families [2–4,6,7]

- Patients and families engage with health services for many reasons. Our ability to help them will depend on our ability to form an effective partnership
- Patient and family characteristics can include:
  - cultural diversity, rights, views, values and expectations of First Nations and culturally diverse people
  - nature of problem(s)
  - barriers to engagement
  - motivation to change
  - attitudes and beliefs about services
  - expectations of outcome
  - socioeconomic circumstances
  - key needs and strengths

5. Characteristics of our service [1–4,8–10]

- Forming partnerships with our patients is:
  - a key **Queensland Health investment strategy action towards closing the gap in health outcomes for Aboriginal and Torres Strait Islander Queenslanders by 2033** by *"embedding cultural capability in the planning, design and delivery of health services by enhancing the knowledge, skills and behaviours of the health workforce in culturally responsive patient care"*
  - a **Queensland Aboriginal and Torres Strait Islander Health Equity strategy** to *"Improve communication with health consumers and patients by using language and terminology that community understand" and to "Deliver value-based care that personalises and engages Aboriginal and Torres Strait Islander health consumers and patients in decision-making about their care"*
  - a **Queensland Health service strategy** to *"engage consumers and communities about their health, and promote and influence healthier choices and protective behaviours"*
- The key characteristics of our service and our communities are:
  - diversity of cultures
  - reflective practice, supervision and support

- skilled, knowledgeable and competent staff
- drive and enthusiasm of clinicians, managers and teams
- attitudes and beliefs about service provision
- expectations of change and outcome
- organisational culture, structure, stability, openness and flexibility, value of and access to meet user needs
- resources available and their use

6. Constructs [2,3]

- **Constructs** are a person's lifelong experiences that shape the way we view, make sense of, and react to our day to day interactions. They include:
  - culture
  - community
  - family, friends and parents
  - child and generational trauma
  - social media
  - education and schooling
- Constructs are:
  - thoughts and feelings attached to our actions and behaviours
  - continuously shaped and influenced by subsequent experiences throughout our lives
  - functional, helping us to feel safe and secure in the world

Patient constructs influence their willingness and ability to engage and respond to the help available. Clinician constructs affect perceptions of patient strengths and difficulties. Helping patients sometimes involves 'loosening' or challenging unhelpful constructs; ours and theirs

7. Collaboration [1–7]

- The partnership (or relationship) requires the clinician and patient to:
  - communicate openly and clearly
  - engage constructively in the helping process
  - develop and maintain genuine connectedness
  - recognise complementary expertise and roles
  - share decisions
  - trust and respect one another
  - be supportive, open, honest, influential, connected and purposeful
- A partnership is not an expert, dependent, friendship, adversarial or avoidant relationship

Do no harm
While we may not always be able to 'make things better', we certainly shouldn't make them worse!

8. Helping [1–5,7]

- The process of helping includes:
  - **exploring** the situation(s) to get a clear picture
  - a shared **understanding** of the patient's strengths and needs resulting in an agreed set of priorities for change
  - setting SMART (specific, measurable, achievable, relevant, time-limited) **goals** to ensure clear outcomes
  - planning **clear and realistic** strategies to ensure goals can be met
  - supporting patients to **implement** plans with sufficient skills, expertise, enthusiasm and confidence
  - **reviewing** outcomes and **exploring** the nature/usefulness of the partnership and, if necessary, altering it to ensure progress
  - **ending** the partnership, with clear future strategies to ensure sustainability, once outcomes have been reached and supports are in place
- These tasks:
  - are undertaken together in partnership, with the patient taking the lead
  - enable clinicians and patients to explore and develop a shared understanding of the patient's ecology
  - lead to negotiation of goals and a plan that is supported and reviewed over an agreed period of time

9. Change [1,2,5]

- In partnership, clinicians and patients work together to achieve meaningful change and outcomes
- Three related processes that underpin change are:
  - **spontaneous change:** occurs through the process of exploration and understanding, as patients' capacity for change is stimulated by feeling heard by clinicians
  - **guided change:** occurs through the loosening of unhelpful constructs and the strengthening of constructs more likely to help patients achieve their goals and outcomes
  - **planned change:** occurs through the systematic use of goal setting, planning and implementation to bring about specific change
- There will be times when safety is at risk and change has to happen. It is important to work hard to navigate such situations respectfully, openly and in partnership

10. Outcomes [1–4]

- Effective behaviour modification aims to provide patients with the ability to:
  - develop strengths and abilities to be more effective in helping themselves
  - identify, clarify and manage their problems
  - change knowledge, feelings and understanding of themselves and their situation
  - view and experience themselves in accurate, helpful and constructive ways
  - develop involved and consistent personal skills

  - develop effective social support and community involvement
  - foster resilience by predicting potential future problems
- The outcomes for clinicians are to:
  - do no harm
  - encourage and maintain patient engagement and participation
  - help patients to achieve change and improve outcomes
  - implement effective, mutually agreed actions that address patient difficulties
  - improve the quality and effectiveness of service delivery

Engaging our patients isn't always about 'making things better'. Sometimes things can't change in the way we'd like. In this case it's about making the best of a situation while maintaining a respectful partnership despite actions that need to be taken i.e. patient beliefs or behaviours that impinge on safety

11. Where to from here?

- A first step is to develop and practice the skills and knowledge to communicate with our patients
- Understand the patients and population your service targets. For those in rural and remote areas of Australia this would include undertaking a cultural awareness program tailored to your population
- Although speaking with patients can be easy, speaking with patients in a meaningful, constructive manner to effect behavioural change can be difficult
- The skills and ability to purposefully engage patients to make positive changes takes time, experience and training
- Engage your local health service for communication, engagement and counselling training

12. References

- All Chronic Conditions Manual references are available at the Office of Rural and Remote Health website

13. Resources

1. There are numerous counselling, communication, engagement and partnerships programs available nationally. See your local jurisdiction for training options nationally e.g. the Family Partnership Model

Alcohol reduction

Recommendations [3]

1. Reducing the risk of alcohol related harm or injury over a lifetime

- The less a person chooses to drink, the lower their risk of alcohol-related harm. For some people not drinking at all is the safest option
- For healthy men and women, drink no more than 4 standard drinks on any one day and no more than 10 standard drinks per week

2. Children and young people < 18 years of age

- To reduce the risk of injury and other harms to health, children and young people < 18 years of age should not drink alcohol

3. Pregnancy and breastfeeding

- To reduce the risk of harm to the unborn child, women who are pregnant or planning a pregnancy should not drink alcohol
- For women who are breastfeeding, not drinking alcohol is the safest option

Note

- For signs of alcohol withdrawal see the *Primary Clinical Care Manual* e.g. tremor, agitation, sweating

1. The facts [1,2]

- Alcohol consumption continues to be a leading risk factor for death and injury in Australia, for all age groups, from:
  - chronic conditions
  - vehicle accidents
  - falls, fires, drowning
  - poisoning, overdose, suffocation
  - inhalation of vomit
  - assault and violence
  - intentional self-harm
- Twice as likely to cause death or injury in Aboriginal and Torres Strait Islander people
- Associated with up to 50% of all violent crimes (e.g. domestic violence) to family (including children), friends, workmates and strangers

Table 1. Response to alcohol [2,3]

Factor	Response
Gender	• Women affected more due to body and liver size, and leaner tissue • Male death and injury higher due to risk-taking behaviour
Age	• < 25 years are less tolerant and less experienced with effects of alcohol • Puberty is associated with higher risk-taking behaviours • Tolerance decreases with age, increasing risk of death and injury
Mental health	• Those with mental health conditions have worse symptoms after drinking • Can trigger mental health conditions in people who are prone
Medicines	• Can cause altered mood, behaviour, sedation, respiratory depression
Family history	• A family history of dependence increases risk of developing dependence
Comorbidities	• Exacerbation of conditions e.g. cirrhosis, hepatitis, pancreatitis

Blood alcohol concentrations (BAC) for driving in Australia:
- 0% for a holder of a learner or provisional license regardless of age and those with a commercial license for passenger vehicles (buses, taxis, planes) and trucks
- < 0.05% for a holder of an open license

2. Response to alcohol [1,2]

- Everyone's response to alcohol is different. No amount of alcohol is safe for everyone. See Table 1.
- How much a person thinks they can 'handle' can lead them to believe they can drink more without harm

3. Immediate effects of alcohol [1,2]

- Affects the brain within 5 minutes of being ingested:
  - reduces reaction to stimuli, coordination, speech, cognition and senses
  - increases feelings of relaxation, wellbeing and loss of inhibition
- BAC peaks after 30–45 minutes:
  - the liver takes about 1 hour to metabolise one standard drink
  - higher alcohol intake increases BAC by outpacing a livers' fixed metabolic rate
- As BAC increases:
  - drowsiness, loss of balance, nausea and vomiting occurs
  - physical performance, behaviour and memory progressively deteriorates
  - likelihood of aggression and physical violence increases due to impaired cognitive and verbal capacity to resolve conflicts
  - renal function impairment resulting in diuresis and dehydration
- As BAC reaches high levels:
  - life-threatening risks increase e.g. unconsciousness, inhibition of normal breathing, inhalation of vomit, injury, trauma, death
- Eating slows BAC as stomach contents reduces bloodstream absorption
- **Drinking coffee, having a cold shower, vomiting or exercising does not reduce BAC**
- After a heavy night of drinking, a person may have a BAC > 0.05% in the morning

4. Cumulative effects of alcohol [1,2]

- Associated with conditions that cause death or disability. See Table 2.

Table 2. Cumulative effects of alcohol [1,2]

Condition	Effect
Cardiovascular disease	• Raises blood pressure • Arrhythmias • SOB • Cardiac failure • Raises HDL-C • Mild anti-coagulating effect • Haemorrhagic stroke
Cancer	• Oral cavity, throat, oesophagus, liver, colorectum and breast • Tobacco use in drinkers further increases cancer risks
Diabetes	• Poor insulin sensitivity

Table 2. Cumulative effects of alcohol *(continued)* [1,2]

Condition	Effect
Nutrition	• Undernutrition • Thiamin, folate and vitamin A deficiency • Wernicke-Korsakoff syndrome • Inflamed skin, diarrhoea, dementia, and mouth sores
Overweight and obesity	• Overweight and obesity (adult), page 366
Fetal alcohol spectrum disorders (FASD)	• Developmental delay or disability (child), page 295
Liver diseases	• Hepatitis • Cirrhosis • Liver failure • Oesophageal varices • Hepatocellular carcinoma
Digestive system	• GORD • Pancreatitis • Gastritis • Gastric ulcers
Mental health conditions	• Depression and anxiety • Reduces antidepressant efficacy • Violence and self-harm
Dependence	• Takes priority over important behaviours e.g. parenting
Cognitive impairment	• Brain damage • Dementia
Self-harm	• Suicide and self-harm in both males and females of all ages
Higher BAC tolerance	• Increases cumulative effects of above

5. The standard Australian drink [1,2]

- Defined as containing 10 g of alcohol
- All canned, bottled or casked alcoholic beverages are required by law to be labelled with the approximate number of standard drinks. See Resource 1.

6. Identifying an alcohol problem [4]

- Take an alcohol consumption history if indicated
- Screen for **problem drinking** using a questionnaire. See Resources 2–4.
- Suspect **problem drinking** if clinical indicators are present. See Table 3.

Table 3. Indicators of problem drinking [4]

Context	Tips
Physical	• Bloodshot eyes • Dilated facial capillaries • Hand and tongue tremor • Hypertension • Gastrointestinal disorders • Cognitive impairment • Signs of trauma
Psychosocial	• Work, financial, marriage, legal or relationship problems • Insomnia • Think a lot about alcohol and when they will drink next • Become anxious or depressed when they don't drink • Use alcohol to deal with certain situations • Get violent, into arguments or have accidents • Are in debt because of drinking
Abnormal investigations	• Raised LFT • Raised mean cell volume • Raised BAC • Raised carbohydrate-deficient transferrin

- **Alcohol dependence** is likely if > 3 of the following are present:
  - strong desire to drink alcohol
  - difficulties in controlling alcohol use
  - persisting with alcohol use despite harmful consequences
  - a higher priority given to alcohol than to other activities and obligations
  - increased tolerance
  - sometimes a physical withdrawal state

7. Engaging a person with an alcohol problem [5]

- See Engaging our patients, page 19
- Discuss confidentiality
- Often people do not recognise they have a drinking problem
- Listen to the person without judgement or providing advice
- Be compassionate, open, honest, sincere and supportive
- Understand the person's perception of their drinking
- Outline what can be provided and how the person can be assisted
- Encourage person to set their own goals to reduce risky drinking. See Table 4.

Table 4. Tips to reduce risky drinking [5]

Context	Tips
Knowledge	• Know how many standard drinks are in each beverage. See Resource 1. • Count the number of standard drinks consumed • Keep a smart app drink diary. See Resource 5. • Drink low-alcohol beverages
Social	• Avoid people topping up your glass • Avoid keeping up with friends • Avoid drinking games • Refuse being pressured into drinking • Drink slowly • Take sips instead of gulps • Put the drink down between sips • Only have 1 drink at a time • Get involved in activities that don't involve drinking • Avoid drinking situations
Prevention	• Eat while drinking • Alternate between plenty of water and alcohol to prevent dehydration • Switch to low-alcohol drinks when starting to feel the effects of alcohol

8. Supporting a person with an alcohol problem

- Encourage the person to reach out to friends and family to support their efforts
- Refer to a MHAODs counsellor, social worker, psychologist or alcohol and drug information support services. See Resource 6.
- Clinicians can contact Alcoholics Anonymous and setup local support meetings or enrol people into nearby meetings via telehealth, MS Teams™ or Zoom™. See Resource 7.
- The only person that can reduce their alcohol intake is the person themselves:
  - many difficult lifestyle changes are required to alter drinking behaviours
  - many attempts to change drinking behaviours may occur before success
  - to continue drinking is a personal choice

- Clinicians can access withdrawal management tools and guidelines to assist people with alcohol reduction or cessation. See Resource 8.

9. Medicines for long-term management of alcohol dependence

- If considering medicines use, start after withdrawal symptoms have resolved, usually 3 to 7 days after the last drink

Table 5. Medicines for alcohol dependence [6]

Naltrexone • Convenient once a day first-line agent for long-term management of alcohol dependence • Contraindicated in those taking opioids, with liver failure or acute hepatitis • No effect in patients with minimal or moderate alcohol intake • Can cause liver toxicity. Assess liver biochemistry prior to commencing, monthly for 3 months, then (if normal) every 3 months • Side effects include nausea, but a gradual dose increase and night-time dosing can reduce this
Naltrexone 25 mg PO, nocte. Increase after 5 days to max. 50 mg daily
Acamprosate • May reduce some post-acute withdrawal symptoms, such as anxiety, irritability and cravings • Increases the time to first drink, prolongs abstinence, reduces the number of drinking days and especially with psychosocial intervention • Seek specialist advice before prescribing for patients with kidney impairment • Must be swallowed whole 3 times a day to maintain effect because of rapid renal clearance • Used as a first choice in patients whose options are limited by liver disease
Acamprosate If < 60 kg: 666 mg PO mane, 333 mg at midday and 333 mg nocte. If patient > 60 kg: 666 mg PO, tds

10. References

- All Chronic Conditions Manual references are available on the Office of Rural and Remote Health website

11. Resources

1. The Australian standard drink
2. The Indigenous Risk Impact Screen (IRIS): a 13-item screening instrument for alcohol and drug and mental health risk
3. The AUDIT Alcohol Consumption Questions (Audit – C): An effective brief screening test for problem drinkers
4. CAGE questions for alcohol use
5. Smart App drinks calculator
6. The National Alcohol and Drug Information Service or Turning Point counselling services or Mental Health, Alcohol & Other Drugs Service (MHAODs)
7. Alcoholics Anonymous contact for support meetings
8. The Good Practice Youth Guidelines and The Alcohol and Drug Withdrawal Guidelines

Diet and nutrition

Recommendations [1]

1. Achieve and maintain a healthy weight, be physically active and choose amounts of nutritious food and drinks to meet an individual's energy needs

- Children and adolescents should eat sufficient nutritious foods to grow and develop normally
- Children and adolescents should be physically active every day and their growth checked regularly
- Older people should eat nutritious foods and keep physically active to help maintain muscle strength and a healthy weight

2. Enjoy a wide variety of nutritious foods from all 5 groups every day

- Plenty of fruit and vegetables including different types and colours
- Grain (cereal) foods, mostly wholegrain or high cereal fibre varieties e.g. breads, cereals, rice, pasta, noodles, polenta, couscous, oats, quinoa and barley
- Lean meats and poultry, fish, eggs, tofu, nuts, seeds and legumes/beans
- Milk, yoghurt, cheese or their alternatives, mostly reduced fat (reduced fat foods not suitable for children < 2 years old)
- Drink plenty of water

3. Limit intake of 'discretionary' foods containing saturated fat, added salt, added sugars and alcohol

- Limit biscuits, cakes, pastries, pies, processed meats, burgers, pizza, fried foods, potato chips and other savoury snacks
- Replace high saturated fat foods e.g. butter, cream, cooking margarine, coconut and palm oil, with foods with polyunsaturated and monounsaturated fats e.g. oils, spreads, nut butters/pastes and avocado
- Low fat diets are not suitable for children < 2 years old
- Limit intake of foods and drinks containing added salt:
  - choose low sodium food options
  - do not add salt to foods when cooking or at the table
- Limit lollies, soft drinks and cordials, fruit drinks, vitamin waters, energy and sports drinks
- Limit alcohol intake

4. Encourage, support and promote breastfeeding

- Exclusively breastfeed infants until around 6 months of age when solid foods are introduced
- Continue breastfeeding until 12 months of age and beyond, for as long as the mother and child desire
- Women who feel supported by partner, family and the health service, often breastfeed for longer

5. Care for, prepare and store food safely [1]

- Incorrect handling and storage of food at inappropriate temperatures are major causes of bacterial and viral organisms reaching harmful food poisoning levels
- Take care when handling food to be consumed by people who have an increased risk of food-borne illness, such as pregnant women, infants, older people and people with certain medical conditions

1. Talking with patients [2–5]

- When discussing approaches to diet and nutrition consider:
  - the influence of cultural values or family beliefs on health behaviours
  - dietary preferences of the individual and family
  - the availability, affordability and ability to store healthy foods
  - psychosocial pressures affecting current eating patterns e.g. traditional events
  - strategies to control or reduce portion sizes e.g. use smaller plates
  - avoid situations that encourage unhealthy behaviours
  - identifying alternative affordable, familiar or suitable healthy foods
  - identifying and managing triggers for emotional eating
  - the importance of regular eating patterns and mindful eating
  - meal planning
- See Resources 1–13.

2. The facts [1,6]

- 5% of Australians eat the recommended daily intake of fruit and vegetables
- 67% of Australian adults and 25% of children are overweight or obese
- Being overweight reduces life expectancy and increases the risk of many chronic conditions. See Management of diagnosed conditions, page 196
- The best guide as to whether food intake is appropriate for:
  - children is if their growth is normal. See Body measurements (child), page 76
  - adults is if their weight is stable and within healthy limits. See Body measurements (adult), page 150

3. Breast and formula feeding [1,7,8,9]

- Breastfeeding benefits for infant include reduced risk of:
  - infections
  - asthma
  - SIDS
  - cognitive development issues
  - obesity
  - chronic conditions in later life
- Breastfeeding benefits for mother include improved:
  - infant attachment
  - quicker childbirth recovery
  - return to a healthy body weight
  - risk reduction of some cancers
- If breastfeeding is not possible, use infant formula until 12 months of age
- From 6 months, provide small amounts of cooled boiled tap water to supplement breast milk or infant formula. No other fluids < 12 months is recommended

- Promote and educate parents of the benefits of breastfeeding. See Resource 8.

4. First foods [1,7–9]

- Introducing first foods begins from 6 months, starting with:
  - iron fortified infant cereal or iron rich foods e.g. pureed meat or tofu
  - different tasting and textured nutritious foods
  - allergenic solids e.g. peanut butter, cooked egg, dairy and wheat products. This includes infants at high risk of allergy
- From 12 months of age, infants should be consuming:
  - a wide variety of nutritious foods enjoyed by the rest of the family which **sets the foundation for lifelong eating behaviours**
  - small amounts of pasteurised cow's milk in foods, cereals and sugar free custards
  - only water, breast milk or formula
- **Avoid giving infants:**
  - soy and other nutritionally incomplete plant-based milks (e.g. rice, oat, coconut or almond) < 12 months old unless:
    - under supervision of dietitian
    - with other sources of protein and vitamin B12 included in the diet
  - any fruit juice
  - goat's milk (due to high sodium/protein content)
  - honey (due to botulism risk)
  - low-fat or reduced-fat milks < 2 years old
  - teas, coffee, soft drinks, cordials, sports or energy drinks and flavoured milks
  - choking hazard foods < 3 years old e.g. nuts, cocktail franks
- See Resource 10.

5. Serve size [10]

- A serve is a set amount of food that does not change
- For pictures of food serve sizes, see Resource 14.

Serving sizes shown on food labels are not the same as nationally recommended serving sizes

- Not all food groups provide the same energy or nutrients per serve
- A serve of discretionary foods is smaller, less filling, lacks fibre and nutrients, contains high levels of saturated fat, sugar and salt
- **A serving size from the fruit, vegetable and legume groups is larger, more filling, higher in fibre and nutrients, and is the best choice when trying to lose weight**
- For meal planning, see Resource 6.

6. Portion size [11]

- Is the amount a person eats
- Eating larger portions than a daily recommended serve leads to weight gain
- Eating smaller portions than a daily recommended serve leads to weight loss. See Resource 15.

7. Preparing and storing food safely [12]

- Foodborne illnesses occur as a result of incorrect:
  - transport
  - storage
  - handling and preparation
  - temperature control
- Correct handling of food during all stages of its preparation and storage is essential to reduce the risk of contamination
- Those most at risk of serious illness from food poisoning are those with weakened immune systems, pregnant women, infants and older people
- High risk easily contaminated poorly stored and prepared foods are:
  - meat and poultry
  - dairy products
  - seafood
  - cooked rice and pasta
  - processed fruit and vegetables e.g. bagged salads
  - processed foods containing eggs or other protein-rich ingredients

Best before is how long a food should keep before it begins to deteriorate

Use by is how long a food can remain safe provided it has been stored according to labelled storage conditions and the package is unopened when purchased

8. Food labels [13]

8.1 Nutrition panel

- All packaged foods must display a nutrition information panel which should state:
  - the servings per pack
  - a serving size
  - a list of ingredients
  - a list of sugars, salts, fats and fibre
- Use food labels to compare the nutritional content of packaged foods

8.2 Health star rating system

- Features a rating between ½ and 5 stars; the more stars, the healthier the choice
- The nutritional content of similar foods can be compared at a glance
- Makes identifying healthy foods and drinks quicker and easier

8.3 Ingredients list

- **Sugar**
  - choose foods with < 15g/100 g of added sugars
  - other names for added sugar include:
    - dextrose, fructose, glucose, sucrose
    - malt, maltose, lactose

  - golden syrup, honey, maple syrup
  - brown, caster and raw sugar
- **Sodium (salt)**
  - choose foods with < 400 mg/100 g (< 120 mg is best) of sodium
  - high salt ingredients include:
    - baking powder
    - celery, garlic, onion, rock, vegetable and sea salt
    - meat/yeast extract
    - monosodium glutamate (MSG)
    - ascorbate, bicarbonate and nitrate sodiums
    - stock cubes
- **Total fat**
  - choose foods with < 10 g/100 g of total fats
  - for milk, yoghurt and ice cream, < 2 g/100 g is best
  - for cheese, < 15 g/100 g is best
- **Saturated fat**
  - Choose foods with < 3 g/100 g of saturated fat

9. References

- All Chronic Conditions Manual references are available on the Office of Rural and Remote Health website

10. Resources

1. Exercise and weight loss monitoring chart and Queensland Health's Weight loss planning
2. Talking about obesity: Obesity UK Language Matters Guide
3. Hunger level scale
4. My health for life and CSIRO Total wellbeing diet
5. The Queensland Governments Staying healthy diet and nutrition resources and Dieting and weight management guidance
6. Meal planning
7. Nutrition Education Materials Online (NEMO)
8. The Infant Feeding Guidelines
9. Dietary recommendations for clinicians to provide health advice
10. The Growing good habits resources: Giving Queensland children the best start in life
11. A Healthy weight calculator for children and teenagers
12. A Body mass index calculator for adults
13. The Australian dietary guidelines for all age groups
14. Pictorial representations of food serving sizes
15. Tips for losing weight healthily

Physical activity and sleep

Recommendations

1. Children aged 0–5 years [1]

- Should not be sedentary, restrained, or kept inactive, for more than 1 hour at a time, with the exception of sleeping
- Infants aged 0–1 year should be encouraged to do > 30 mins. floor-based play in a safe and supervised environment
- Toddlers and preschoolers aged 1–5 years should be physically active > 3 hours/day

2. Children aged 5–17 years [2]

- Accumulate > 60 mins. of moderate to vigorous physical activity every day
- Include a variety of aerobic activities, including light physical activity
- Engage in activities that strengthen muscle and bone > 3 days/week
- Additional health benefits are achieved with more hours of activity per day

3. Adults aged 18–64 years [3]

- Doing any physical activity is better than doing none
- Each week accumulate:
  - 150–300 mins. (2.5–5 hours) of moderate physical activity or
  - 75–150 mins. of vigorous physical activity
- Be active on most, preferably all days every week
- Do muscle strengthening activities on at least 2 days each week

4. During pregnancy [4]

- As per adults aged 18–64
- Aim to do pelvic floor exercises every day, while pregnant, then for life
- If planning to be very active during pregnancy seek medical advice
- As pregnancy progresses modify physical activity to avoid:
  - high falls or collision risk
  - heavy lifting
  - pain or discomfort
- A gradual return to recommended activity levels after 6-week postnatal health check

5. Adults > 65 years [5]

- Accumulate > 30 mins. of moderate physical activity on most, preferably all days
- Do any form of physical activity, regardless of age, weight, health problems or abilities
- Be active daily in as many ways as possible, doing a range of physical activities that incorporate fitness, strength, balance and flexibility
- Start any new physical activity at an easily manageable level and gradually increasing the amount, type and frequency
- Those with a lifetime of vigorous physical activity, continue at a level suited to their capability

6. Encourage good sleep hygiene [6]

- Everyone should have adequate uninterrupted nightly sleep:
  - 9–11 hours for 5–13 year olds
  - 8–10 hours for 14–17 year olds
  - 8 hours for adults > 18 years
- Identify and act on obstructive sleep apnoea (OSA) early

1. The facts [7–9]

- Australians are **less likely to meet physical activity recommendations** as they age:
  - **from 61%** of 2–5 year olds **decreasing to 8%** of 13–17 year olds
  - **from 48%** of 18–64 year olds **decreasing to 25%** of those aged > 65 years
- < 35% of children under 17 years **meet the sedentary screen-based activity recommendations**, particularly adolescent boys
- 30% of pregnant women meet guideline recommendations versus 47% of non-pregnant women in the same age group
- High socioeconomic groups are more likely to meet guideline recommendations compared to low socioeconomic groups
- Aboriginal and Torres Straight Islander:
  - children are **more likely** to meet guideline recommendations compared with non-Indigenous children
  - adults are **less likely** to meet guideline recommendations compared with non-Indigenous adults

2. Sedentary behaviour

2.1 Children aged 0–5 years [1]

- Avoid restraining for > 1 hour at a time e.g. stroller, car seat or high chair
- Screen time is not recommended. From 2–5 years limit to < 1 hour daily
- Engage infants with physical play, reading, singing, puzzles and storytelling

2.2 Children aged 5–17 years [2,3,10]

- Children in this age bracket:
  - spend more daily time engaged in screen-based activity (1½ hours) than being physically active (2 hours), increasing risk of backpain and headache
  - are more likely to avoid smoking, drugs and alcohol if they meet physical activity recommendations
  - with > 1 screen-based item in their bedrooms, spend 2 hours/week more sedentary than those without such items in their bedroom
- Minimise sedentary behaviours by:
  - limiting screen-based activities to < 2 hours//day
  - breaking up long periods of sitting as often as possible

2.3 Adults aged 18–64 years and pregnant women [3,9]

- Sedentary occupations and screen-based recreation are the greatest causes of inactivity in this group; 22 hours and 13 hours/week respectively

- Minimise the time spent sitting. Move as frequently as possible

2.4 Adults > 65 years [5]

- < 50% meet national recommendations
- Mortality risk is > 74% in sedentary older people compared to active individuals

3. Benefits of activity

- Provide Resource 1. to improve participation in physical activity
- See Table 1. for definitions of physical activity

3.1 Children and young people [1,2,11]

- Doing moderate to vigorous activity > 3 days/week:
  - for 40–70 mins. significantly improves cardiorespiratory fitness
  - improves skeletal health with high impact activities
  - for > 30 mins. improves muscle strength and flexibility
  - for > 60 mins. improves self-esteem, reduces anger and stress
- Any regular physical activity lowers risk of Overweight and obesity (child), page 372, Depression, page 286, Anxiety disorders, page 197, while improving cognitive ability, executive function and intelligence

3.2 Adults [3]

- Doing moderate to vigorous activity for > 60 mins. > 3 days/week:
  - reduces the risk of Coronary heart disease, page 264, Heart failure, page 325 and Stroke and transient ischaemic attack, page 413 by 20–30%
  - reduces the risk of Diabetes, page 304 by improving glucose regulation and insulin resistance
  - reduces risk of Hypertension, page 345, Dyslipidaemia, page 317 and Overweight and obesity (adult), page 366
  - can reduce the risk of colon cancer by 30% and breast cancer by 20%
- Weight bearing and resistance and muscle strengthening activities help protect against Osteoarthritis, page 354, bone mineral density, functional status, and falls and fracture risk

3.3 During pregnancy [9]

- The physical activity benefits for adults apply to women during pregnancy, plus reduced risk for:
  - excessive weight gain
  - gestational diabetes
  - pre-eclampsia
  - pre-term birth
  - varicose veins
  - deep vein thrombosis
- Healthy women with an uncomplicated pregnancy can exercise safely, but may not due to fears of harm to their unborn child

3.4 Older people [5]

- Physical activity offers an effective, non-pharmacological intervention for improving and maintaining quality of life
- The benefits of physical activity for < 65 years extend to those > 65 years primarily by preventing Coronary heart disease, page 264 and Diabetes, page 304

- Both strengthening and aerobic exercises can reduce pain and improve function and health status in those with Osteoarthritis, page 354

Table 1. Definitions of activity [2–4]

Activity	Meaning
Physical	• Any movement produced by skeletal muscles that expends energy
Sedentary	• Activity that involves sitting or lying down, with little energy expenditure e.g. office or vehicle based work, screen-based and electronic media activities or reading
Light	• Day to day home, workplace or community based activity e.g. standing up, moving around, cleaning or cooking
Moderate	• An intensity that requires some effort but still allows a conversation to be had e.g. brisk walking, gentle swimming, lawn mowing or tennis
Vigorous	• Makes you breathe hard or breathless e.g. aerobics, jogging, cycling or competitive sports
Muscle strengthening	• Improves strength, power, endurance and size of skeletal muscles by resistance exercises e.g. push-ups, chin-ups, weights or dumbbells
Weight bearing	• Carrying shopping, lifting weights
Aerobic	• Requires adequate oxygen supply • Involves large muscle groups moving at pace for > few mins. • Improves the transport and uptake of oxygen by the cardiorespiratory and metabolic systems, to provide energy for working muscles e.g. walking, swimming, cycling, dancing or competitive sports
Anaerobic	• Does not require regular supply of oxygen to working muscles • Very short term activities before becoming aerobic e.g. sprinting or lifting heavy weights

4. Sleep hygiene [6,12–16]

- Many factors can affect sleep including:
  - medications
  - OSA
  - normal aging
  - neurocognitive disorders
  - pain
  - night-time toileting (nocturia)
  - stress, anxiety and depression
- People > 45 years that sleep < 5 hours/night have a 30% higher risk of developing multiple chronic conditions. Risk increases to 40% for > 70 year olds
- OSA related mortality is higher in Aboriginal and Torres Straight Islander populations
- **Risk of insomnia increases with comorbid conditions which in turn interrupts sleep**
- Insomnia contributes to higher rates of depression and overlapping symptoms. See Table 2.
- Sleep disorders affect women more commonly than men

Table 2. Overlapping symptoms of insomnia and depression [14–16]

Mood	Physical
• Feelings of hopelessness or helplessness • Lack of motivation • Loss of self-worth • Worries about being a burden, a sense of worthlessness or self-loathing • Fixation on death or thoughts of suicide • Social isolation	• Fatigue and memory difficulties • Daytime sleepiness and poor functioning • Impaired reasoning, and problem solving • Decreased concentration • Unexplained or aggravated aches and pains • Weight loss or loss of appetite • Neglecting personal care • Skipping meals, forgetting medications or disregarding personal hygiene

4.1 Improving sleep [14–16]

- Key strategies include:
  - cease smoking and do regular physical exercise
  - get daily light exposure
  - do not nap throughout day
  - reserve the bed for sleep only, not wakeful activities e.g. screen time
  - avoid or cease sleep-interfering substances e.g. alcohol, marijuana, caffeine
  - have a light dinner and avoid middle-of-the-night eating
  - avoid screen time for a half hour before sleep
  - optimise environment e.g. limit light, noise, and extremes in temperature
  - do not go to bed until sleepy and keep a regular sleep schedule
  - leave bed if not tired and return when they are
  - get up each morning at the same time, irrespective of sleep quality
- Assess a patient's daytime sleepiness and OSA risk by using a validated tool. If they score highly refer to a sleep specialist. See Resource 2.

4.2 Behavioural Therapy: A Proven First-Line Intervention [12–14]

- Cognitive behavioural therapy for insomnia (CBT-I) is standard first-line treatment for insomnia
- Insomnia is hard to treat with medicines. Long-term use can cause further sleep issues, addiction and cognitive impairment
- **A free mobile phone app, CBT-i Coach, provides different tools to establish improved sleep habits, as well as to identify potential factors that may be causing insomnia.** See Resource 3.

5. References

- All Chronic Conditions Manual references are available on the Office of Rural and Remote Health website

6. Resources

1. A variety of Nationally developed physical activity resources
2. The Epworth Sleepiness Scale and STOP-Bang questionnaire
3. CBT-i Coach for Android or CBT-i Coach for Apple

Sexual and reproductive health

Recommendations

1. Sexual safety [1–3]

- Every individual has the right to be free of:
  - sexual assault; where a person assaults, witnesses, procures, coerces or commits gross sexual indecency upon another person, without the person's consent
  - sexual harassment; behaviour that is intentionally offensive, humiliating, intimidatory or predatory in nature that subjects a person to any unwanted sexual act, request, favour, remark, connotation or conduct

2. Safe sexual practice [1–4]

- Use condoms and vaginal dams to reduce risk of STI's
- Use pre-exposure prophylaxis (PrEP) to reduce risk of HIV
- Arrange contraception prior to sexual encounters to avoid unintended pregnancy
- Stay emotionally healthy and in control by deciding:
  - whether and when to have sex
  - when to start having sex
  - who to have sex with
  - how to have sex
  - to have safe sex every time
- Do not have sex with a person who has a visible sore, ulcer or lump on the genitals or around the anal area

3. Communication [1,2,3]

- If having unprotected sex, talk about risks with partner
- Open discussion fosters a shared understanding of the need for protected sex in some cases

4. Other ways to have sex

- Explore diverse ways to enjoy physical intimacy that reduces risk of STIs or unintended pregnancies
- Use condoms on sex toys and change the condom for each person. Wash toys and hands after use

5. Avoid alcohol and other drugs [3]

- Excessive alcohol and other drug intake may affect a person's ability to provide consent or make safe decisions
- Monitor alcohol and other drug intake to stay in control and make safe and rational sexual choices

6. Act on unprotected sex [1,3]

- After an unprotected sexual encounter, have a sexual health check-up and consider emergency contraception or post-exposure prophylaxis (PEP) for HIV

Note:

- In the event of a sexual assault, an acute STI presentation or opportunistic screening, see the *Primary Clinical Care Manual*

1. The facts [1,3,4]

- The most common STIs in Australia are chlamydia, genital herpes, genital warts, trichomoniasis, gonorrhoea, hepatitis B, syphilis and HIV
- Syphilis is a significant concern in rural and remote regions of Australia
- > 50% of STI notifications in Australia are among 15–24 year olds
- STIs often don't cause symptoms
- People are always at risk of an STI after an encounter of unprotected sex
- Those who use illicit drugs or consume excessive amounts of alcohol are twice as likely to acquire an STI
- Provide Resources 1–4.

2. Priority groups and testing intervals [3,5,6]

- Stigma and discrimination in some priority groups can lead to fears of disclosure and heightened secrecy
- See Resource 5. for detailed testing intervals

2.1 Newborns

- Some STIs can be transmitted from a mother to child during pregnancy or childbirth e.g. syphilis, herpes, chlamydia, etc
- Screening is performed before and after pregnancy

2.2 Children and young people [3,5,6]

- Always consider decision making capacities of young people < 18 years
- Refer to age and cultural specific services to provide management strategies. See Resource 5.

A child with an STI may indicate sexual abuse. See Child safety reporting, page 428

2.3 Aboriginal and Torres Strait Islander people [3,5–7]

- STIs occur at significantly higher rates in this group
- A Reproductive health, page 185 check is recommended annually or opportunistically as indicated
- Discussing sexual health matters can cause feelings of 'shame'
- In some communities it is considered taboo for men and women to discuss sexual behaviour with each other
- Always refer to an Aboriginal and Torres Strait Islander Health Worker or Health Practitioner. See Resource 4–6.

2.4 Men who have sex with men (MSM) [3,5,6,8]

- This group are increasingly affected by STIs due to reduced condom use
- A Reproductive health, page 185 check is recommended annually for all men who have had any type of sex with another man in the previous year
- All MSM who fall into one or more of the following categories should be tested up to four times a year:

- unprotected anal sex
- > 10 sexual partners in 6 months
- participation in group sex
- recreational drug use during sex
- are HIV-positive
- see Resource 7.

2.5 People in custodial settings [3,5,6]

- Regular Reproductive health, page 185 check-ups are recommended for all inmates of a prison

2.6 Sex industry workers [5,6,9]

- There is no evidence that sex workers in Australia have higher rates of STIs than the general population
- A sex industry worker cannot work, or a brothel licensee/manager cannot allow a sex industry worker to work, when known to be infected with an STI
- Regular testing for STIs and blood borne viruses is recommended. Frequency is determined in consultation with the sex worker and guided by risk assessment
- Sex workers may request more frequent testing to comply with jurisdictional-based legal frameworks and workplace requirements. See Resource 8.

2.7 Travellers and mobile workers [2,4,6]

- Travellers for recreation or work e.g. fly in fly out (FIFO) workers may behave differently when travelling, putting them at risk of STI exposure
- A Reproductive health, page 185 check is recommended opportunistically
- Confirm hepatitis B status and vaccinate if not immune. See Hepatitis B, page 337

2.8 Refugees and migrants [3,5,6]

- Language and culture, trauma, trust, stigma, cost, low awareness and knowledge, unfamiliarity with the Australian health system, traditional beliefs, and fear put this population at high risk of STI infection
- Use an interpreter for those from non-English speaking backgrounds
- Offer a full STI screen according to the *Primary Clinical Care Manual*

2.9 People who are deaf or hearing impaired [3]

- Includes those who are late-deaf and deaf-blind
- Consider barriers to accessing health care, the environment and interpreters

2.10 People with disability [3]

- Consider those with impaired cognitive function
- May have limited capacity to communicate or make informed decisions
- Facilitate access to appropriate support workers and interpreters

2.11 Gender and sexually diverse people [3,5]

- Experience poor mental health and high rates of substance abuse, social isolation and exclusion and subsequently poorer health outcomes
- May have a sexual orientation that increases their risk of sexual and mental health problems
- Facilitate access to appropriate support workers and service options. For gender and sexually diverse Aboriginal and Torres Strait Islander people, see Resource 9.

2.12 Older people [3]

- Elderly people have sex
- Consider presence of Reproductive health, page 185, inappropriate sexual behaviour, frailty, mobility and communication deficits (hearing, sight and speech)

3. STI testing and treatment

- Refer to the *Primary Clinical Care Manual* for STI testing and treatment options

3.1 Maintain confidentiality [3]

- Discuss ways the health service protects patient confidentiality e.g. using a health service endorsed coding system when requesting and receiving STI specimens and results
- Discuss ways patients can protect their testing and treatment confidentiality, by carefully considering who they discuss health issues with

3.2 Informed consent

- Discuss:
  - identifying and treating STIs to improve health and reduce risk of transmission
  - how the test is done e.g. urine, swab or blood
  - what the test does, and does not provide
  - if and when repeat testing will be necessary
  - the requirements for a notifiable infection if the result is positive
  - that partners will need to be offered testing and treatment if results are positive. See 4. Contact tracing

3.3 History[1]

- Whether disclosed or not, a history should include:
  - types of sexual behaviour
  - when exposure occurred
  - previous STIs and treatment

3.4 Prior to the results

- Discuss:
  - how and when to obtain results
  - 5. Education and prevention to avoid future risk
  - safe sex practices
- Discuss implications of a positive result:
  - access to professional support e.g. social worker or counsellor
  - family or friend support
  - options for medical treatment and follow-up
  - need for leave from employment

3.5 After the results

- For a **negative** result discuss:
  - what the result does and does not provide
  - if or when repeat testing is necessary (STI window periods)
  - safe sexual practices

- For a **positive** result:
  - allow for an open relaxed discussion. Listen and encourage questions
  - be guided by the person's response to determine how much information to provide and avoid overloading them
  - offer ongoing social-emotional support and management
  - refer to a local sexual health clinic or service for counselling. See Resource 10.
  - ensure the person has a support network
  - discuss 4. Contact tracing
  - provide 5. Education and prevention to avoid future risk

4. Contact tracing [9]

- Contact tracing is the identification and treatment of sexual contacts of a person who has tested positive for an STI; it isn't complex or time consuming
- Essential to control spread of the infection. Requires sensitivity and confidentiality

4.1 Procedure [9]

- Discuss the reasons for contact tracing:
  - to ensure partners are offered screening and treatment to avoid health risks
  - the public health implications and health outcomes for untreated STIs
  - most people don't know they have an STI and can continue to spread it to others
- Identify partner(s) that need to be informed. Use cues e.g. locations, events

Table 1. Tips to let a sexual contact know to be tested

Method	Tips
In person or by phone	• Most people like to be told in person • Most people report that telling their partner(s) was easier than they thought it would be • Do it straight away. If delayed the discussion may never happen • Plan the conversation. For sample conversations see Resource 11. • Don't feel the need to provide a lot of details. Provide a fact sheet, a website or phone numbers to contact • Avoid phrases like "you've given me chlamydia" which may make a partner defensive
By SMS or email	• If anyone else might read the SMS or email, use another method • Be direct, objective, factual and free of emotion • For SMS or email contact tracing examples see Resource 11.
Some people may react badly to being told they are at risk of an STI. If a person thinks their partner could become abusive, consider using an anonymous email or SMS or ask their health provider	
This service is for legitimate purposes. Consider implications to the recipient. Under Australian law, the use of a telecommunication service to menace or harass is a criminal offence. If potential misuse of this service is reported to police by a message recipient, the provider will cooperate with a police investigation	

- Allow the person the opportunity to inform their contacts. See Table 1.
  - discuss how a partner might react to the news
  - for concerns of a violent reaction or a history of domestic violence offer referral

to the local sexual health clinic for social work support. See Resource 10.

- Schedule a follow-up visit or phone call to determine if the person was able to contact trace their partner(s)
- If the contact tracing process is problematic, refer to a specialist service. See Resource 10.

It is the responsibility of clinicians to perform contact tracing if the person has not done so

5. Education and prevention [6]

- Every inquiry is an opportunity for preventative sexual and reproductive health education without judgement
- Preventative education is the same for all people; to encourage safe sexual and reproductive health
- Tailor education to an individual's lifestyle, belief, culture, sexual practices and risk behaviours e.g. speaking with a young Aboriginal man from a remote community will differ to speaking with an older urban lesbian woman
- Provide written, verbal or website information. Provide Resource 8.

5.1 Vaccination [6]

- Vaccination is the most effective means of reducing and preventing the transmission of hepatitis A and B and HPV

5.2 Condoms [6]

- Condoms and water-soluble lubricant reduces STI risk by 97% for penetrative sex
- Offer to demonstrate correct condom use. Discuss where affordable or free condoms and lubricant can be accessed; usually free from rural and remote health facilities
- Discuss safe sex messages and partner negotiation to ensure condom use

5.3 Reducing sexual partners

- Reducing sexual partner numbers reduces STI risk
- Mutual monogamy eliminates the risk of STIs
- Encourage honest sexual relationships by communication

5.4 Clean injecting equipment

- Blood borne infections and STIs are closely linked
- Injecting drug users should be alerted to the risks of sharing injecting equipment
- Provide service information where clean injecting equipment can be obtained. See Resource 10.

5.5 Safe sexual choices [1–4]

- Encourage to openly communicate, **consent** and negotiate safe sexual practice
- Discuss abstaining from sex and having a Reproductive health, page 185 check prior to a new sexual relationship
- Taking a break or saying 'no' are healthy sexual practice options and removes the risk of contracting or passing on STIs

5.6 PrEP and PEP

- These antivirals can be prescribed by the MO/NP if HIV exposure is or was likely within 72 hours

6. Contraception [10]

- In choosing a contraceptive method, the person might be influenced by:
  - culture
  - efficacy
  - side effects
  - pregnancy risk
  - reversibility
  - age
  - relationship status
  - personal beliefs
  - socioeconomic circumstances
  - usability
  - level of protection
  - accessibility
  - cost
  - incorrect use or failure
  - clinical follow-up requirements
- Provide resources so a person can make an informed choice about their current and future fertility. See Resources 3. and 12.
- See Table 2.

Table 2. Contraception options [10]

Long acting reversible contraception (LARCs)
• Suitable for women of any age • Provides no protection against STIs • The **hormonal intrauterine deveice (IUD)** (e.g. Mirena™) is 99.8% effective. The **copper IUD** is 99.2% effective. Both can be removed at any time and is immediately reversible. Replaced every 5–10 years • **Implant** (e.g. Implanon™) are inserted under the skin of the inner arm above the elbow. 99.9% effective. Replaced every 3 years or removed earlier if required • **Depot medroxyprogesterone acetate** is an IM injection every 12 weeks and is 94–99.8% effective. There may be a delay in return to fertility after stopping the injection
Short acting hormonal methods
• The **contraceptive vaginal ring** is a soft plastic ring that releases low doses of oestrogen and progestogen, is self-inserted, and remains in the vagina for 3 weeks. It is removed and replaced with a new ring a week later. 93–99% effective • **Combined oral contraceptives (COC)** ('the pill') are oestrogen and progestogen pills that relies on consistent daily use to be 93–99% effective • The **progestogen only pill** ('mini-pill') is a progestogen only pill that relies on consistent daily use to be 93–99% effective
Barrier methods
• The **male condom** is a latex or polyurethane sheath, rolled onto an erect penis before sex. 87–98% effective in preventing pregnancy • The **female condom** is a polyurethane sheath, inserted into the vagina before sex. 79–95% effective in preventing pregnancy • The **diaphragm is a** dome-shaped silicone cap, placed in the vagina over the cervix before sex to stop sperm entering the uterus. 82%–86% effective in preventing pregnancy
For all above, see the *Primary Clinical Care Manual* for further information **Check for PBS and LAM for approval or restrictions**

Table 2. Contraception types *(continued)* [10]

Lactational amenorrhoea method
• Breastfeeding reduces the probability of ovulation (egg release) occurring • 98% effective when menstrual periods have not returned **AND** the mother gave birth less than 6 months ago **AND** the mother is exclusively breastfeeding
Fertility awareness based methods (FABMs)
• FABMs rely on specialist education to identify the fertile phase of the menstrual cycle to indicate when sex should be avoided to prevent pregnancy. FABMs are 75%–99.6% effective
Withdrawal
• Withdrawal is where the penis is withdrawn from the woman's vagina before ejaculation • Can be highly effective but is not recommended as a form of contraception
Abstinence
• Abstinence, 'taking a break' or saying 'no' to penetrative sex is an option which is 100% effective in preventing pregnancy
Sterilisation
• Sterilisation is permanent contraception which can't be reversed • Sterilisation methods are 99.5% effective • Female sterilisation (**tubal ligation**) involves an operation blocking the fallopian tubes to stop the passage of the ovum (egg) • Male sterilisation (**vasectomy**) involves a simple operation performed under local anaesthetic on the vas deferens to prevent sperm from joining the ejaculate fluid
Emergency contraception (EC)
• Reduces the risk of unintended pregnancy after unprotected sex • EC (levonorgestrel 1.5 mg) is not a method of regular contraception • The **oral emergency contraception** can be taken up to 5 days after unprotected sex but it is most effective if taken in the first 24 hours. Up to 85% effective when taken within 72 hours • The **copper IUD** is inserted in the first 120 hours (5 days) after sex. Provides immediate and ongoing contraception provided the implant is retained. 99% effective
For all above, see the *Primary Clinical Care Manual* for further information **Check for PBS and LAM for approval or restrictions**

7. Termination of pregnancy

- Refer to the *Primary Clinical Care Manual* or the MO/NP

8. References

- All Chronic Conditions Manual references are available at the Office of Rural and Remote Health website

9. Resources

1. Queensland Health sexual health resources and information
2. A detailed list of sexually transmitted infections is available from the Australian STI Management Guidelines for use in primary care
3. 4 C's of safe sex – Consent, Condoms, Contraception, and Communication
4. Body Talk
5. The Australian Sexually Transmitted Infection and HIV Testing Guidelines 2019
6. Young Deadly Free sexual health resources for health professionals and Aboriginal and Torres Strait Islander people
7. The Drama Downunder
8. Sex workers STI management and testing guidelines
9. Sexually and gender diverse Aboriginal and Torres Strait Islander people information
10. List of Queensland sexual health and HIV services
11. Contact tracing services Let them know or The Drama Downunder
12. Contraception Options - Which one is best for me?
13. ASHM Publications (2013) Guide to Australian HIV Laws and Policies for Healthcare Professionals and National and Queensland guidelines

Smoking cessation

NOTE: Given established and growing evidence that vaping e-cigarette fluid causes ill-health, the term "smoking" will also include this form of inhaled product as well as tobacco

Recommendations

1. Cease or prevent commencing smoking [1–5]

- Smoking cessation or not commencing smoking reduces a persons risk of cardiovascular and respiratory diseases and cancers, many other chronic conditions and premature death
- Non-smoking parents, or those who succeed in ceasing to smoke, have the most evident effect on a child abstaining from taking up smoking

2. Encourage and assist smokers to quit and prevent relapse [1–5]

- Support smokers to access freely available QUIT resources and services
- Assist smokers to quit with evidenced counselling, subsidised medicines and nicotine replacement therapy (NRT)

3. Eliminate harmful exposure to smoke among children and non-smokers [1–7]

- Do not smoke while pregnant
- Do not smoke indoors, in vehicles, within 10 meters of public buildings or in public spaces
- Do not smoke around children
- Educate children from a young age on the dangers of smoking products

4. Reduce environmental harms from smoking products [8]

- Dispose of smoking products legally and responsibly to reduce toxic exposure to infants and animals from ingestion, soil and water contamination and fires

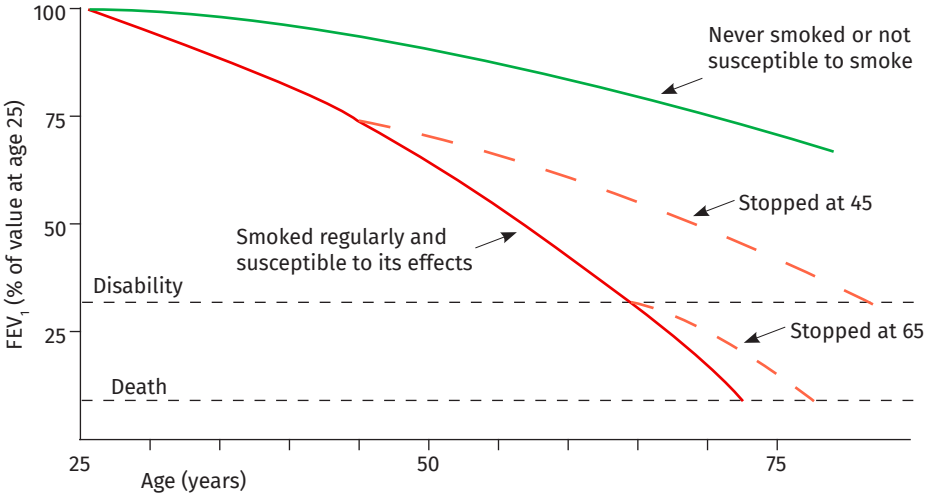
1. The facts [1–5]

- 11% of Australians smoke
- Tobacco smoke contains > 7,000 chemicals with > 69 known carcinogens
- E-cigarette liquids contain > 243 chemicals including solvents, nicotine, pesticides and metals
- The leading preventable behavioural risk factor for chronic conditions and 8 million premature deaths worldwide annually
- Carries the highest burden of drug-related costs on the Australian economy
- 50% of long-term smokers will die prematurely as a result of smoking related diseases. See Graph 1. and Table 1.

1.1 High prevalence populations [1–5]

- Populations that smoke at higher rates than the general population:
  - living in rural and remote areas
  - LGBTQI+
  - unemployed and single parents
  - homeless and prison inmates
  - mental illness and substance use disorders
  - military personnel and veterans

Graph 1. Risks from smoking [8]



The effect that smoking and ceasing smoking, has on the volume of air that can be forced out of the lungs in one second after taking a deep breath (FEV_1). Susceptible smokers will have different rates of loss, thus reaching "disability" or "death" at different ages

Table 1. Some health effects from smoking [1–11]

System	Effect
Eyes	• Macular degeneration and cataracts
Hair	• Loss
Skin	• Ageing, wrinkles and wound infections
Brain	• Stroke and transient ischaemic attack, page 413
Mouth and pharynx	• Cancer and gum disease
Lungs	• Cancer, chronic bronchitis, Bronchiectasis, page 233, emphysema, tuberculosis, Chronic obstructive pulmonary disease, page 255, Asthma (adults and children > 12), page 204, Asthma (children 1–12 years), page 215 and pneumonia
Heart	• Coronary heart disease, page 264 and MI
Stomach	• Cancer and ulcers
Pancreas	• Cancer • Impaired β-cell function and glucose metabolism leading to Diabetes, page 304
Bladder and kidney	• Cancer
Female reproductive system	• Cervical and ovarian cancer, early menopause and irregular and painful periods, reduced fertility, unpleasurable sex, inability to orgasm and bacterial vaginosis • Taking oral contraceptive pill while smoking increases risk of MI two fold, and Coronary heart disease, page 264 twenty fold

Table 1. Some health effects from smoking *(continued)* [1–11]

System	Effect
Male reproductive system	• Erectile dysfunction, decreased sperm quality and sperm DNA damage
Arteries	• Peripheral vascular disease
Bones	• Osteoporosis, page 360, cancer
Liver	• Cancer
Hands and feet	• Persistent pain, page 387, gangrene and amputation
Pregnancy	• Spontaneous abortion or miscarriage, ectopic pregnancy, premature rupture of the membranes, placenta previa and abruption and preterm delivery
Unborn child and infant	• Cardiovascular and musculoskeletal defects, limb reduction defects, missing or extra digits, clubfoot, fused skull sutures, face and eye defects, orofacial clefts, gastrointestinal defects, absent anal opening, hernia, leukaemia, behavioural problems, nicotine dependence, undescended testes

1.2 During pregnancy [1–7]

- 8.7% of women smoked during pregnancy at sometime
- 36% of rural and remote mothers smoke during pregnancy at sometime
- Maternal smoking is associated with significant risks to pregnancy, newborn and infant defects. See Table 1.

1.3 Infants and children exposed to smoke [1–5,12]

- Infants and children < 5 years are at higher risk of dying if both parents smoke
- Infants exposed to secondhand smoke have double the risk of SIDS due to:
  - thickening and inflammation of the airways
  - increased susceptibility to lung infections
  - the body's impaired control over respiration and heart rate
  - an impaired autonomic response to begin breathing after an episode of apnoea
- Children exposed to secondhand smoke experience higher rates of:
  - Asthma (children 1–12 years), page 215
  - respiratory tract infections
  - decreased lung function
  - ear infections
  - reduced sense of smell
  - long term developmental effects
  - childhood cancers
- Infants and children are susceptible to the effects of secondhand smoke due to:
  - higher breathing rates
  - greater lung surface area
  - immature lungs
  - inability to control the environment or avoid exposure
- Infants and children most likely to be exposed to secondhand smoke are from:
  - overcrowded households
  - rural and remote locations

- low socioeconomic households
- single-parent households
- households that do not ban indoor smoking

1.4 School students and teenagers [1–5]

- The majority of smokers start as teenagers
- In 2017, tobacco smoking rates were the lowest observed since the 1980's at 5%, but vape use is increasing

1.5 Aboriginal and Torres Strait Islander populations [1–5]

- 37% of Aboriginal and Torres Strait Islander people > 15 years smoke; highest in rural and remote areas than in urban areas

1.6 Vapes (e-cigarettes) [1–5]

- A younger generation of smokers are becoming daily nicotine users since the introduction of vapes to Australia in the mid 2000's
- In 2017, 21.6% of Aboriginal and Torres Strait Islander students reported ever using vapes; significantly higher than non-Indigenous students at 13.5%
- In 2019, the rate of vape use in 18–24 year olds was 26%

2. Intervention and support [12–14]

- See Engaging our patients, page 19
- Determine a person's willingness to cease smoking
- Be nonjudgmental, compassionate, open, honest, sincere and supportive
- **Do not** lecture, threaten or confront:
  - listen
  - acknowledge the difficult nature of smoking dependence
  - many lifestyle changes are required to change smoking behaviours
  - outline what can be provided and how the person can be assisted
- **The only person who can stop smoking is the person themselves. Respect a persons choice not to quit**

2.1 Behavioural and information based support [12–14]

- Ask:
  - why they smoke?
  - their interest in quitting or cutting down; what stops them?
  - motivations or reasons for quitting? Prompt examples:
    - calculate the annual cost of smoking cigarettes. See Resource 2.
    - calculate how much a patient smokes in pack/years. See Resource 3.
      - refer for lung cancer screening for; a history of > 20 pack/years of smoking, aged 50–79 years **or** actively smoked within the last 15 years
    - regaining control and being smoke free
    - clean breath, clothes and house
    - being a role model to children and protecting others from secondhand smoke
  - smoking habits and triggers?
- Advise:
  - ceasing smoking is the most beneficial action a person can do for their health

and discuss:
- 1. The facts
- Table 2. The health benefits of smoking cessation
- 2.2 Nicotine and dependence

– the health service is always available when they're ready to take action

Table 2. The health benefits of smoking cessation [13,14]

Time ceased	Health effect
6 hours	• Heart rate slows and blood pressure decreases
24 hours	• Almost all of the nicotine leaves the bloodstream • Venous carbon monoxide levels fall • Oxygenation of muscles (including heart muscle) improves • Fingertips become warmer and hands steadier
7 days	• Sense of taste and smell improves • The lungs' ability to clear secretions, tar and dust begins to recover • Higher blood levels of antioxidants such as vitamin C
2 months	• Reduced coughing and wheezing • The immune system begins to recover • Blood flow to hands and feet improves
6 months	• Lung function improves, producing less phlegm • Stress levels decrease
> 1 year	• Lung function improves, breathing easier
2–5 years	• A marked reduction in risk of heart attack and stroke • The risk of cervical cancer is the same as someone who has never smoked
> 10 years	• The risk of contracting lung cancer is lower than that of a continuing smoker
> 15 years	• The risk of heart attack, stroke and mortality is close to that of a person who has never smoked

- Offer:
  - QUIT self-help resources or referral. See Resource 4.
  - counselling, psychologist or mental health service referral
  - medicine options including NRT
- **If person wishes to cease smoking provide a clear smoking cessation pathway. See Figure 1.**

2.2 Nicotine and dependence [1–4,8,10,11,13]

- A lethal nerve toxin; the most addictive of tobacco compounds
- Rapidly delivered to and metabolised by the brain, organs and muscles by inhalation resulting in:
  - ↑ heart rate and blood pressure
  - ↓ blood flow in the skin
  - ↓ metabolic rate and appetite
  - vasoconstriction of coronary arteries
  - altered brain wave and endocrine changes

  - ↑ blood flow to and relaxation of skeletal muscle
  - impaired glucose tolerance
- Rapidly triggers release of pleasurable neurotransmitters
- Levels rise quickly after inhalation, accumulates in blood, falling over 6–8 hours
- Accustomed levels in blood is maintained by self-administration
- Inhalation frequency and depth increases to maintain diminishing effects
- Assessing nicotine dependence guides management intensity. See Table 3.

Figure 1. Pathway for smoking cessation

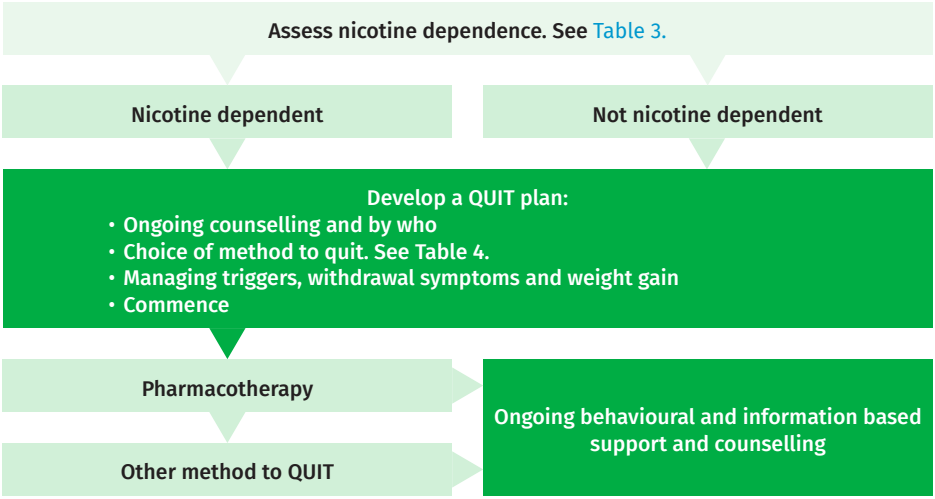


Table 3. The Fagerstrom test for nicotine dependence [6,12]

Questions	Answer	Score
How soon after you wake up do you have your first cigarette/vape?	• Within 5 mins. • 6–30 mins. • 31–60 mins. • After 60 mins.	3 2 1 0
Do you find it difficult to refrain from smoking in places where it is forbidden?	• Yes • No	1 0
Which cigarette/vape would you hate to give up most?	• The first one in the morning • All others	1 0
How many cigarettes/vapes per day do you smoke?	• 10 or less • 11–20 • 21–30 • 31 or more	0 1 2 3
Do you smoke more frequently during the first hours after waking than during the rest of the day?	• Yes • No	1 0
Do you smoke if you are so ill that you are in bed most of the day?	• Yes • No	1 0
Answers tallied to give a score > 6 is an indicator of high dependence		

3. Develop a Quit plan [13–15]

- Assist the person to:
  - confirm their readiness to quit
  - set goals and steps for quitting e.g. total cessation. Not 'a single puff'
  - choose a method to quit and what it entails e.g. counselling, coach, medicines
  - **set a quit date and begin**
  - manage triggers, withdrawal and weight gain
  - maintain tobacco abstinence, preferably with support

3.1 Counselling [1–4,8,10,11,13–17]

- Involves mutual problem solving, behavioural skills training, and social support and encouragement
- Smoking cessation with counselling has higher success rates than without
- Refer to a social worker or psychologist for scheduled:
  - phone or face-to-face counselling **or**
  - group therapy

3.2 Choosing a method to quit [1–4,8,10,11,13–17]

- The likelihood of quitting tobacco increases with counselling combined with dedication to a chosen method to quit. See Table 4.
- NRT has shown the most success rates of cessation by reducing withdrawal symptoms and blunting the satisfying effects of nicotine
- Combination therapy NRT patches with oral NRT or adjuvant medicines has proven to considerably increase quit rates

Table 4. Methods to quit smoking [1,3,4,13–17]

Coaching		
• Can provide structure, motivation and support to: – help organise and remind the person of what and when to do things – help develop reasons to quit – build confidence and encouragement – learn new skills to manage cravings, withdrawal, weight and/or stress • Can be a friend, health clinician or a qualified support service. See Resource 2.		
Nicotine replacement therapy (NRT) for 8–10 week use or 12 weeks from last smoke		
Patches	• For those who smoke > 10 cigarettes/day **and** > 45 kg – 25 mg/16 hour patch or – 21 mg/24 hour patch	• Applied topically. Rotate site to minimise irritation • Nicotine is absorbed continuously through the skin to help reduce withdrawal symptoms • Subsidised on PBS prescription. Not available at the same time as other PBS subsidised smoking cessation therapies • If unsuccessful other medicines can be accessed in the same 12 month period • Some QUIT services offer free NRT • 24-hour patch useful for those who smoke after waking. Can cause vivid dreams
	• For those who smoke < 10 cigarette/day **or** < 45 kg **or** with cardiovascular disease – 14 mg/24 hour patch or – 10 mg/16 hour patch	

Table 4. Methods to quit smoking *(continued)* [1,3,4,13–17]

Gum	• First cigarette/vape < 30 mins. after waking – 4 mg (6 to 10/day)	• Nicotine is digested as gum is chewed or lozenge dissolves in the mouth • Taken at intervals to prevent or prior to when cravings are expected • Can be used prior to ceasing • If unsuccessful other PBS subsidised medicines can be accessed in the same 12 month period • **No more than 1 piece of gum/hour**
	• First cigarette/vape > 30 mins. after waking – 2 mg (8 to 12/day)	
Lozenge	• First cigarette/vape < 30 mins. after waking – 4 mg (1 every 1–2 hours)	
	• First cigarette/vape > 30 mins. after waking – 1.5 mg or 2 mg (1 every 1–2 hours)	

Adjuvants

Varenicline
- A partial agonist of nicotinic acetylcholine receptors that prevents pleasurable effects of smoking and reduces symptoms of nicotine withdrawal
- May cause mild-to-moderate transient nausea requiring dose reduction

- Begin titration as follows:
  – start at least 7 days prior to smoking cessation
  – 0.5 mg PO daily for 1–3 days then
  – 0.5 mg PO bd for the next 4–7 days then
  – from day 8 onwards 1 mg PO bd until the end of week 4
- Continue with 1 mg PO bd for a further eight weeks
- To reduce a relapse for those who successfully quit after 12 weeks continue with 1 mg PO bd for a final 12 weeks

Bupropion
- A norepinephrine/dopamine-reuptake inhibitor that makes smoking less desirable
- May cause insomnia, rarely seizures (0.1% risk) and psychotic or manic symptoms, mainly with an existing psychiatric illness
- Monitor BP if bupropion is used in combination with NRT

- Begin titration as follows:
  – start at least 7 days prior to smoking cessation
  – 150 mg PO daily for the first three days
  – then 150 mg PO bd (at least 8 hours between doses) for 7–9 weeks

Quitting abruptly (cold turkey)
- Quitting cold turkey is most effective with coaching and more effective than cutting down

Cutting down
- Reducing the number of cigarette/vapes smoked each day over time, to a point of cessation
- Some people decide to smoke less frequently throughout day until they go without smoking

Other
- Hypnotherapy (alone), acupuncture or switching to lower strength cigarette/vapes lack evidence to suggest they help to cease smoking
- Tobacco chemicals increase metabolism of certain medicines e.g. clozapine, theophylline, warfarin and caffeine. Consider adjusting dosages soon after smoking is stopped

3.3 Managing triggers [3,4,14-15]

- As months pass, cravings can occur when in triggering situations e.g. bad news, arguments, a relationship breakup, car accident
- Brainstorm with person how to avoid triggers by altering smoking habits tied to certain activities, places or people. See Table 5.

Table 5. Smoking triggers and avoidance tips [13–15]

Trigger	Tips
Anytime	• Chew sugar free gum, drink water
First thing in the morning	• Have a shower first thing, exercise
With tea or coffee	• Explore other drinks • Use a different cup or drink somewhere other than usual
Morning or afternoon tea	• Go for walk, sit with different people
After lunch or dinner	• Go for a walk
Straight after work	• Listen to music, exercise, cooking or shopping
Before dinner	• Play with children, talk with friends
With alcohol	• Avoid completely or drink water every second drink • Change drink or hold drink in smoking hand
Stress, bad news, argument	• Call a friend, go for a walk or play a game on the phone
When living with a smoker	• Make smokefree house rules e.g. smoke outside, smoker to not offer cigarette/vape
At night in front of the TV	• Do a jigsaw puzzle, use phone, go to bed
Just before bed	• Have a warm shower, read a book
When socialising	• Socialise with a non-smokers • Go to the bathroom, wash face, take some deep breaths • Step outside, go somewhere else or go home early • If offered cigarette/vape say “no thanks, I don’t smoke”

3.4 Managing withdrawal [3,4,14–15]

- For 2–4 weeks after quitting most people will experience withdrawal symptoms which over time will wane. See Table 6.
- Support person to:
  - **challenge invasive thoughts** e.g. “I really need just one last cigarette/vape”, “just one won’t hurt” or “I could get hit by a bus tomorrow”
  - **use self-talk** e.g. “I can do this”, “I’m a non-smoker now” or “I won’t let cigarettes/vapes rule my life”
  - **accept and avoid dwelling on thoughts of smoking** e.g. get back to work, begin that weekend chore etc.
  - **resist the temptation, the urge will pass**
  - **call the nominated coach or friend**

Table 6. Tips to overcome nicotine withdrawal symptoms [3,4,14–15]

Withdrawal symptom	Tips to overcome symptoms
Cravings	• Lasts a few mins. Resist and they get less frequent until they're just memories • Exercise
Restlessness, difficulty concentrating and insomnia	• Deep breathing and relaxation exercises • Smoking increases metabolism of caffeine. Caffeine toxicity is common after quitting. Consider reducing caffeine intake • Exercise • Hold a straw between fingers as a substitute
Mood changes e.g. depression, sadness, crying, anger, anxiety or irritability	• Normal in the early phases of nicotine withdrawal • Exercise, use a stress ball • After 6 months of quitting, overall altered mood improves
Cold symptoms, constipation, diarrhoea, stomach aches or nausea	• Vary diet with plenty of water • Refer to MO/NP for symptomatic relief

3.5 Managing weight gain[1,3,10,11]

- Weight gain is common in the months after quitting nicotine due to:
  - substitution of the hand to mouth action with food and snacks
  - slowing of nicotine free metabolism to a healthier normal rate
  - an increased appetite
  - improved taste and enjoyment of food
- Prepare the person for changes to appetite and eating habits by supporting Physical activity and sleep, page 34 and Diet and nutrition, page 29

3.6 Rewarding the ex-smoker [1,3,10,11]

- Support the person to:
  - embrace being a non-smoker living a smokefree life without smoking
  - celebrate early achievements being healthier, happier and wealthier
  - calculate the savings from quitting and reward themselves e.g. save for a holiday, buy something special, start a new hobby. See Resource 3.
- By rewarding the persistence and dedication to their health and future, the person can continue to motivate themselves

4. References

- All Chronic Conditions Manual references are available on the Office of Rural and Remote Health website

5. Resources

1. Queensland Government QUiT HQ or National Quitline
2. Quitline coaching
3. Calculate the cost of smoking and/or the savings from quitting
4. Pack/Years calculator

Social-emotional wellbeing

Recommendations

1. **Recognise the social-emotional impact of being diagnosed with a chronic condition**

- Surprise, anger, denial or disbelief about their diagnosis can diminish people's ability to accept or manage a chronic condition
- Reduce negative feelings by building a sound therapeutic relationship based on open communication and respect. See Engaging our patients, page 19
- Ensure patients are well informed about services, their rights, are involved in service provision and encouraged to involve significant others

2. **Recognise the social-emotional impact on marginalised and minority groups with a chronic condition**

- Recognise that a history of colonisation, racism, discrimination, criminalisation and vilification throughout society continues to impact some peoples health
- Be mindful of personal biases and their influence on a persons willingness to access health services. See Engaging our patients, page 19
- Build a sound therapeutic relationship based on open communication and respect to ensure optimal health outcomes for all people

1. The effect of a chronic condition diagnosis [1–4]

- It can be confronting and foreign being diagnosed with a chronic condition and needing to adapt to ongoing treatment and management. See Table 1.

Table 1. Challenges and reactions following a chronic condition diagnoses [4]

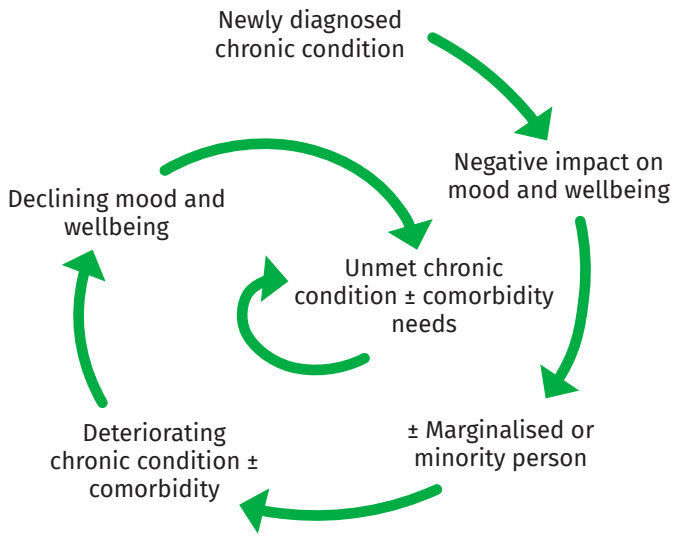
Challenges	Social-emotional reactions
• Facing mortality and understanding the seriousness of the condition • Anxiousness and awareness of minor aches, pains and sensations • Uncertainty of the condition, feeling powerless and imagining worst outcomes • Impact and adjustments to career and personal life • Long-term changes to lifestyle • Grieving the loss of personal health • Dealing with the responses of significant others • Adapting to new routines, appointments, follow-up schedules, expectations of the health department	• Forgetfulness, vagueness, feeling numb • Confusion, indecision about treatment options • Overwhelmed, worried, fearful • Mood swings, over-reacting, angry, irritable, intolerant, sadness, grief • Insomnia, tiredness, fatigue. See Physical activity and sleep, page 34 • Loss of appetite

- While initial feelings of sadness are expected, ongoing invasive symptoms of Depression, page 286 or Anxiety disorders, page 197 can be debilitating, affecting a persons ability to function physically, socially and emotionally
- 36% of people with chronic conditions have comorbid mental health issues
- Certain medicines used to treat chronic conditions can also trigger mood changes

- Children and adolescents with chronic conditions often face physical, cognitive, social and emotional development challenges, putting them at higher risk of developing a mental illness
- Parents and carers of children with chronic conditions often experience high levels of stress and anxiety

The potential cyclic impact on a person with a chronic condition to experience a mood disorder, predisposes them to further comorbidities. This is compounded if the person comes from a minority or marginalised group. See Figure 1.

Figure 1. Cyclic effect of a chronic condition on a persons wellbeing



2. Vulnerable, victimised, minority and marginalised groups [5,6]

- Those who have been or are still subject to racism, vilification or discrimination based on socioeconomic background, race, skin colour, sexual identity, beliefs, ethnicity, appearance, stereotyping or gender include:
  - migrants and refugees
  - religious groups
  - overweight people
  - living in rural and remote locations
  - old age
  - disability
  - socioeconomic disadvantaged

2.1 Aboriginal and Torres Strait Islander people [5–8]

- The source of health disparities for Aboriginal and Torres Strait Islander peoples from introduction of diseases, alcohol, tobacco, highly processed foods and inactivity, has led to the highest rates of chronic conditions in Australia
- Historical genocide and forced child separation from Aboriginal and Torres Strait Islander families, has led to:
  - erosion of identity and language
  - culture suppression

- physical and sexual abuse
- community disorganisation
- family dysfunction and dynamics
- domestic violence and abuse
- low self-esteem
- parenting difficulties
- child protection, justice system contact and incarceration
- social conflict

2.2 Women [7–10]

- The health of women is shaped by:
  - inequitable gendered distribution of power
  - characteristics of society's gender structure including:
    - economic deprivation i.e. wage gap
    - reduced subjective social status e.g. reduced labour force participation, prevalence of conservative religion, gender roles and expectations, marketing, media
    - psychosocial resources e.g. self-esteem, autonomy
    - exposure to harassment, violence and unsafe living or working conditions i.e. feminisation of poverty
    - gender biased health care, especially for black women
  - structural sexism:
    - gender based job segregation
    - under representation in powerful business, professional, media, and governmental positions
    - control of female body autonomy through a patriarchal legal system and sexual violence
- Subsequently, from childhood, women experience high rates of:
  - sexual exploitation from predators
  - violence and murder
  - mental health issues
  - perpetual vulnerability, from chronic abuse and violence
  - inadequate support services, shelters and mental health resources for at risk women
  - chronic conditions and lower self-rated health and physical functioning

2.3 Transgender and gender diverse people [11–16]

- Historically, in an era without anti-discrimination protections, trans and gender diverse people were subject to loss of employment and relationships, harassment, violence and murder
- As a result, the root of health inequalities today are:
  - cultural and social norms that preference and prioritize heterosexuality
  - minority stress associated with sexual orientation, gender identity and sex characteristics
  - victimisation, discrimination (individual and institutional) and stigma
- From childhood, these experiences affect the way health care is accessed for disproportionately high levels of chronic conditions
- Compared to heterosexual men and women, trans and gender diverse people

report highest rates of:

- hypertension, cancer, stroke and obesity
- mood disorders, suicide and self-harm
- musculoskeletal and gastrointestinal problems
- poor lifestyle behaviours

- The prevalence increases considerably for those with additional minority status
- See Resource 1. for clinician related information

2.4 Homeless people [16–20]

- Affecting people of all ages, including children, homeless people are among Australia's most socially and economically disadvantaged as a result of:
  - unemployment
  - family and domestic violence
  - mental health conditions
  - disability
  - substance use
  - chronic conditions
  - adverse early life childhood experiences and trauma
- Disproportionately represented by marginalised and minority groups, homelessness results in high rates of:
  - unemployment
  - psychiatric illness
  - substance use
  - musculoskeletal disorders
  - skin and foot problems
  - poor oral health
  - STIs and blood borne viruses
  - further chronic conditions
  - sexual exploitation
  - death and disability > 10 times general population
  - seeking routine medical care late, leading to acute intervention with poor outcomes
- Barriers to effective health care include:
  - competing needs and priorities i.e. food, water, shelter
  - poor health, disability
  - physical access i.e. cost, distance, ability
  - medication access, security and affordability
  - stigma e.g. hygiene
  - poor service co-ordination and communication

3. Supporting social-emotional wellbeing [1,3,4–10,12,14,–16,18–20]

- The privilege of being a clinical professional carries with it the responsibility to provide uncompromising care of all patients with trust, mutual respect, and understanding
- See Engaging our patients, page 19 to understand effective patient engagement including unconscious biases, listening, honest reflection, clinical power imbalance and gaining a clear understanding of barriers and goals
- **When applying social-emotional wellbeing support to patients (of all ages), health care professionals should:**
  - use culturally relevant language (including terms to describe transgender and gender diverse people) that upholds the principles of safety, dignity, and respect
  - ask and use a patients preferred name and pronouns
  - openly discuss and identify if a patient is from a marginalised or minority group

  - receive cultural-awareness training to provide culturally sensitive care
  - be mindful of social attitudes, laws, economic circumstances and lived experiences of people
  - assess for co-existing mental health or other psychosocial concerns, especially for children with a chronic condition
  - refer to a social worker and psychologist to provide tools and skills for self care
  - with consent, work with families, schools, and communities to promote acceptance of gender diverse expressions of behaviour and identities of young people
  - frequently assess patients and carers for Depression, page 286 or Anxiety disorders, page 197 by using a self or clinician-rated mood scale. See Resource 2.
  - acknowledge any concerns and reassure the patient that good adherence to appropriate treatment can improve the symptoms of their condition
  - offer parents behavioural or attachment based support as children with chronic conditions often exhibit higher emotional and behavioural disturbances
  - ensure optimal coordination of services and communication with those with limited resources or ability to maintain contact e.g. outreach services
- Provide relevant support Resources 1–4.

4. References

- All Chronic Conditions Manual references are available on the Office of Rural and Remote Health website

5. Resources

1. TransHUB information for clinicians and The Australian Professional Association for Trans Health
2. The DASS tool – the DASS scoring tool – The GAI-20 validated screening tool for older adults – The Hospital Anxiety and Depression Scale – The KICA-dep validated in Aboriginal and Torres Strait Islander communities available – The DMI-10 and K10 validated in people with chronic illnesses – The Geriatric Depression Scale–Short Form – The Edinburgh Postnatal Depression Scale
3. Beyondblue Coping with a serious health event: How to keep mentally well
4. Beyondblue: Chronic physical illness, anxiety and depression

PAGE LEFT INTENTIONALLY BLANK

Section 2.
Child health checks

Alcohol, tobacco and other drugs (child)

Information [1]

- Undertaken to identify risky substance taking behaviour, acknowledge a child's lifestyle choices and to provide preventative information to promote healthy adulthood outcomes

Child safety notification

- For a suspicion of harm or neglect refer to Child safety reporting, page 428

Health check recommendations

- **All children opportunistically ≥ 8 years old**

1. Procedure

- With parental consent and where appropriate, interview the child alone for honest answers. Reassure the child that any discussions are confidential
- Ask the alcohol, tobacco and other drugs (ATODs) questions and explore the answers in an age appropriate, nonjudgmental supportive manner. See Table 1.
- Provide brief intervention if required
- Determine if the child requires a referral and place on a follow-up and recall register

Table 1. ATODs questions for ≥ 8 years of age

Questions	Explore
Does the child smoke? (vapes, cigarettes, cannabis etc.) **Does the child drink alcohol?** **Does the child use drugs or other substances?**	• How often does the child smoke cigarettes or vapes/drink alcohol/take other drugs? Daily, weekly, sometimes? • How many? When? • Identify triggers e.g. when stressed? at school? with friends and peers? • Where do they get their cigarettes/vapes/alcohol/other drugs from? • Clarify type of cigarettes/vapes/alcohol/drugs? – nicotine strength, non-nicotine – beer, wine, UDLs, premix or spirits – inhalants, cannabis, meth etc. • Why do they smoke/drink/take drugs? • How does it make them feel?

2. Results

- The preferred response to the ATODs questions is 'no'
- If the child answers 'no', positively reinforce their healthy lifestyle choice
- If the child answers 'yes' provide brief intervention and offer a referral to the appropriate service
- Depending on the context of an older child's answers, consider the impacts on their mental and sexual health. See Sexual and reproductive health, page 39 and Social-emotional wellbeing (child), page 131

3. Brief intervention [1,2]

- Consider Engaging our patients, page 19 when communicating with children
- Avoid minimising harmful behaviour and the negative health effects on the body
- Use a matrix of motivational questions for children to critically think about the effects of taking ATODs. See Table 2.
- Encourage the child to talk to someone they feel safe with about using ATODs
- Offer the child:
  - help from the health service to cease ATODs
  - self help materials and cessation support programs for drug taking behaviours. See Resources 1–10.
- See Alcohol reduction, page 24 and Smoking cessation, page 48

Table 2. Motivational questions [1,2]

What are the good things about smoking, drinking alcohol or taking drugs?	What are the bad things about smoking, drinking alcohol or taking drugs?
• All my friends do it • Makes me look cool • Relaxes me • Gets me started • Tastes good • Keeps me awake • Gives me a boost	• Costs a lot of money • Makes my chest feel tight and short of breath • Can't run around, go diving or play sport because of breathlessness • Makes me cough • Gives me bad breath • Everyone asks for a smoke from me • Hate craving for a smoke • Causes cancer and damages the body • Trouble with family, school and police
What are the good things about STOPPING smoking, drinking alcohol or taking drugs?	**What are the bad things about STOPPING smoking, drinking alcohol or taking drugs?**
• Won't be breathless any more • Will have more money • Can save up for something special • Will feel stronger	• Friends may not want to play with me • Not look cool

4. Referral

- Refer any child ATODs issues to:
  - the MO/NP or
  - local Mental Health, Alcohol and Other Drugs (MHAODs) services or
  - Child safety reporting, page 428
- If assessment reveals a community wide problem refer to the Population Health Unit for community engagement
- If any harmful drug taking behaviours are identified, refer to an appropriate source. See Table 3.

Table 3. Referral options

Queensland Health
• Health worker, registered nurse, psychologist or social worker, school based youth health nurse • Child safety reporting, page 428 services • Child and Youth Mental Health Service • Alcohol, tobacco and other drugs
Other services
• Aboriginal and Torres Strait Islander Legal Service (Qld) Ltd • Legal Aid Queensland • Act for Kids • Queensland Indigenous Family Violence Legal Service • Queensland Aboriginal and Islander Health Council (QAIHC) • Elder, minister or pastor • Headspace, the national youth mental health foundation • Quitline 13 78 48 or Quit smoking • Royal Flying Doctor Service nurse or doctor • School Principal or student guidance officer • True Relationships & Reproductive Health (True) • Kids Helpline or phone 1800 55 1800 • Alcohol and Drug Information Service on 1800 177 833 all hours • Turning Point online counselling service

5. Follow-up

- Place the child on a recall register to monitor and support ATODs reduction as required
- Ensure all referrals are actioned
- Provide the child or parent with the next scheduled follow-up appointment

6. References

- All Chronic Conditions Manual references are available at the Office of Rural and Remote Health website

7. Resources

1. Queensland Government alcohol, tobacco and other drugs resources
2. Alcohol and Drug Information Service on 1800 177 833 all hours
3. Turning Point online counselling service
4. Quit HQ or Quit phone apps available for download from Apple iTunes and Google Play stores
5. National Alcohol Strategy 2019–2028
6. Smoking, nutrition, alcohol, physical activity (SNAP) A population health guide to behavioural risk factors in general practice 2nd edition
7. Australian Alcohol Guidelines revised
8. Dovetail: A range of fact sheets and professional development resources to support those who engage with young people affected by alcohol and other drugs
9. Blurred minds, an innovative, evidence-based alcohol and drug education program for Australian secondary schools
10. Cannabis Information and Support

Birth information

Information

- Recording the child's birth information allows clinicians to:
  - access a child's consistent personal health history as they grow and develop
  - ensure any postnatal appointments are actioned and followed up

Health check recommendations

- **All mothers of newborn babies during first postnatal visit**

1. Procedure

- Transfer all discharge summary and child's Personal Health Record (PHR) booklet (baby book) information to the child's medical record as per Table 1.
- Ensure any concerns, appointments or abnormalities are being actioned or followed-up. If not, refer and place the baby on a recall register

Table 1. Birth information and questions for 1–6 weeks of age

Information and questions	Explore
Discharge summary received	• If not received contact the referring or birth hospital
Birth weight	• See Body measurements (child), page 76
Birth length	
Birth head circumference	
Gestation	• < 37 weeks is premature
Apgar score 1 minute	• Scale from 1 (not responding) to 10 (alert/active) • Measured at 1 and 5 minutes after delivery
Apgar score 5 minute	
Method of delivery	• Normal vaginal birth (NVB), caesarean section (CS), forceps or vacuum extraction
Newborn hearing test attended	• Yes or no
Immunisation status current	• Hepatitis B, vitamin K and/or tuberculosis vaccines
Neonatal Screening test (NNST) attended	• If not performed at birth hospital ensure that the test is attended to in the community
Was the baby treated for jaundice?	• If "yes" monitor and provide brief intervention
Did the baby have problems with breathing or convulsions at birth?	• If "yes" ensure MO/NP has reviewed, parental concerns addressed and any follow-up is actioned
Was the baby ventilated	• If "yes" ensure MO/NP has reviewed, parental concerns addressed and any follow-up is actioned

2. Results

2.1 Gestation [1,2]

- For baby born premature (< 37 weeks), be mindful that:
  - the baby is at increased risk of vaccine preventable diseases
  - the baby's immunisation schedule will alter

- body measurements need to be corrected. See Body measurements (child), page 76

2.2 Method of delivery

- Caesarean wounds require monitoring particularly in those who are overweight or obese
- Forceps delivery may leave marks on the sides of the baby's head
- Vacuum extraction leaves a cone or large bump on the top of the baby's head

2.3 Hearing test

- Follow-up and action abnormal hearing test results, appointments or referrals
- For ongoing monitoring see Ears and hearing (child), page 94

2.4 Neonatal screening test (NNST)

- The birthing hospital will notify the parent of any abnormal test results and arrange follow-up appointments. **Always check**

2.5 Jaundice [3,4]

- As haemoglobin naturally breaks down, bilirubin is produced
- Bilirubin is removed via the placenta before birth and by the liver after birth
- In an immature liver, bilirubin levels can rise causing the skin and mucous membranes to turn yellow; jaundice
- Jaundice is common in newborns, usually 48 to 72 hours after birth
- Jaundice appears on the face and head first, then body, then finally the palms of hands and soles of feet
- Test by gently pressing a fingertip on the baby's nose or forehead. When the finger is lifted the skin should be white if normal, or yellow if jaundiced. See Table 2.
- Those with darker skin are harder to assess. Always refer if unsure
- If jaundice is not addressed, hearing problems or brain damage may result
- Filtered light in a naturally well lit room at home, not direct sunlight, and breastfeeding helps the baby to eliminate bilirubin and thus reduce jaundice
- Jaundice should disappear by 2 weeks of age

Table 2. Kramer's rule to estimating jaundice in babies [3,4]

Zone	Effect on child	Action
1	• Limited to head and neck	• Encourage 3 hourly breastfeeding and filtered light. Observe
2	• Upper trunk • Baby may be tired	
3	• Lower trunk and thighs • Baby will be tired and listless	• Continue to encourage 3rd hourly breastfeeding and filtered light • Refer urgently
4	• Over arms, legs and below knees • Baby will be tired and listless • At risk of cerebral palsy, deafness and brain damage	
5	• Hands and feet • Baby will be tired and listless • At risk of cerebral palsy, deafness and brain damage	

3. Brief intervention

- Provide the parent with anticipatory guidance for the coming months including:
  - breastfeeding or infant formula feeding
  - safe sleeping and SIDS
  - infant reflexes and vision and hearing information
  - nutritionally unsafe practices e.g. soft drinks, juice, coconut milk or tea in bottles
  - milestones in the coming months
- Praise successes

4. Referral

- Refer to MO/NP for:
  - abnormal hearing test results
  - abnormal neonatal screening test results
  - jaundice that is not resolving or continues to progress. See Table 2.
  - caesarean wounds that do not heal
- Ensure all referrals are actioned by parents

5. Follow-up

- Place the child on a recall register if required
- Ensure all referrals are actioned
- Provide the parent with details for the next scheduled follow-up appointment

6. References

- All Chronic Conditions Manual references are available at the Office of Rural and Remote Health website

Birth parent's history

Information

- The health and lifestyle behaviours of parents can determine attachment (bonding), quality of the parental relationship and future risk for chronic conditions

Child safety notification

- For a suspicion of harm or neglect see Child safety reporting, page 428

Health check recommendations

- **Parents of newborn babies during first postnatal visit between 1–6 weeks**

1. Procedure

- If both parents are present, engage each separately in confidence
- Ask parents the questions and explore further if required. See Table 1.
- Provide the parent with brief intervention
- Determine if the answers require a referral and place parent(s) and child on a follow-up and recall register

Table 1. Questions to ask parents at 1–6 weeks

Questions	Explore
Questions for both parents	
Was this pregnancy planned?	• How does mum or dad feel about this child? • If '**no**' assess for social-emotional wellbeing using a screening tool. See Resource 1.
Do you feel confident being a parent?	
Have you ever been exposed to family violence as a child or now?	• If '**yes**' perform the Safe Start psychosocial questionnaire. See Resource 2.
How many children are in your care?	• All own children? Any support? Finances?
Did you smoke anything, drink alcohol or use any drugs or prescription medicines before, during or after this pregnancy?	• Clarify type of cigarettes/vapes/alcohol/drugs? – nicotine strength, non-nicotine – beer, wine, UDLs, premix or spirits – inhalants, cannabis, meth, etc. – benzodiazepines, opioids, etc. • For how long? How much? How often?
Mother specific questions	
Did mum have diabetes during this pregnancy?	• Gestational, type 1 or 2? • Was the diabetes well managed? • Is diabetes well managed?
Did mum have a full STI screen?	• Were any STIs identified? What were the results? Was treatment given?

1.1 Asking the questions

- While asking the questions look for signs of attachment including:
  - holding, cuddling, being physically close and protective of baby
  - smiling, talking and eye contact with baby
- Poor attachment signs include:
  - physically distant from baby
  - holding baby turned facing away
  - leaving baby for long periods by themselves
  - talking negatively about baby
  - not responding to baby's cues i.e. crying
  - poor infant hygiene
  - not smiling, talking or eye contact with baby

2. Results

2.1 Questions for both parents [1–3]

- Asking these questions can help the clinician determine:
  - a parents preparedness for parenting
  - the level of stress they might be experiencing
  - the effect on a parents mental health
  - whether children are exposed to an unsafe and harmful environment e.g. violence, harmful toxins, intoxicated adults
- If concerns are identified perform the:
  - Edinburgh Postnatal Depression Scale (EPDS) or
  - Kimberley Mum's Mood Scale (KMMS). See Resource 1.
- If '**yes**' to the violence question perform the Safe Start psychosocial questionnaire. See Resource 2.

2.2 Mother specific questions

- Identifying if a mother had antenatal care, including screening for diabetes and STIs, allows clinicians to identify if the mother or child is at risk of chronic conditions

3. Brief intervention

3.1 Unplanned pregnancy [1–3]

- Be alert to a stressed or anxious first-time parent who will require extra reassurance
- Poor paternal Social-emotional wellbeing (adult), page 192 can impact on infant attachment
- Exhausted parents +/- support, should still show signs of attachment
- Childhood trauma is often a cause of poor parental attachment to their own children

Lacking signs of attachment indicates the parent requires urgent psychosocial support, **not that they are a "bad parent"**

3.2 Paternal or household smokers [4]

- Smoking during pregnancy is associated with increased risk of:
  - pre-term and low birth weight and small for gestational age
  - birth defects e.g. cleft lip, cleft palate
  - diabetes and other chronic conditions
- Smoking while breastfeeding or around baby is associated with:
  - ear and chest infections
  - slow lung growth
  - asthma
  - SIDS. See Environment, page 100
  - wheezing and coughing
- Do not expose a baby or child to cigarette smoke. All smokers should smoke outside
- Smoke particles persist on hands and clothes. Wash hands and change shirt after smoking before handling a baby
- See Smoking cessation, page 48 for support resources to quit

3.3 Alcohol, prescription medicines or other substance use [4]

- Intake during the perinatal period increases childhood risk of:
  - Developmental delay or disability (child), page 295
  - breathing difficulties and muscle weakness
  - fetal alcohol spectrum disorder (FASD) and neonatal withdrawals
  - impaired brain, heart and kidney development
  - death
  - poor feeding and sleep patterns
  - behavioural, learning and communication problems
- Can impair parental care associated with poor supervision and judgement e.g. dropping baby, rolling on baby when sleeping
- How much alcohol or other substances passes through breastmilk depends on:
  - strength and amount consumed
  - what food and amount consumed
  - mothers weight
  - how quick the substance is taken
- Reduce risk if planning to drink alcohol by arranging a dedicated carer for children and pre-expressing breastmilk to feed baby
- Alcohol is not 'stored' in breastmilk, just as it isn't 'stored' in blood
- Expressing and disposing of breastmilk **maintains supply**. It does not reduce the amount of alcohol in breastmilk
- Provide the **Feed safe app** (Resource 3.) to assess when adequate time has passed to resume breastfeeding after alcohol intake
- See Alcohol reduction, page 24

3.4 Multiple children in parent's care [1–3]

- Can alert clinicians to issues impacting the family including:
  - Social-emotional wellbeing (adult), page 192
  - financial stress
  - maternal mood
  - domestic violence
  - child neglect or abuse
  - overcrowding

3.5 Domestic violence

- See Domestic and family violence, page 161

3.6 Diabetes during pregnancy [5]

- Gestational diabetes mellitus (GDM) or diabetes during pregnancy is associated with babies that:
  - are large for gestational age
  - have low blood glucose levels
  - are jaundiced
  - are at higher risk of chronic conditions in adulthood
- Closely manage, monitor and follow-up women with Diabetes, page 304 or who developed GDM
- Support parents with Lifestyle modifications, page 18 postnatally

3.7 Antenatal sexually transmitted infection screen

- Sexually transmitted infections (STIs) can be passed from mother to baby
- If the mother did not have an antenatal STI screen:
  - perform a full STI screen according to the *Primary Clinical Care Manual* and treat any positive results
  - treat babies symptomatically and follow-up any positive maternal result

3.8 Parental confidence

- Although mum is usually identified as the primary caregiver of children, her primary caregiver is usually her partner
- Some fathers distance themselves from parenting young children and babies due to not knowing what to do, believing it is a mothers responsibility or from own trauma during childhood
- This can place stress on mothers, other family members and the relationship
- Provide and model simple skills with fathers e.g. holding or carrying baby, changing nappy
- Provide **all fathers** with SMS4dads details; a national SMS support service to help fathers connect with their baby and partner. See Resource 4.

3.9 Sex after pregnancy

- If comfortable and culturally appropriate, discuss safe Sexual and reproductive health, page 39 including:
  - communicating openly and frankly
  - due to hormonal changes, mothers might experience fatigue, vaginal dryness, pain and low sexual desire after the birth of a baby
  - It is safe to return to sexual practice after 4–6 weeks if both parents are ready, longer if mother had surgical interventions e.g. perineal repair, caesarean
  - take it slow, use lubricant for vaginal dryness, experiment, discuss alternatives to vaginal intercourse, such as massage, oral sex or mutual masturbation

4. Referral [1–8]

- For any Social-emotional wellbeing (adult), page 192 concerns (an EPDS score ≥ 13 for women or ≥ 10 for men, unplanned pregnancy, poor attachment) refer to:
  - child health nurse, MO/NP **or**
  - Early Intervention Specialist (psychologist or social worker) **or**
  - perinatal mental health services **and**
  - a home visiting child health program **and**
  - parenting program or group e.g. Circle Of Security©, Together in Mind **and**
  - local family support services
- For parents who smoke tobacco, consume alcohol or take prescription medicines or other substances of dependence refer to MHAODs. See Resource 5.
- For a mother who had GDM ensure:
  - postnatal oral glucose tolerance test (OGTT) at 6–8 weeks or HbA1c at 12 weeks, to screen for persistent Diabetes, page 304
  - lifelong screening every 3 years
  - patient is engaged with diabetes services

5. Follow-up

- Place the parent on a recall register if required
- Ensure all referrals are actioned
- Provide the parent with details for the next scheduled follow-up appointment

6. References

- All Chronic Conditions Manual references are available at the Office of Rural and Remote Health website

7. Resources

1. The Edinburgh Postnatal Depression Scale (EPDS) or Kimberley Mum's Mood Scale (KMMS)
2. Safe Start psychosocial questionnaire
3. The Feed Safe app informs parents who drink alcohol of safe levels or Australian Breastfeeding Association: Alcohol and breastfeeding
4. SMS4dads
5. Alcohol, tobacco and other drugs resources

Body measurements (child)

Information [1–3]

- Undertaken to monitor a child's growth and act early on identified risks associated with growth and development or chronic conditions
- The World Health Organisation (WHO) standard growth charts are used from birth to 5 years. The Centre for Disease Control (CDC) Standard Child Growth charts can be used from 2 years of age. See Resource 1.

Health check recommendations

- **All newborns at first 1–6 weeks postnatal visit**
- **Weight and length/height at each child health check to 5 years then:**
  - **opportunistically until 15 years**
  - **annually until 15 years for Aboriginal and Torres Strait Islander and rural and remote children**
- **Include a 9 month health check for Aboriginal and Torres Strait Islander and rural and remote children**
- **Head circumference at each child health check until 2 years**
- **Fontanelles palpated at 6, 12 and 18 months of age**
- **All children have body mass index (BMI) calculated once between 2½–3½ and 4–5 years, then opportunistically until 15 years of age**

1. Procedure [1]

- Perform the measurements as per Table 1.
- Plot the measurements on the appropriate chart e.g. length/height for age, weight for height or BMI for age. See Resource 1. and 2.
- Children born prematurely have their measurements plotted on a Fenton growth chart (Resource 3.) or according to their corrected age on a standard chart

Determining corrected age

Corrected age = baby's age in weeks since birth minus the number of weeks premature (40 minus infants gestational age in weeks).Example:
A 16 week old infant born at 32 weeks
= 16 - (40 - 32)
= 16 - 8
= 8 weeks of age (corrected)

- < 37 weeks gestation have their age corrected for 1 year
- < 32 weeks gestation have their age corrected for 2 years
- Refer child to an appropriate clinician if anomalies are identified
- Provide brief intervention
- If a child requires follow-up assessment place on a recall register
- Record all information in the child's Personal Health Record booklet

Table 1. Body measurements for children

Measurement	Procedure
Weight	• Weigh using baby scales or stand-on scales
Length or height	• Measure length with a measuring board or height with a stadiometer
Head circumference	• Measure using non-stretchable (paper) tape measure < 2 years
Fontanelle	• Palpate anterior and posterior fontanelles
BMI	• See 1.7 Calculating BMI

1.1 Weighing children < 2 years of age [1]

- Ensure the baby scales are accurate and regularly calibrated
- Bare weigh all babies to 2 years of age
- Zero the scales if required
- Record the weight to the nearest gram (g)

1.2 Weighing children > 2 years of age [1]

- Ensure the stand-on or chair scales are accurate and regularly calibrated
- Ensure the child removes all heavy clothing, shoes, jumpers etc.
- Zero scales if required
- Position the child on the centre of the scales so body weight is distributed evenly
- Record the weight to the nearest gram (g)

1.3 Measuring length < 2 years of age [1]

- For accuracy, this measurement requires 2 people; clinician and parent
- Flexible plastic measuring boards are less accurate, but good for home visiting
- Remove shoes and any excessive clothing
- Lay baby on their back (supine) on the measuring board
- Ask parent to hold the top of the baby's head (crown) against the headboard by placing their hands either side of the baby's head
- Inform parent that you will extend the baby's legs while they ensure the crown stays against the headboard
- Ensure the shoulders and buttocks are flat against the measuring board
- Extend both the baby's legs at the hips, keeping the back of the knees flat against the board by adding a slight amount of traction (pull)
- Slide the foot plate level with the base of both the baby's feet
- The length is recorded to the nearest millimetre (mm)

1.4 Measuring height > 2 years of age [1]

- Ensure the stadiometer is accurate
- Remove child's shoes
- Position the child with their head, back, buttocks and heels against the wall
- Ask them to stand straight with weight distributed evenly, heels together, looking forward and arms hanging by their sides
- Pull the measuring plate down to the top of their scalp
- Record the measurement to the nearest millimetre (mm)

1.5 Measuring head circumference < 2 years of age [1]

- Use a non-stretchable (paper) tape measure
- Position the child laying down, sitting up or in the parent's arms
- Remove any objects from the child's hair
- Identify the broadest section of the child's skull
- Place the measuring tape slightly above the eyebrows and pinna of the ears and around the occipital prominence at the back of the skull
- Measure to nearest millimetre (mm)
- Repeat measurement
- If the two measurements differ by more than 3 mm take a third measurement
- Record the average of the 2 largest measurements

1.6 Palpating fontanelles < 18 months of age [1]

- Sit or lay the child on examination table or have the parent hold them in their arms
- Gently palpate the anterior (front) and posterior (rear) fontanelles for openness, size, or whether bulging or depressed

1.7 Calculating BMI [1–3]

- Calculate BMI using the below calculation **OR** plot weight-to-height on an age appropriate BMI chart **OR** use an online calculator. See Resource 2.

BMI = weight in kilograms (kgs) ÷ height in metres squared (m^2)

- Calculating BMI in children > 10 years is important to identify risk of chronic conditions early

2. Results

2.1 Interpretation [1]

- View the current plotted result in relation to past plotted results
- For clearer interpretation plotted points should be joined to form a continuous line and note:
  - how the line tracks and moves in relation to the surrounding centile lines
  - multiple plotted points over a short time will produce a jagged line
  - few plotted points over a longer time produces long smoother lines
- A healthy child's measurement should generally, over time, follow a consistent curve in relation to surrounding centile lines

2.2 Weight gain for children to 12 months [1,2]

- A **general** guide for weight gain variation is:
  - an initial weight loss (up to 10% of the birth weight) after birth
  - weight gains by 4–6 days of age
  - return to birth weight by 2 weeks of age
  - gains of 150–200 g/week up to 3 months
  - from 3 months of age children should consistently gain weight over time,

tracking along their centile line

2.3 Head circumference and length [1]

- Head circumference should consistently increase over time, tracking along their centile line

2.4 Children's fontanelles [1]

- For infants < 6 months of age, the anterior fontanelle diameter generally does not exceed 4–5 cm, should feel soft and slightly depressed with some pulsation
- In a markedly depressed fontanelle the cranial bones around the edge of the fontanelle can be easily palpated and visualised. This indicates **dehydration**
- A bulging fontanelle feels tense with marked pulsations, and may indicate an episode of prolonged crying or **increased intracranial pressure from infection**
- The fontanelles should get progressively smaller beyond 6 months of age
- The anterior fontanelle closes by 18 months of age and posterior by 2 months

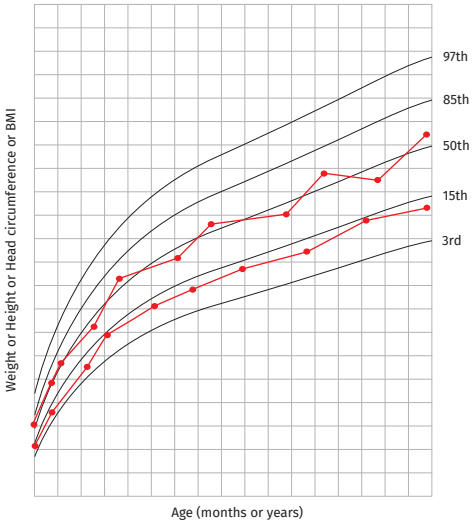
2.5 BMI for children [1–3]

- BMI categories for children are:
  - < 5th centile–underweight
  - 25th to < 84th centile–healthy weight
  - 85th to < 94th centile–overweight
  - > 95th centile–obese
- A child > 10 years of age with a BMI > 85th centile risks developing chronic conditions. See Special considerations (child), page 135

Figure 1. Growth chart interpretation

Normal ideal

- Measurements tracking generally consistently with centile **over time**
- Measurements that fluctuate toward and then away from, or over a centile is expected
- Measurements rarely track exactly along or parallel to a centile

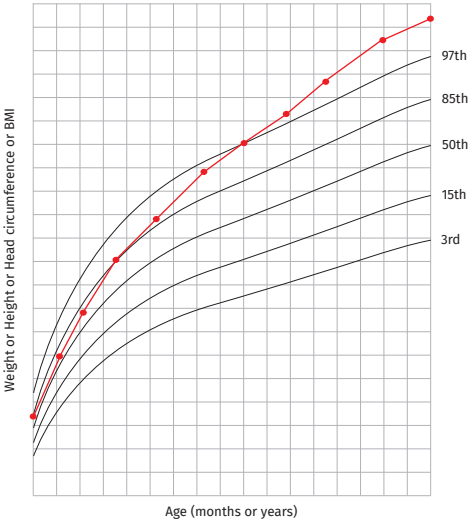


Abnormal

- Measurements track **upwards** across 2 centile lines
- This child is at risk of developing Overweight and obesity (child), page 372 and associated chronic conditions

Possible causes

- Diet high in saturated fats and sugars
- Formula fed
- Socioeconomic disadvantaged or living in rural and remote locations
- Adverse childhood experiences e.g. disability, bullying, violence, abuse
- Increased sedentary behaviour and reduced physical activity
- Poor sleep

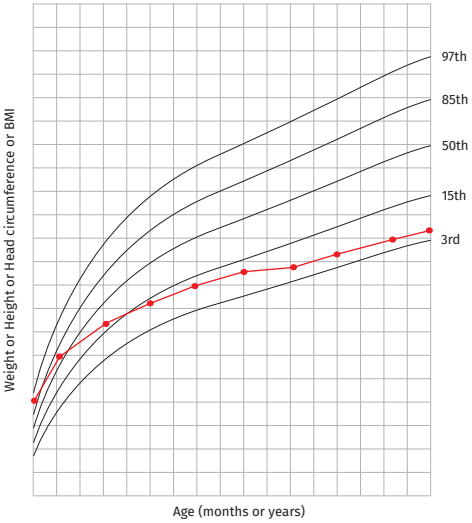


Abnormal

- Measurements track **downwards** across 2 centile lines
- This child is at risk of Poor growth (child), page 398

Possible causes

- Low weight, preterm, defects or disability at birth
- Ineffective feeding e.g. breast, formula, feeding aversion
- Aboriginal and Torres Strait Islander children or socioeconomic disadvantaged
- Dysfunctional family home e.g. DV
- Postnatal depression, anxiety or attachment issues



3. Brief intervention [1–3]

- Reassure parents that a child tracking along a centile is normal, even if the centile is low (i.e. 3rd %ile)
- Provide Diet and nutrition, page 29 and Physical activity and sleep, page 34 related Resources 4. to parents of children with low or high weight or BMI measurements
- Children > 10 years of age with a BMI > 85th centile will require frequent pathology investigations. See Special considerations (child), page 135. Discuss the association of an elevated BMI with:
  - adult obesity
  - hypertension
  - heart disease
  - type 2 diabetes
  - stroke
  - depression

4. Referral

- For a bulging or depressed fontanelle refer to the *Primary Clinical Care Manual*
- Refer to a MO/NP, child health nurse or dietitian for further investigations if the child's:
  - measurements indicate rapid growth or decline
  - different body measurements vary by 2 or more centiles when compared with one another e.g. weight on the 10th centile and length on the 75th centile
  - if a child's fontanelles are too wide, close early or remain open longer than expected for age
- If child's weight measurements have crossed 2 centiles in an upward trajectory or is > 97th centile manage as per Overweight and obesity (child), page 372
- If child's weight measurements have crossed 2 centiles in a downward trajectory manage as per Poor growth (child), page 398
- If a child > 10 years has a BMI > 85th centile manage as per Special considerations (child), page 135

5. Follow-up

- Place the child on a recall register to monitor growth if required
- Ensure all referrals are actioned
- Provide the parent with details for the next scheduled follow-up appointment

6. References

- All Chronic Conditions Manual references are available at the Office of Rural and Remote Health website

7. Resources

1. The WHO Child Growth Standards charts and the CDC standard growth charts
2. Online Healthy weight calculator for children and teenagers
3. Fenton Preterm Growth Charts
4. Child weight management resources for health professionals

Clinical measurements (child)

Information

- Undertaken to monitor, identify and address:
  - birth defects
  - effects from the environment, infections and family behaviours
  - chronic conditions

Health check recommendations

- **Femoral pulses in all children at each child health check to 6 months of age**
- **Breathing and heart sounds at each child health check to < 5 years of age**
- **Haemoglobin in all Aboriginal and Torres Strait Islander children at 6, 9 and 18 months of age, then at 10–15 years for girls**

1. Procedure

- Undertake the measurement and ask the questions as per Table 1.
- Be prepared to explore and clarify answers
- Identify measurements outside normal limits
- Provide brief intervention and resources
- If a child requires follow-up place on a recall register and refer as necessary

Table 1. Clinical measurements for children [1]

Assess	Explore
Breathing	• Measure the respiratory rate for 1 minute • Listen (auscultate) to the child's lung fields. Is breathing normal? noisy? coughing? wheeze? gurgles? laboured? breathless? • Is there a history of unresolved chest infections or coughing? • Does the child get breathless lying flat, at rest or walking? • Does the child wake breathless at night? • Is child exposed to irritants e.g. cigarette smoke, dust?
Femoral pulses	• Feel (palpate) for femoral pulses • Strong and equal (symmetrical both sides)?
Heart sounds	• Auscultate for heart sounds • Are the sounds normal? • Are there additional sounds? Describe
Haemoglobin	• Measure Hb level via a point-of-care capillary sample or venous blood

1.1 Breathing

- Observe the chest rise and fall. Record how many breaths are taken in 1 minute
- A suitably trained clinician will auscultate lung fields for breathing sounds

1.2 Femoral pulses

- Position the child on their back (supine) with their groin (inguinal) area exposed
- Flex the hips and gently abduct the legs
- Place the tips of 2 or 3 fingers along the inguinal ligament midway between the iliac crest and the pubic symphysis
- Palpate both left and right femoral pulses simultaneously to ensure they are symmetrical, strong and equal
- May take time to identify pulse while repositioning fingers
- If unable to palpate, refer to another clinician to assess

1.3 Heart sounds

- A suitably trained clinician will auscultate heart sounds. See Resource 1.

1.4 Haemoglobin (Hb)

- Refer to the haemoglobinometer or point-of-care product instructions for instrument use and calibration. Ensure cartridges are within date

2. Results

2.1 Breathing [1,2]

- Undertaken to identify exposure to environmental irritants (e.g. tobacco smoke, fires and dust), infections or other abnormalities to prevent future chronic chest conditions
- See Table 2. for respiratory rates for healthy children
- A child should not get breathless at rest, after short walks or waking at night
- Recovery from breathlessness should be quick after running or playing
- Breath sounds should be free of coughs, wheeze, crackles, rhonchi, rales etc

Table 2. Respiratory rates for healthy children [5]

Age	Breaths/minute
< 1 year	21–45
1–4 years	15–35
5–11 years	15–30
> 12 years	16–25

2.2 Femoral pulses

- Undertaken to assess arterial blood flow to the legs. Insufficient flow may indicate narrowing of the aorta (aortic coarctation); a birth defect
- Both pulses should be symmetrical, strong and equal; not weak, unequal or absent

2.3 Heart sounds [3]

- Undertaken to assess heart valve function and anatomical defects e.g. Rheumatic heart disease, page 406 especially in Aboriginal and Torres Strait Islander children
- Heart sounds should be free of murmurs, gallops, clicks or other abnormal sounds

2.4 Haemoglobin [4,5]

- Measured to identify anaemia associated with Developmental delay or disability (child), page 295 in:
  - Aboriginal and Torres Strait Islander children
  - those aged 6–30 months
  - low birth weight and premature infants
  - babies weaned to poor diets
  - adolescent girls at puberty due to menses
- See Table 3. for haemoglobin levels
- Clinical signs of low haemoglobin include:
  - pallor
  - heart murmurs
  - lethargy
  - failure to thrive
  - signs of cardiac failure
  - weakness
  - shortness of breath

Table 3. Haemoglobin levels to diagnose anaemia in children [4]

Age	Non-anaemia (Hb g/L)	Anaemia (Hb g/L)
6 months – 4 years	≥ 110	< 110
5 – 11 years	≥ 115	< 115
12 – 14 years	≥ 120	< 120

3. Brief intervention

3.1 Haemoglobin [4,5]

- Provide Diet and nutrition, page 29 information. Encourage foods that are iron rich or improve iron absorption:
  - breastfeeding exclusively to 6 months (or longer) or age appropriate infant formula
  - red bush meat, beef, lamb, liver or kidneys
  - chicken, fish, egg yolks
  - iron fortified baby cereal
  - citrus fruit or juice
  - apricots, prunes, green vegetables, spinach, silverbeet, broccoli
  - lentils, beans, grains, whole wheat, brown rice, nuts (children > 2 years)
- Provide information of foods that are **iron poor or inhibit iron absorption**:
  - cow's milk < 1 year of age
  - > 500ml/day of cow's, soy, coconut, goats or powdered milks > 1 years of age
  - tea, coffee, softdrinks
  - processed and high sugar foods or drinks

3.2 Breathing [1,2]

- Provide Table 4. information to parents about triggers for breathing problems

Table 4. Breathing problem triggers in children < 12 years of age [2]

Avoidable triggers	Unavoidable triggers
Always avoid	**Do not avoid**
• Cigarette smoke	• Exercise • Laughter
Avoid or reduce if possible	**Manage**
Allergens • Animals • Cockroaches • House dust mite • Moulds and pollens • Allergens at school/daycare **Airborne/environmental irritants** • Cold/dry air • Fuel combustion e.g. gas heaters • Home renovation materials • Household aerosols • Moulds and pollens • Irritants at school/daycare • Outdoor industrial and traffic pollution • Perfumes/scents/incense • Smoke e.g. tobacco, bushfire, camp fire • Thunderstorms in spring and early summer **Certain medicines** • Bee products e.g. pollen, propolis, royal jelly • Echinacea **Dietary triggers** • Food chemicals/additives (if person is intolerant) • Thermal effects e.g. cold drinks	**Respiratory tract infections** **Certain medicines (requires close specialist supervision)** • Aspirin and NSAIDs (when given for purpose of desensitisation) • Anticholinesterases and cholinergic agents • Beta blockers **Comorbid medical conditions** • Hay fever • Gastroesophageal reflux disease • Nasal polyposis • Obesity • Upper airway dysfunction **Physiological and psychological changes** • Extreme emotions • Hormonal changes e.g. menstrual cycle

Adapted with permission from the Australian Asthma Handbook, Version 2.2 © 2022 National Asthma Council Australia

4. Referral

- Refer to a dietitian and the *Primary Clinical Care Manual* for anaemia
- Refer to the MO/NP if:
  - unequal or absent femoral pulses
  - unusual heart sounds
  - noisy breathing, wheezing, breathlessness. See Asthma (children 1–12 years), page 215
  - persistent wet cough. See Bronchiectasis, page 233
  - clinical measurements that don't improve with brief intervention
- If uncertain, refer to a senior clinician

5. Follow-up

- Place the child on a recall register to monitor measurements if required
- Ensure all referrals are actioned
- Provide the parent with details for the next scheduled follow-up appointment

6. References

- All Chronic Conditions Manual references are available at the Office of Rural and Remote Health website

7. Resources

1. Cardiac Auscultation Reference Guide

Continence and elimination (child)

Information [1–4]

- Assessed to identify any physiological elimination problems (e.g. pelvic floor, nerve damage) and to reassure parents of normal continence patterns

Child safety notification

- For a suspicion of harm or neglect see Child safety reporting, page 428

Health check recommendations

- **All children from birth to 6 months, then 4 and 7 years of age**

1. Procedure

- Ask the parent or child the age appropriate questions. See Table 1.
- Children from birth to 6 months are checked for elimination issues. 4 and 7 year olds are checked for continence
- Children 6 months to 3 years are developing bladder and bowel control; incontinence is normal. Only assessed if parent has concerns
- Provide brief intervention and resources
- If a child requires follow-up place on a recall register and refer as necessary

Table 1. Continence questions for children [1–3]

Questions	Explore
Birth to < 6 months of age	
How many wet nappies does the baby have per day?	• Are the nappies full? • What colour is the urine? • Is the urine offensive to smell?
Is the parent worried about their baby's bowel movements?	• What is the consistency of the stools? • What colour? • How often?
4 and 7 years of age	
Is the child independent in toileting?	• Handwashing?
Is the child incontinent of urine or faeces?	• When? Where? • What happens before and after the incident?
Does the child wet the bed?	• When? • Daytime sleep also?

2. Results

- Be mindful that incontinence in children can also be attributed to urinary tract infections or sexual abuse
- If a continence issue is identified provide brief intervention and make a referral to an appropriate source

3. Brief intervention

3.1 Birth to < 6 months of age [1–4]

- Breastfed children will have one or more dirty nappies every 7–10 days
- Bottle-fed children should have a dirty nappy daily to every few days
- < 6 months of age babies have 5 wet nappies per day, 8 for cloth nappies:
  - the urine should be a pale straw colour
  - the smell should not be offensive
- Provide Resource 1. See Diet and nutrition, page 29

3.2 Children 6 months–3 years [1–4]

- Provide toilet training resources. See Resources 2–9.

3.3 Children 4 years and 7 years old [1–4]

- Main parental concerns are the social-emotional impacts on their child including embarrassment and low self esteem. Reassure parents:
  - **bedwetting or soiling is not a child's fault**
  - night time bed wetting (nocturnal enuresis) is common including:
    - 20% of 5 year olds; 1–3% of children will have faecal soiling
    - 10% of 10 year olds
    - 3% of 15–17 year olds
  - most incontinence is due to developmental, environmental or emotional factors; rarely anatomical defects
  - continence improves with age
  - daytime wetting is more common in girls, night time more common in boys
  - most children will gain daytime bladder control by 4 years old
- Provide support Resources 2–7.
- Provide Resource 7. to parents of children with disabilities not toileting independently

4. Referral [1–4]

- See Child safety reporting, page 428 for a toilet trained child who suddenly starts to soil or bedwet again
- If the child has painful urination, chronic diarrhoea, acute gastroenteritis, dehydration or constipation refer to the *Primary Clinical Care Manual*
- For children < 6 months of age, refer to the MO/NP or child health nurse if:
  - urine colour is dark yellow or the baby is having < 5 wet nappies a day despite encouraging more fluids or breastfeeding
  - faeces are foul smelling, watery, discoloured (white, green, or bloodstained) or hard
  - **any** parental concerns
- Refer children < 6 years of age with elimination or behaviour related continence concerns to:
  - a child health nurse **or**
  - local continence program

- Refer children < 6 years of age with a disability or autism where toilet training difficulties are anticipated to:
  - continence services (Resource 9.) **or**
  - the local child development unit **or** allied health service
- Refer children > 4 years of age to continence services if child:
  - suddenly starts bedwetting, who has normally been dry
  - is impacted socially, makes them upset or angry, or they want to become dry
  - > 4 years of age regularly wets during the day
  - > 4 years has regular faecal soiling (skid marks or larger amounts of faeces)
  - is successfully toilet trained then starts to soil again
- If the parent has any concerns refer to the MO/NP

5. Follow-up

- Place the child on a recall register to monitor continence if required
- Ensure all referrals are actioned
- Provide the parent with details for the next scheduled follow-up appointment

6. References

- All Chronic Conditions Manual references are available on the Office of Rural and Remote Health website

7. Resources

1. Australian Breastfeeding Association
2. The Continence Foundation of Australia
3. Australian Government Bladder and Bowel website
4. Bedwetting in children
5. Faecal soiling in children
6. Tips for bedwetting children who want to enjoy a sleep over
7. eric: The Children's Bowel and Bladder Charity
8. One Step at a Time - A parent's guide to toilet skills for children with disability
9. Child continence advisory service

Developmental milestones

Information [1–3]

- Assessing developmental milestones allows clinicians to identify factors (e.g. disability, malnourishment, chronic conditions) affecting a child to attain expected age-specific abilities, behaviours and skills

Note

- This health check is not a thorough developmental screen rather a check to identify a Developmental delay or disability (child), page 295 requiring a comprehensive review
- Refer any concerns early, do not wait

Health check recommendations

- **All children under the age of 5 years**
- **Within 3 months of a child < 5 years of age entering foster care**

1. Procedure

- Note the age appropriate developmental milestones in Table 1. and ascertain if the child has met milestones by:
  - asking the parent
  - observing the child's interaction with the parent and environment

Parents are the best historians as to how their child is developing. Listen to any concerns a parent has about their child

- If a child's age falls between two age brackets, assess against the previous age bracket e.g. a 15 month old would be checked against the 12 month old bracket
- Determine if the child requires a referral according to the criteria and place them on a follow-up and recall register

Table 1. Age related developmental milestones [1,2]

These are definitive milestone cut-offs. Not achieving a milestone for the child's age may indicate a delay in development and requires a comprehensive developmental screen, monitoring and follow-up. See 2. Results.

	6 months
Social-emotional	• Smiles or squeals in response to people
Communication	• Babbling i.e. oohh, aahh • Recognises their name when called
Fine motor and cognition	• Reaching for and holding toys (palmer grasp) • Explores objects with hands, eyes and mouth • Brings hands together at midline
Gross motor	• Supports head when held in sitting position • Holding head and shoulders up when on tummy

Table 1. Age related developmental milestones *(continued)* [1,2]

These are definitive milestone cut-offs. Not achieving a milestone for the child's age may indicate a delay in development and requires a comprehensive developmental screen, monitoring and follow-up. See 2. Results.

9 months	
Social-emotional	• Shares enjoyment with others using eye contact or facial expression
Communication	• Gesturing e.g. pointing, waving, showing • Using 2 part babble e.g. mama, dada, gaga
Fine motor and cognition	• Holds objects • Gives objects when requested • Moves toys from one hand to another
Gross motor	• Rolling • Sits without support • Moves e.g. creeping or crawling motion • Bears weight on legs well when held upright
12 months	
Social-emotional	• Notices someone new • Plays early turn based games e.g. peekaboo
Communication	• Babbles phrases that sound like talking • Responds to familiar words e.g. puppy, mummy
Fine motor and cognition	• Feeds self e.g. with finger foods or holding own cup • Able to pick up small items using index finger and thumb (pincer grip)
Gross motor	• Moves e.g. creeping, crawling motion, bottom shuffle • Pulled to stand independently and holds on for support
18 months	
Social-emotional	• Shows interest in playing and interacting with others
Communication	• Clear words spoken • Understands short requests e.g. where is the ball?
Fine motor and cognition	• Scribbles with a crayon • Attempts to stack blocks after demonstration
Gross motor	• Attempts to walk without support • Stands alone
2 years	
Social-emotional	• Uses toys for their purpose e.g. cuddles a teddy rather than bangs, drops or throws toys
Communication	• Learning new words • Puts words together e.g. push car
Fine motor and cognition	• Interested in self care skills e.g. feeding or dressing
Gross motor	• Walks independently • Able to walk up and down stairs holding on
3 years	
Social-emotional	• Interest in pretend play • Notices and understands feelings in themselves and others e.g. happy or sad

Table 1. Age related developmental milestones *(continued)* [1,2]

These are definitive milestone cut-offs. Not achieving a milestone for the child's age may indicate a delay in development and requires a comprehensive developmental screen, monitoring and follow-up. See 2. Results.

Communication	• Familiar people understand child's speech • Uses simple sentences e.g. big car go
Fine motor and cognition	• Matches similar coloured items • Snips with scissors • Imitates a person drawing a circle
Gross motor	• Runs, jumps, walks up and down stairs • Balances on one foot for few seconds
4 years	
Social-emotional	• Able and willing to play co-operatively
Communication	• Speech easy to understand • Able to follow 2 step directions e.g. get the ball and give it to me
Fine motor and cognition	• Opens bags and containers • Draws simple face, lines and circles
Gross motor	• Able to walk, run, climb, jump and use stairs confidently • Catches, throws and kicks a ball
5 years and over	
Any milestone deficits in children > 5 years old will be identified in the school setting	

2. Results [1–3]

A comprehensive developmental screen and urgent referral is required if at any age any of the following are present:

- Any parental concerns according to Parents' Evaluation of Developmental Status (PEDS) questionnaire. See child's PHR booklet
- Loose and floppy movements (low tone) or stiff and tense (high tone)
- Difference in strength, movement and tone between right and left sides of body
- Poor interaction with adults or other children
- Lack of response to sound or visual stimuli
- Significant loss of skills
- Not achieving indicated developmental milestones
- Lack of or limited eye contact
- Any other clinical concern

- Not achieving a milestone for the child's age may indicate a delay in development and requires a full developmental screen undertaken by a suitably trained clinician using:
  - the ASQ-TRAK (for Aboriginal and Torres Straight Islander children) **or** Ages and Stages Questionnaire (ASQ) (Resource 1.) **and**
  - the Social Attention and Communication Surveillance-Revised (SACS-R) to identify Autism Spectrum Disorder (ASD). See Resource 2.
- If all milestones achieved, provide brief intervention

3. Brief intervention [1–3]

- Child development refers to how a child acquires complex abilities, behaviours and skills as they get older. Children achieve these milestones at various ages
- Parents can promote development by providing their child with a stimulating interactive environment. See Resource 3.
- If a child is progressing well with their milestone development provide the parent with expected milestone progression information. See Resource 3.

4. Referral

- Provide the completed ASQ-TRAK, ASQ or SACS-R screening tool results to any referred to multidisciplinary team members
- Refer to Child Development Services
- For delays in the:
  - **social-emotional domain** refer to a speech pathologist, occupational therapist and child health nurse
  - **communication domain** refer to a speech pathologist and child health nurse. See Ears and hearing (child), page 94
  - **fine motor and cognition domain** refer to a physiotherapist, occupational therapist, psychologist and child health nurse
  - **gross motor domain** refer to a physiotherapist, occupational therapist and child health nurse
- Manage any delays as per Developmental delay or disability (child), page 295

5. Follow-up

- Place the child on a recall register to monitor development if required
- Ensure all referrals are actioned
- Provide the parent with details for the next scheduled follow-up appointment

6. References

- All Chronic Conditions Manual references are available at the Office of Rural and Remote Health website

7. Resources

1. The ASQ-TRAK (for Aboriginal and Torres Straight Islander children) or the Ages and Stages Questionnaire (ASQ)
2. The Social Attention and Communication Surveillance-Revised (SACS-R)
3. Positive parenting tips to encourage development and Raising Children Network

Ears and hearing (child)

Information [1–4]

- Undertaken to identify and monitor ear diseases that can cause long term hearing loss affecting a child's:
  - speech and language
  - ability to play and develop socially and emotionally
  - ability to learn and have positive educational outcomes
  - see Developmental milestones, page 90

Note

- Refer to the *Primary Clinical Care Manual* to manage acute ear presentations

Health check recommendations

- **All children have a hearing screen at birth**
- **All children if clinically indicated opportunistically**
- **Aboriginal and Torres Strait Islander children < 6 years at each scheduled health check or opportunistically**
- **Aboriginal and Torres Strait Islander children > 6 years annually**

1. Procedure

- Ask child or parent the age appropriate questions, explore any concerns and take the corresponding actions. See Table 1.
- Provide brief intervention
- Determine if the child requires a referral according to the criteria and place on a follow-up and recall register. See Flowchart 1.

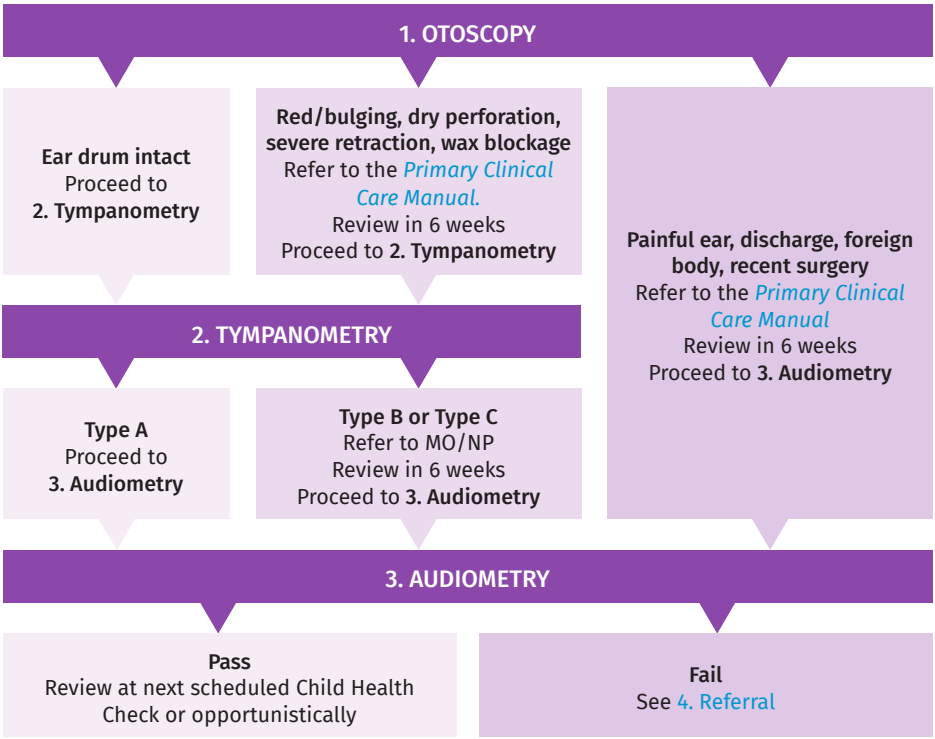
Table 1. Questions and actions for child ears and hearing

Age	Questions	Action
1–6 weeks	• Did the infant have a newborn hearing screen? • Is the baby startled by loud noises such as a loud clap? • Has the infant been free of ear infections or discharge?	• **If 'no'**, and/or if discharge is present or reported, see *Primary Clinical Care Manual*
2–12 months	• Does the parent think their child can hear them? • Does the child look or turn towards sound or voices? • Is the parent happy with their child's hearing? • Has the child been free of ear infections or discharge?	• **If 'no', AND** discharge is present or reported, see *Primary Clinical Care Manual* • Otherwise **if 'no'** then perform **otoscopy** plus if > 6 months **tympanometry**

Table 1. Questions and actions for child ears and hearing *(continued)*

18 months to 5 years	• As above **plus** • Is the parent happy with their child's speech and language?	• **If 'no' then as above plus** • < 3½ then 4. Referral • **Audiometry** if > 3½ years
All Aboriginal and Torres Strait Islander children and children living in rural and remote locations: • < 6 years at every scheduled check and opportunistically • > 6 years annually **All non-Aboriginal and Torres Strait Islander children** • aged 5 **and** 12		• **Otoscopy** plus if > 6 months **tympanometry plus** • **Audiometry** if > 3½ years
> 5 years	• Family history of genetic hearing loss? • History of frequent ear, nose and throat infections? • Speaks in loud or monotone voice? • Does not respond to name? • Watches others continuously? • Asks for statements to be repeated? • Withdraws in a group? • Has learning problems in class? • Has disruptive and impulsive behaviour? • Teacher reports hearing difficulty? • Parent reports hearing difficulty?	• **If 'yes'** to any questions then perform **otoscopy, tympanometry and audiometry**

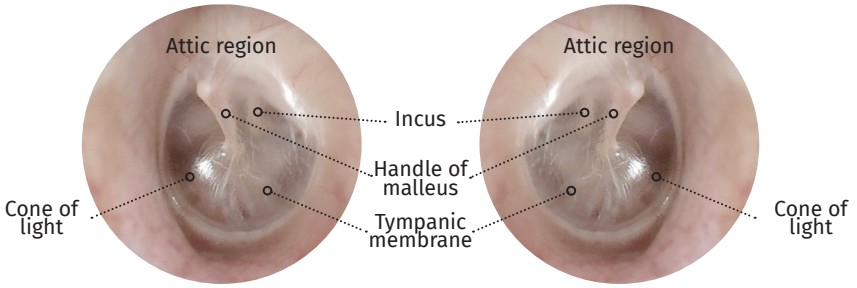
Flowchart 1. Hearing health tests and referral procedure



1.1 Performing otoscopy [1–3]

- Otoscopy is the visual examination of the ear canal and ear drum. See Figure 1.
- If there is pain or notable discharge from the ear(s) do not proceed. Refer to the *Primary Clinical Care Manual*
- Observe the bone behind the ear (mastoid) and the area under the ear for infection, swelling or tenderness
- Check the pinna for size, shape, colour or lesions
- Observe the ear canal for:
  - discharge
  - redness/swelling
  - fungal infections
  - lumps or bony growths
  - foreign bodies (excluding grommets)
  - wax
  - fluid
- Inspect the eardrum (tympanic membrane) for:
  - colour:
    - transparent and shiny is normal
    - dull or opaque represents fluid behind the eardrum
  - cone of light (reflection):
    - right ear at 5 o'clock and left ear at 7 o'clock
    - reflections elsewhere indicates bulging
  - the handle of the malleus
  - perforations
  - abnormalities of the attic region e.g. perforation, mass, growth
- Repeat procedure for the other ear

Figure 1. Visual representation of the eardrums



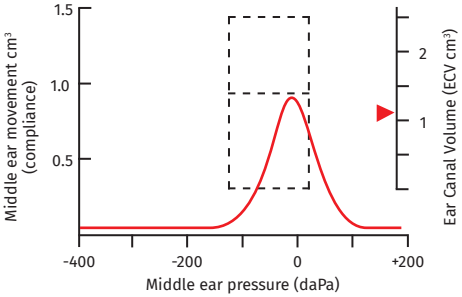
1.2 Performing tympanometry [1–3]

- Tympanometry is a test of middle ear function and measures:
  - ear canal volume (ECV)
  - middle ear pressure (daPa)
  - middle ear compliance or movement

- See Resource 1. for further tympanometry support
- If there is discharge from the ear(s) do not proceed. Refer to the *Primary Clinical Care Manual*
- A "Leak" or "Blockage" error can occur for many reasons:
  - clogged probe tip
  - probe tip too large or small
  - head movements or swallowing
  - probe tip against the ear canal wall
  - debris, foreign body or wax in ear canal
- To rectify try:
  - a different sized probe tip
  - cleaning probe tip
  - reposition the probe tip in the ear canal

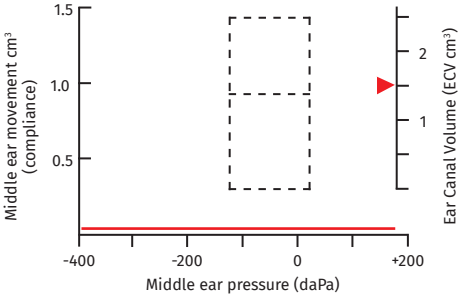
Figure 2. Tympanometry traces [1–4]

Type A Normal
- A peak within the normative values box
- Normal ear canal volume (ECV) = 0.3 to 1.6 cm^3
- Normal middle ear movement (compliance) = 0.2 to 1.5 cm^3
- Normal middle ear pressure = +50 to -100 daPa



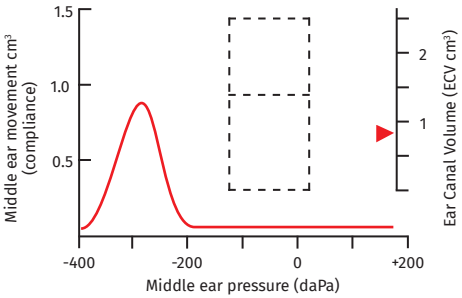
Type B Fail
- A flat line or no peak indicates no middle ear movement or pressure
- It is important to observe the ear canal volume when interpreting Type B findings

Possible causes
- Otitis media with effusion (middle ear fluid)
- Eardrum perforation (hole) or grommet indicated by large ear canal volume
- Ear canal blockage indicated by small ear canal volume
- Wax



Type C Fail
- A peak to the left of the normative values box
- Normal ear canal volume
- Normal middle ear movement
- Negative middle ear pressure

Possible causes
- Eustachian tube not functioning properly



1.3 Performing audiometry [1–4]

- Audiometry measures the ability of the ear to:
  - detect the pitch of a sound as hertz (Hz)
  - detect the loudness of a sound as decibels (dB)
- For younger children:
  - place the headphones on the desk (not child) and set to 4000 Hz and 90 dB
  - present the tone and encourage them to clap, press button etc. if sound heard
  - praise their response
  - change frequency to ensure they respond when the sound is slightly different
  - once they are able to respond reliably, proceed with testing
  - child '**fails**' if they do not respond as expected
- Children will look for visual cues for when to respond. Ensure:
  - child is positioned so they can't see your hands, face or the audiometer
  - tones are presented at irregular intervals to avoid child anticipating the sound
- Place headphones on the child. Test one ear at a time
- Set hertz (Hz) dial to 4000 Hz and decibels (dB) to 50 dB. Test
- The child '**fails**' if they do not indicate they hear a sound
- If the child indicates they hear the sound then reduce to 35 dB and repeat
- If the child indicates they hear the sound then reduce to 25 dB and repeat
- Repeat these steps until the child no longer responds, then increase by 5 dB increments until they do
- Record the result that the child responds to twice at the lowest perceived dB
- Repeat for the other ear
- Repeat the procedure for both ears at 2000 Hz and 1000 Hz
- To '**pass**', the child needs to respond twice to 25 dB at 1000, 2000, and 4000 Hz

2. Results

- All children should have
  - clean ears, free of pain, discharge or infection
  - pass all tests and hear clearly

3. Brief intervention [1–5]

- Aboriginal and Torres Strait Islander children:
  - experience the highest rates of middle ear disease and hearing loss in Australia
  - develop ear issues earlier and more frequently and severely than the general population
- Educate parents that unresolved hearing loss creates challenges for children later in life, including:
  - school completion rates
  - health literacy levels
  - vocational and job prospects
  - social isolation
  - mental health issues
- Discussion points:

  - regular nose blowing
  - hand and face washing
  - avoid prop bottle feeding
  - avoid bottle feeding a child to sleep
  - avoid leaving bottles in a child's cot
  - avoid subjecting a child to smoke from cigarettes or camp fires
  - only swim in running water or swimming pools
- Provide Resource 2.
  - maintain healthy Diet and nutrition, page 29
  - avoid putting anything in child's ears (including cotton buds)
  - there are often no signs or symptoms of hearing loss
  - if concerned, always present to the health centre
  - avoid loud noises (e.g. headphones)

4. Referral

- If the child has ear pain or discharge, refer to the *Primary Clinical Care Manual*
- Perform the PLUM and HATS screening questionnaires (Resource 3.) and email referral to Hearing Australia (Resource 4.) if:
  - < 3½ and parent answers 'no' to screening questions
  - the clinician is unable to undertake any hearing testing e.g. child too young, clinician is not experienced
  - the child '**fails**' audiometry or tympanometry for a second time after a 6 week review
- If clinician or the parent has any immediate concerns about a child's hearing, refer to the MO/NP and speech pathologist

5. Follow-up

- Review as per Flowchart 1.
- Place the child on a recall register to monitor Developmental milestones, page 90, speech, hearing or ear disease if required
- Ensure all referrals are actioned
- Provide the parent with details for the next scheduled follow-up appointment

6. References

- All Chronic Conditions Manual references are available on the Office of Rural and Remote Health website

7. Resources

1. Hearing Australia's Tympanometry module for primary health providers
2. Australian Governments Care for Kids Ears
3. PLUM & HATS listening and talking skills
4. Hearing Australia

Environment

Information

- Undertaken to identify preventable environmental hazards that influence child health, behaviours and lifelong illnesses

Child safety

- For a suspicion of harm or neglect see Child safety reporting, page 428
- For child exposed to domestic violence see Social-emotional wellbeing (child), page 131

Health check recommendations

- **All children < 15 years of age opportunistically**
- **All Aboriginal and Torres Strait Islander children at each scheduled health check**

1. Procedure

- Ask and explore the age appropriate questions as per Table 1.
- Provide brief intervention as required
- Determine if the child requires a referral and place them on a follow-up and recall register

Table 1. Age related environment questions

Age	Question	Explore
< 18 months	**Where does the infant sleep?**	• If permitted view cot or sleeping area • Assess for safety
	Is the infant placed on their back to sleep?	• If not, are they placed on side or front?
All children	**Is the child exposed to cigarette/vape smoke?**	• Are smokers living with the child? • How many? • Where do smokers smoke?
	How many people live in the house?	• The number of bedrooms? • Bedding arrangements • Observe for safety and hygiene concerns
	Any observed safety concerns?	• Car seats • Open bodies of water e.g. dams, blow up pools • Unrestrained animals • Ungated stairs, balconies etc • Unsecured poisons, chemicals, medicines

2. Results

2.1 Exposure to cigarette/vape smoke [1–3]

- Babies and children should not be exposed to **second-hand** cigarette/vape smoke in the house or a confined space such as a car

- Babies and children should not be exposed to **third-hand** cigarette/vape smoke i.e. cigarette/vape smoke that is adsorbed by walls, furniture, clothes, toys etc. and lasting for hours

2.2 Overcrowding [2,4]

- Observed assessment of sleeping arrangements and safe hygienic conditions
- Aboriginal and Torres Strait Islander children are 5 times more likely to live in overcrowded housing

2.3 Sudden unexpected deaths in infancy (SUDI) and sudden infant death syndrome (SIDS) [2,5,6]

- Children should have their own cot or bed according to safe sleeping practices. See 3.3 SUDI, SIDS and a safe sleeping environment

2.4 Injury prevention [2]

- Observed assessment of the home, car and yard for safety concerns

3. Brief intervention

3.1 Exposure to cigarette/vape smoke [1–3]

- Children exposed to environmental hazards especially second-hand smoke experience higher rates of:
  - respiratory infections
  - middle ear infections
  - meningococcal infections
  - Asthma (children 1–12 years), page 215
  - sudden infant death syndrome
- Tobacco/vape toxins are absorbed by clothes and toys and continue to be released into the air months after a cigarette/vape is smoked
- Smokers should smoke outside and away from children. Consider wearing a smoking shirt, or change clothes after smoking, if likely to be around children
- Dispose of cigarette butts in bins to avoid children being burnt, choking on or eating discarded butts

3.2 Overcrowding [2,4]

- Puts stress on kitchens, bathrooms, laundries and sewerage systems increasing risks of:
  - poor personal hygiene
  - family relationship breakdown
  - domestic violence
  - sexual abuse
- The effects of unhygienic living conditions on Skin (child), page 127 conditions can lead to debilitating lifelong chronic conditions
- Discuss principles of hygiene with the parent and child including:
  - washing hands after toileting, changing nappies and blowing or wiping nose
  - washing hands before and after preparing and eating food
  - coughing and sneezing into arm rather than hands
  - brushing teeth at least twice daily
  - not sharing toothbrushes and razors
  - regularly washing bed linen and clothes
  - regularly removing rubbish from kitchen and living area

- keeping pets away from living areas, especially where food is prepared

3.3 SUDI, SIDS and a safe sleeping environment [1,2,5,6]

- Provide safe sleeping information and strategies. See Resource 1.
- To **reduce the risk of SIDS** in babies:
  - sleep baby on the back from birth
  - sleep baby with head and face uncovered
  - provide baby with their own cot (or bassinet), mattress, bedding in the same room as the parents for the first 6–12 months rather than bed sharing
  - encourage breastfeeding
- To provide a **safe sleeping environment** for an infant:
  - put baby's feet at the bottom end of the cot
  - cot should meet Australian standards. Check for standards label
  - use a firm, clean mattress that fits snug in the cot
  - tuck bedding in securely
  - keep quilts, doonas, pillows, bumpers, sheepskins, toys etc. out of the cot
- The risk of **SIDS significantly increases** when:
  - infant sleeps on stomach or side
  - soft surfaces with loose bedding
  - room is hot with excess clothing and bedding
  - sharing a bed, especially with smokers
  - infant is exposed to tobacco/vape smoke
  - infant is not immunised
  - bouncinette, prams and strollers are used as sleeping areas

3.4 Injury prevention [2]

- Falls, drowning, poisoning, road safety incidents, burns and scalds are amongst the leading causes of preventable hospital admissions, deaths and disability for children. Provide Resources 2–3.
- Encourage the parent to keep an updated list of emergency numbers near the telephone or in their mobile phones including:
  - Poisons Information Centre (131126)
  - local health centre
  - child health nurse
  - all-night pharmacist (if available)
  - trusted neighbours
  - relatives
- Provide injury prevention and safety awareness strategies. See Table 2.

Table 2. Injury prevention and safety awareness strategies [4,7]

Risk	Prevention strategy
Supervision	• Small children require constant surveillance
Fire	• Turn pot handles inwards. Teach stove top and oven safety • Remove lighters and matches • Supervise around camp fires • Extinguish cigarette butts when disposing

Table 2. Injury prevention and safety awareness strategies *(continued)* [4,7]

Risk	Prevention strategy
Water	• Fence swimming pools or dams • Drain blow-up pools, nappy buckets, baths and all containers after use • monitor access to toilets
Suffocation and strangulation	• Stow plastic bags and blind cords out of reach
Falls from height	• Close windows • Safety gate stairs and balconies
Kitchen	• Child lock cutlery and utensil drawers, plates and glassware cupboards • Consider safety gates to any unsafe areas
Toys	• Monitor toys for small parts choking hazards or where fingers can be jammed
Choking hazards	• Button batteries, grapes, nuts, hotdogs or any small firm foods
Car	• Australian standards car seats, restraints and seatbelts
Sun protection	• Do not expose child < 12 months to direct sun. Protect skin with clothing, shade and hats • Sunscreen on infants < 6 months age is not recommended • From 6 months, apply sunscreen to face, ears and hands if these areas cannot be protected with clothing or wraps
Lounge room	• Monitor large televisions for stability on furniture • Stow electrical cords and cables • Child lock furniture drawers • Furniture with sharp edges at head height
Poisoning	• Child lock poisons, cleaning and gardening products and medicines

4. Referral

- For any identified overcrowding or housing issues, advocate and refer the patient or family to:
  - social worker
  - the Department of Housing and Public Works. See Resource 4.
  - private real estate institutes
  - housing co-ops
  - regional community housing providers
  - councils
- Consider Child safety reporting, page 428 for any child safety concerns

5. Follow-up

- Place the child on a recall register to monitor development if required
- Ensure all referrals are actioned
- Provide the parent with details for the next scheduled follow-up appointment

6. References

- All Chronic Conditions Manual references are available at the Office of Rural and Remote Health website

7. Resources

1. Red Nose safe sleeping resources
2. Making your child safety at home resources available from: Raising Children and Queensland Health
3. Cancer Council sun safe resources
4. The Department of Housing and Public Works

Eyes and vision (child)

Information [1–4]

- Performed to identify eye and visual problems that can affect a child's ability to learn, play and confidently communicate with others

Health check recommendations

- **All children < 15 years of age opportunistically**
- **All Aboriginal and Torres Strait Islander children < 15 years at each health check**

1. Procedure

- Ask the parent or child the age appropriate questions according to Table 1.
- Determine if the child requires any visual assessments
- Determine if the child requires a referral and place on a follow-up and recall register

Table 1. Age appropriate questions and procedures for child eyes and vision

Age	Procedure
1–6 weeks, 2 and 4 months	• Eye appearance
1–6 weeks and 2–18 months	• Red reflex
0–2 years	• Fixates and follows an object
6 weeks–2 years	• Corneal light reflex
3–5 years, 6 and 12 years	• Cover test • Visual acuity • Red reflex • Fixates and follows an object
All children 5–15 years	
Does child have any trouble seeing things?	• If **'yes'** to any questions then perform a – **cover test** and – **visual acuity test**
Does child have difficulty seeing what the teacher writes on the board?	
Does child have trouble seeing the television screen?	
Does child get a headache if reading for > 10 minutes?	
Has child ever had an eye injury?	
Does the parent or teacher report problems with vision, eye appearance or learning?	
Is there a family history of childhood eye problems?	
Are there any current medical problems?	

1.1 Assessing eye appearance [2,3]

- Sit child on chair. For security and compliance infants can sit on parent's lap
- Ask the parent to hold the child's forehead if needed

- With an ophthalmoscope visualise external and anterior eye for:
  - symmetry of pupils
  - abnormal movements (nystagmus)
  - lift each eyelid with thumb and check for:
    - scarring
    - styes
    - cysts
    - droopy eyelids (ptosis)
  - conjunctiva and cornea for redness, swelling, discharge (conjunctivitis), scarring or membranes (pterygium)
  - sclera for jaundice (Hepatitis B, page 337), bloodshot or haemorrhage (trauma)

1.2 Assessing visual acuity (VA) [2,3]

- Test children while wearing their prescribed glasses or contact lenses
- Place a Snellen eye chart (or Tumbling E eye chart for younger children) 6 metres away in a well lit area at eye level
- Note the numbers next to each line on the chart:
  - the first number represents metres the child is standing from the chart i.e. 6
  - the second number on each successive line increases, mimicking increased distance in metres, with smaller lettering e.g. 9m, 12m, 18m, 24m, 36m or 60m
- Tell the child to state the letter you point to, **or** if using the Tumbling E chart, show how 3 fingers makes an 'E' and to hold these fingers left, right, up or down to indicate what they see
- Cover one of their eye's with an occluder and begin test
- Start at the top line and point clearly to each letter
- Allow the child adequate time to respond

Observe behaviours that indicate a child is having difficulty seeing e.g. leaning forward, frowning, blinking or squinting

- Progress along each line until the child can no longer identify letters
- If they get > 3 letters incorrect on a line, stop, go up a line and repeat
- Allow 2 attempts
- Record the last line the child can read without making any mistakes
- Cover the other eye and repeat process

1.3 Fixates and follows an object assessment [2,3]

- Hold a pen or toy 30 cm away and slowly move it up, down, left and right in an 'H' pattern
- Encourage child to look at the object without moving their head
- Note the child's eyes track the object

1.4 Assessing corneal light reflex [2,3]

- Generally the child can be looking anywhere for this test
- Shine a pencil torch between the child's eyes at a distance of 30 cm
- Observe the light reflecting in both eyes

1.5 Assessing red reflex [2,3]

- Ask the child to look at a distant point e.g. your ear, the wall
- Direct the ophthalmoscope light at the pupil from 30 cm away
- Look through the scope slowly moving back and forth, up and down until you see a red reflex (the blood at the rear of the retina)

1.6 Performing cover test [2,3]

- Performed to identify a squint (strabismus) or lazy eye (amblyopia)
- Ask the child to focus on a distant target (picture) without moving their eyes still
- Cover their right eye with an occluder and observe the left eye for movement
- Slowly and smoothly remove the card and observe the right eye
- Repeat these steps for the left eye
- If needed repeat until satisfied that the test has been performed adequately
- Movements of the cover should be slow and smooth so the eye has time to fixate
- Repeat all of the above steps for a near target e.g. your ear or a pencil

2. Results

2.1 Eye appearance results

- The eyes should appear:
  - conjunctiva white clear, clean, free of redness, swelling and pus
  - pupils symmetrical
  - eye movements equal and intentional

2.2 Visual acuity results [1]

- Normal VA is 6/9 for < 7 years olds and 6/6 for > 7 year olds

2.3 Fixates and follows an object results

- Both eyes follow the target easily and smoothly
- Refer if eyes do not follow in unison or movements are jerky, uneven, child uses head movements or eyes cross

2.4 Corneal light reflex results

- A reflection in the same place on both corneas means each eye is fixing on an object equally; reflections in different places of the corneas indicates the opposite
- This test is a preliminary step to the cover test which will tell you which eye is affected

2.5 Red reflex results

- No red reflex can indicate an obstruction between the pupil and retina e.g. a tumour, congenital cataract or haemorrhage

2.6 Cover test results

- A squint is indicated if eye movement is noted to:
  - establish fixation on an abject while it is being covered or
  - re-establish fixation on an object while slowly being uncovered

3. Brief intervention

- Provide parents with Resources 1–5. as required

4. Referral [1–4]

- Refer to the *Primary Clinical Care Manual* if signs of conjunctivitis:
  - itchy or irritated ± red eye(s)
  - watery, pus or mucous discharge
  - crusting of eyelids or eye lashes
- Refer to the MO/NP, ophthalmologist or optometrist if:
  - child's visual acuity in one or both eyes is:
    - > 6/9 for < 7 year olds (i.e. 6/12, 6/18, etc)
    - > 6/6 for > 7 year olds (i.e. 6/9, 6/12, 6/18, etc)
  - abnormal eye appearance or eye movement
  - reported blurriness
  - squinting to see
  - failure of a child to fixate or follow an object
  - uneven eye movement
  - no red reflex
  - eye movements during cover test
  - other concerns

5. Follow-up

- Place the child on a recall register if required
- Ensure all referrals are actioned
- Provide the parent with details for the next scheduled follow-up appointment

6. References

- All Chronic Conditions Manual references are available on the Office of Rural and Remote Health website

7. Resources

1. Queensland Health Eye Health
2. Health Direct Eye Health
3. AIHW: Eye health in Aboriginal and Torres Strait Islander people
4. Vision Australia
5. Indigenous Eye Health Unit

General appearance

Information [1]

- A head to toe physical observation is undertaken to identify physical abnormalities, injuries or Skin (child), page 127 issues

Child safety notification [2]

- See Child safety reporting, page 428 where general appearance provides a suspicion of abuse, harm or neglect. Consider:
  - bruises on any part of a child's body, especially over soft tissue areas (normal bruises in children commonly occur over bony areas)
  - human bite marks
  - circular cigarette burns
  - lighter burns (might resemble a smiley face)
  - scalds from immersion in hot water such as feet, hands or buttocks
  - fractures of any type
  - grazes or trauma to genitalia

Health check recommendations

- **Head and face, limbs and joints for all children < 15 years of age**
- **Genitalia up to 18 months of age for all children**

1. Procedure

- Undertake a head to toe physical observation as per Table 1.
- Provide brief intervention if any issues are identified
- Determine if the child requires a referral and place on a follow-up and recall register

Table 1. General appearance observations

Area for observation	Action
Birth–18 months	
Genitalia	• With parent present and with consent, observe and feel
Birth–15 years of age	
Head, neck and face	• Observe and feel
Limbs and joints	• Observe and feel

1.1 Head, neck and face [1]

- Observe and feel child's head for general appearance e.g. small (microcephaly), flattened back of head (plagiocephaly), asymmetry, sores, scars or injuries
- Check head and neck for range of motion and if head tilts to one side while the chin tilts to the other (torticollis)

- Child's face for general appearance:
  - thin upper lip
  - flattened groove between the upper lip and nose (philtrum)
  - nose for alignment and structure
  - lips for fullness and colour
  - short eye openings (palpebral fissures)
- Open, look at and feel the child's mouth:
  - palate for ridges
  - presence of teeth
  - cleft lip
  - tongue ties
- Child's hair for general appearance:
  - healthy and shiny
  - matted and dull
  - nits or lice
  - patchy or missing
- Child's ears for size, shape, colour and the level in relation to the eyes

1.2 Limbs and joints birth–18 months observe and feel [1]

- Posture
- Appearance of the limbs, muscle tone and range of movements
- Any swelling, tenderness, redness, warm or hot skin or pain around the joints. See Rheumatic heart disease, page 406
- Signs of injury e.g. bruising, cuts, burns, parasites (scabies), limping
- Misalignment or incorrect anatomical position
- Abnormalities of the hips:
  - lay the infant on their back (supine) without a nappy
  - ensure the pelvis is horizontal
  - keeping the hips symmetrical, extend the legs and check for equal length and knee creases for symmetry
  - place middle fingers of each hand over the outer side of hip joint (greater trochanter) and thumbs on the inner side of the thighs
  - flex the knees and hips upwards parallel to the midline
  - slowly and gently move both legs outward away from the midline (abduct) then back inwards again (adduct)
  - note any limited or unequal movement, dislocation (listen and feel for clicking) or distress caused to the infant
- Abnormalities of the back (posterior):
  - lay the infant on their stomach (prone) without a nappy
  - observe back and buttock creases for:
    - symmetry
    - birthmarks (e.g. Mongolian blue spots)
    - midline hairy tufts (may indicate spina bifida) and swelling or lumps (may indicate meningomyelocele)
    - deep dimples at the top of the buttocks (pilonidal sinus)
    - evidence of trauma

1.3 Limb and joints 18 months–15 years observe and feel [1]

- Appearance of limbs, muscle tone and range of movements e.g. general moving, walking, weight bearing and standing
- Any swelling, tenderness, redness, warm or hot skin or pain around the joints. See Rheumatic heart disease, page 406
- Signs of injury e.g. bruising, cuts, burns, parasites (scabies), limping
- Misalignment or incorrect anatomical position
- Abnormal lateral curvature of spine i.e. scoliosis
- Abnormal walking, limping, shuffling, widely placed gait, toe walking, foot flopping, leg lagging, dragging, staggering, uncoordinated gait

1.4 Genitalia general [1,2]

- Lay the infant on their back (supine) without a nappy. Observe or feel for:
  - appearance of the genital area
  - rashes, grazes, bruises, bleeding or other abnormality
  - nappy hygiene related issues e.g. urine burns (nappy rash) or faecal matter
  - abnormalities, incomplete development or sexual ambiguity
  - groin lumps

Always assess genitalia with parent present, with consent and after providing sound reasoning for the assessment. Be mindful that trauma during a parents childhood can trigger confronting emotions.

1.5 Genitalia girls [1]

- Using 2 fingers gently separate the outer labia to reveal the inner labia and clitoris
- Note any discharge, thrush or faecal matter
- Observe for female genital mutilation (seen from infancy–15 years)

1.6 Genitalia boys [1]

- Ensure hands are warm. Cold hands can stimulate cremasteric muscle reflex causing the scrotum skin to shrink and pull the testicles into the pelvic cavity
- Inspect the penis for size and the placement of the urethral opening
- Do not retract the foreskin of an uncircumcised penis more than is necessary to view the urethra
- Check if the testicles have descended by placing a thumb and index finger of one hand at the top and bottom of the scrotum to prevent the testicles receding into the inguinal canals or abdomen
- Use the other hand to gently feel the scrotum for the presence of testicles

2. Results

2.1 Head and face results [1]

- The child's head and face should be symmetrical, clean and free of abnormalities and wounds, and hair shiny and free of parasites

2.2 Limbs and joints results [1,2]

- Limbs and joints should be symmetrical, aligned and free of abnormalities, wounds and swelling
- Hips and knees should have full range of well paced and intentional movements

2.3 Genitalia general results [1,2]

- Consider Child safety reporting, page 428 for any rashes, grazes, bruises, bleeding, signs of trauma, neglected hygiene or other abnormality
- Consider inguinal hernia if lumps noted in the groin

2.4 Genitalia girls results

- Partially or fully fused labia may suggest the presence of a scrotum. Do not attempt to separate
- A urinary opening not located below the clitoris may indicate the presence of a penis i.e. ambiguous genitalia

2.5 Genitalia boys results

- A non-erect penis at birth is 2–3 cm in length with a straight projection
- Microphallus (a small penis) may indicate other organ anomalies
- Testicles in a newborn are approximately 1 cm in diameter
- A testicle that cannot be palpated is considered undescended, which should descend by 3–6 months
- Oedema of the scrotum (hydrocele) is common and usually resolves by 1 years old

3. Brief intervention

- Discuss reducing soap and scented cream use on infant skin to avoid rashes and allergies. Warm water is usually enough when < 6 months
- As children age, encourage showering routines
- Discuss penile and vaginal hygiene. Remove faecal matter from genitalia folds
- Avoid retracting the foreskin of an uncircumcised penis:
  - the foreskin will retract > 4 years of age from erection or childhood exploration
  - once foreskin retracts, educate the child to clean underneath without soap. Soap will cause drying and excoriation
- Reassure and normalise parental concerns:
  - normal childhood genitalia exploration
  - Mongolian spots
  - nappy rash (and how to prevent)
  - plagiocephaly. Encourage child to move, avoiding prop feeding

4. Referral [1,2]

- Refer to Child safety reporting, page 428 for suspicion of abuse, harm or neglect
- Refer to the *Primary Clinical Care Manual* for:
  - swelling, tenderness, redness or pain around joints which may indicate acute rheumatic fever or Rheumatic heart disease, page 406
  - infected sores, scabies or other skin conditions
- Refer to a MO/NP, child health nurse, physiotherapist or speech pathologist for:

- thin upper lip, flattened philtrum or short palpebral fissures which may indicate fetal alcohol spectrum disorder. See Developmental delay or disability (child), page 295
- limited head and neck range of motion or if head tilts to one side while the chin tilts to the other (torticollis)
- unresolving plagiocephaly once child starts moving
- any cleft palate or cleft lip which may hinder a baby's feeding
- limited abduction of one or both legs or unequal leg length in 0–6 month olds
- any asymmetrical knee or buttock creases
- lateral curvature of spine i.e. scoliosis
- any pilonidal sinuses or deep dimples (spina bifida)
- any ambiguous genitalia or fused labia
- testicles which are unable to be milked into scrotum
- one or both testicles are not palpable
- testicles felt in groin or lower abdomen
- any unexplained nodules or lumps
- any parental or clinician concerns

5. Follow-up

- Place the child on a recall register if required
- Ensure all referrals are actioned
- Provide the parent with details for the next scheduled follow-up appointment

6. References

- All Chronic Conditions Manual references are available at the Office of Rural and Remote Health website

7. Resources

1. Raising Children child health resources

Infant reflexes

Information

- Performed to assess a child's neurological development and function

Health check recommendations

- **All children from birth to 6 months at each scheduled health check**

1. Procedure

- Perform each reflex assessment. See Table 1.
- Use the online videos to assist with reflex assessment. See Resource 1.
- Determine if the infant requires a referral according to a present or absent age related reflex and place on a follow-up and recall register

Table 1. Reflexes summary [1,2]

Reflex	Stimulation	Response	Duration
Moro	• Sudden move, loud noise	• Startles, throws out arms and legs and then pulls them toward body	• Diminishes at 3–4 months, disappears by 6 months
Blink	• Flash of light or puff of air	• Closes eyes	• Permanent
Stepping	• Infant held upright with feet touching ground	• Moves feet as if to walk	• Diminishes at 3–4 months
Grasping	• Palms touched	• grasps lightly	• Weakens at 3 months; disappears by 1 year
Sucking or Rooting	• Cheek stroked or side of mouth touched by an object	• Turns toward source, opens mouth and sucks on object	• Disappears at 3–4 months
Plantar or Babinski	• Sole of foot	• Fans out toes and twists foot in	• Disappears at 9–12 months

1.1 Moro reflex (1 week–2 months) [1,2]

- Support infant in the semi-sitting position and allow the head and trunk to drop back to a 30 degree angle
- Observe the arms splay outwards (adduct) in a wide embracing motion followed by relaxed flexion. The legs may respond similarly
- Reflex diminishes in strength by 3–4 months and disappears by 6 months

1.2 Blink reflex (1 week onwards) [1,2]

- Shine a light at the infant's open eyes or bring an object close to their face
- Observe a rapid closure of the eyes
- No response can indicate poor visual perception

- Reflex is permanent and should not diminish with time

1.3 Stepping reflex (1 week–2 months) [1,2]

- Support infant upright, allowing the soles of their feet to touch a table surface
- Observe alternate flexion and extension of the legs, simulating walking
- Reflex diminishes between 3–4 months and disappears before voluntary walking

1.4 Grasp or palmar reflex (1 week–3 months) [1,2]

- Avoid touching the back of the infant's hand when assessing this reflex
- While the infant's head is in midline, touch the palm of the hand with a finger tip
- Note a strong grasp of your finger
- Sucking or applying light traction to the arm also facilitates the grasp reflex
- Reflex is strongest at 1–2 months of age, diminishes by 3 months and disappears by 12 months old

1.5 Rooting or sucking reflex (1 week–4 months) [1,2]

- Touch one corner of the infant's mouth
- The infant's mouth should open and head turn in the direction of the touch
- Minimal or no response is expected if the infant has been recently fed
- Disappears by 3–4 months

1.6 Plantar or Babinski reflex (1 week–6 months) [1,2]

- Firmly stroke the sole (plantar) of the infant's foot
- The big toe should move upwards while the other toes fan out
- Disappears by 12 months

2. Results

- Infant reflexes disappear as the child gets older and are usually absent after 6 months of age except for the blink reflex which persists throughout life

3. Brief intervention

- Provide the parents with reflex progression resources. See Resource 1.

4. Referral

- Refer to the MO/NP or paediatrician if:
  - there are any age related reflex deficits
  - any infant reflexes persist beyond the recommended time frames
  - the parent has any concerns

5. Follow-up

- Place the child on a recall register if required
- Ensure all referrals are actioned
- Provide the parent with details for the next scheduled follow-up appointment

6. References

- All Chronic Conditions Manual references are available at the Office of Rural and Remote Health website

7. Resources

1. Example videos at Embryology–Newborn reflexes

Nutrition (child)

Information

- Performed to identify and support parents and children to improve eating habits

Health check recommendations

- **All children from birth to < 15 years at each scheduled health check**

1. Procedure

- Ask the parent the nutrition questions according to the child's age. See Table 1.
- Identify if the child meets adequate dietary intake and provide brief intervention
- Determine if the child requires a referral and place on a follow-up and recall register

Table 1. Nutrition questions for children

Question	Explore
0 to < 3 years of age	
Breastfeeding? **Formula feeding?** **Any other food or drink?**	• Or both breast and formula feeding • Nutritionally rich or poor foods
6 months to < 3 years	
Eating solids? **Uses a bottle?** **Uses a cup?**	• What foods is your child eating? • Are they puree, mashed, pieces, other?
6 months to < 5 years	
Healthy food and drink? **Nutritionally poor food and drink?** **Does the child always have access to food?**	• Nutritionally rich or poor foods
> 6 years	
What did the child eat yesterday? **What did the child drink yesterday?** **Does the child always have access to food?**	• Asking what they ate the previous day helps determine a dietary pattern

2. Results

- A child's nutritional intake should be balanced and healthy according to Diet and nutrition, page 29

3. Brief Intervention [1–5]

- Poor Diet and nutrition, page 29 increases risk of chronic conditions, including:
  - iron deficiency and anaemia
  - some forms of cancer
  - Diabetes, page 304
  - Coronary heart disease, page 264
  - Chronic kidney disease, page 242

- Overweight and obesity (child), page 372
- Dental caries and periodontal disease, page 280

- Encourage parents to be role models for healthy lifelong family eating habits. Use visual charts to assist. See Resource 1.

In children < 5 years avoid foods that pose a choking risk e.g. grapes, nuts, hotdogs, lollies, jelly beans, popcorn or any small firm foods

- Children exposed to frequent unhealthy diets are more vulnerable to visual food-cues (advertising) and increased food-cue salience (difficulty restraining eating poor foods)

3.1 Babies aged 0 to < 6 months [1]

- Support exclusive breastfeeding until 6 months of age for optimal growth, health and development. No additional fluid or food is needed
- Formula-fed babies should have infant formula exclusively until 1 year of age
- Breast milk and formula provides all the iron needed for the first 6 months

3.2 Infants 6–12 months of age [1,5]

- Infants can continue to be breastfed until 2 years and beyond if mutually desirable
- Cooled boiled tap water can be offered to infants > 6 months via sipper cup if needed
- Introduce infants to a range of appropriately textured foods. Tips include:
  - add breastmilk, formula or water to thin consistency and assist swallowing
  - provide thicker foods as the child ages and becomes better at swallowing
    - puréed iron rich meat, cereal, vegetables, fruits, fish and eggs
    - yoghurt and cheese
  - infants should be offered 3 regular meals each day by 9 months
- Reduce food allergy risk for infants with severe eczema or egg allergy by introducing common allergy causing foods by 12 months in an age appropriate form:
  - well cooked egg, peanut butter/paste, cow's milk, tree nuts, soy, sesame, wheat, fish and other seafood
  - continue to provide these foods twice weekly to maintain tolerance
  - refraining from offering can result in infant developing food allergies
- Avoid honey which can contain bacteria that causes botulism in infant < 12 months
- Avoid takeaway foods, cakes, biscuits, lollies, ice cream and deep fried foods
- Avoid high salt foods which harm babies underdeveloped kidneys

3.3 Infant 1–2 years of age [1]

- Formula-fed infants can switch to full fat cow's milk from 1 year of age: low-fat and reduced-fat milks are not recommended in the first 2 years of life
- Encourage only water or milk from a sipper cup or cup
- Offer infants up to 6 small meals a day including:
  - nutritious fruit, vegetables, meats and dairy
  - eating similar healthy foods as the family

- Avoid tea, coffee, cordials, sports and energy drinks, juice and fizzy drinks
- Avoid foods high in sugar and fat

3.4 Children 2 to < 15 years of age [2]

- Offer a variety nutritious foods to grow and develop normally including:
  - vegetables, legumes and fruits
  - cereals, breads, rice, pasta and noodles, preferably wholegrain
  - lean meat, fish, poultry and eggs
  - reduced fat milks, yoghurts, cheeses and alternatives
  - water only
  - foods low in salt
- Avoid nutritionally poor foods high in saturated fats, salt and sugar
- Avoid soft, sports and energy drinks, cordial, fruit juices, tea and coffee

Parents who provide children with a regular diet of nutritionally poor foods and drinks predispose their children to chronic conditions later in life

4. Referral

- Consider barriers to healthy eating such as finances, location and availability of nutritious foods and refer accordingly. Consider referrals to:
  - dietitian and community nutrition team
  - child health nurse or health worker
  - MO/NP or paediatrician
  - social worker
- For any concerns about a child's nutritional intake refer to the dietitian

5. Follow-up

- Place the child on a recall register if required
- Ensure all referrals are actioned
- Provide the parent with details for the next scheduled follow-up appointment

6. References

- All Chronic Conditions Manual references are available at the Office of Rural and Remote Health website

7. Resources

1. Australian dietary guidelines

Oral health (child)

Information [1–7]

- Performed to identify and manage Dental caries and periodontal disease, page 280 early, to prevent risk of Coronary heart disease, page 264, Diabetes, page 304, Overweight and obesity (child), page 372 and otitis media

Notes

- Children are eligible for free dental care (Resource 1.) via:
  - the Child Dental Benefits Schedule (CDBS) for children < 17 years or
  - Queensland Government public dental services

Health check recommendations

- **All children between 6 months and 15 years at each scheduled health check**

1. Procedure

- Ask the parent or child the age appropriate questions. See Table 1.
- Perform a visual oral check
- Determine if the child requires a referral according to the answers and place on a follow-up and recall register

Table 1. Age appropriate oral health questions and interventions for children

Question	Explore
6 months to < 18 months	
Does the child have any teeth? **Does the parent clean the child's teeth?**	• Use of a soft toothbrush? • No toothpaste? • Perform visual oral check. Lift the lip
18 months to < 5 years	
Does the parent clean the child's teeth twice a day?	• Use of a soft toothbrush? • Use of a low fluoride toothpaste? • Perform visual oral check. Lift the lip
> 5 years	
Does the child (> 8 years) or parent (< 8 years) brush their teeth twice a day? **Has the child had any toothache or bleeding gums in the last 4 weeks?** **Has the child had a dental check up in the last 2 years?**	• Use of a soft toothbrush? • Use of standard fluoride toothpaste? • Perform visual oral check. Lift the lip

1.1 Visual oral check

- Involves looking at all aspects of the oral cavity; teeth, gums and cheeks
- Ensure room is well lit or use a torch and position the child comfortably
- Don gloves
- Lift the upper lip and lower the bottom lip to inspect surfaces of the outer teeth

- Use a tongue depressor to inspect the back of the oral cavity
- Observe teeth for alignment, frosting (early decay), brown decay (active) or black decay (inactive)
- Observe gums for colour, receding edges or bleeding
- Observe inner cheeks for colour, ulcers or trauma

2. Results

2.1 Questions results

- Answers should be answered positively e.g. child or parent **does** brush teeth twice a day, child **does not** have painful or bleeding gums

2.2 Visual oral check results [2–4]

- Baby teeth (deciduous) usually erupt:
  - by 6 months of age but times vary
  - in lower teeth before upper
  - in girls before boys
  - in both jaws usually in pairs
  - all by 3 years of age
- Sometimes babies are born with a neonatal tooth and lost soon after birth
- Teeth should be white, free of brown spots (active decay) or black spots (old decay)
- Gums should be pink with clearly defined and tight margins around each tooth, free of inflammation, swelling, bleeding, pain or tenderness
- Loose teeth or gums that bleed spontaneously or during brushing are a sign of Dental caries and periodontal disease, page 280
- The inside of the cheeks should be pink, red, smooth and moist
- If a child's oral health is poor, provide brief intervention and make a referral

3. Brief intervention

3.1 Children all ages [1–7]

- Dental caries and periodontal disease, page 280 affects > 40% of Australian children due to inability to self care; Rates are higher for Aboriginal and Torres Strait Islander children. See Resource 2.
- A parent is responsible for cleaning a child's teeth < 8 years of age as children lack motivation or manual dexterity to do so
- Keep toothpaste out of reach of children. Children should not dispense toothpaste without supervision
- The tooth brushing method is a circular or jiggling motion on both the inside and outside surfaces of the tooth, along the gum margins, then a scrubbing motion along the chewing surfaces
- Encourage the child to spit toothpaste out once finished; do not rinse mouth
- Develop a regular tooth brushing routine for children
- Replace toothbrushes every 3–4 months or sooner if bristles become frayed
- **Do not share toothbrushes, food utensils or place baby bottles or dummies in adult mouths. Harmful adult oral bacteria spreads to children causing decay**
- Everyone in the family should maintain their dental hygiene
- Breastfeeding is best for baby's teeth

- If bottle feeding, put only breast milk, formula or water in the bottle
- Prop feeding or putting a baby to bed with a bottle can cause tooth decay
- Any fluids (besides water) or food left in the mouth of a child > 12 months predisposes their teeth to decay
- Provide healthy Diet and nutrition, page 29:
  - only provide water to drink. Avoid fruit juices, sports or fizzy drinks or cordials
  - choose fruit (apples and bananas) and vegetable (carrots and tomatoes) snacks. Avoid sugary or acidic snacks and takeaway processed foods
- Encourage annual dental visits. Children should have a dental assessment by 2 years of age. See Resource 1.
- Dental practitioners can provide advice about access to alternate sources of fluoride such as mouth rinses and high fluoride toothpastes

3.2 Children aged < 5 years [2–4,6,7]

- Plaque forms as soon as teeth erupt; clean infant's teeth using a damp cloth
- Children aged 6–18 months should have their teeth brushed by a parent twice a day with a small soft toothbrush:
  - **without toothpaste** in areas with **fluoridated water**
  - with a **small pea sized amount of low fluoride toothpaste** (0.4 to 0.55 mg/g) in areas with **unfluoridated water**
- Children aged 18 months to 5 years should have teeth brushed by a parent twice a day with a small soft toothbrush with a small pea sized amount of low fluoride toothpaste

3.3 Children aged > 5 years [2–4]

- Using a soft toothbrush the teeth should be cleaned twice a day or more frequently with standard fluoride toothpaste
- Brush before going to bed as protective saliva reduces while sleeping. Decay causing bacteria attacks dry tooth surfaces
- Introduce dental floss or interdental cleaning products to clean between the teeth

4. Referral

- For any concerns identified in Table 2. refer to:
  - the *Primary Clinical Care Manual*
  - a government funded dental service. See Resource 1.
  - a private dentist using the Child Dental Benefits Schedule entitlement
- See Dental caries and periodontal disease, page 280

Table 2. Oral health related referral issues

Site	Problem	
Teeth	• Malalignment • Decay (white spots, brown or black holes) • Loose or missing	• Plaque buildup • Trauma • Toothache
Gums	• Swelling • Bleeding (spontaneously or when brushing)	• Tenderness or pain • Abscess or ulcers • Thrush

5. Follow-up

- Place the child on a recall register if required
- Ensure all referrals are actioned
- Provide the parent with details for the next scheduled follow-up appointment

6. References

- All Chronic Conditions Manual references are available at the Office of Rural and Remote Health website

7. Resources

1. Child Dental Benefits Schedule (CDBS) eligibility details or Queensland Government public dental services details
2. Queensland Health oral health promotion and resources

Physical activity (child)

Information [1,2]

- Assessed to identify and manage behaviours that increase the risk of Overweight and obesity (child), page 372 to prevent lifelong risks of developing chronic conditions

Health check recommendations

- **All children from birth to < 15 years at each scheduled health check**

1. Procedure

- Ask the questions as per Table 1. Be prepared to explore answers
- Provide brief intervention if required
- Determine if the child requires a referral and place on a follow-up and recall register

Table 1. Physical activity questions

Question	Explore
Birth to 1 years	
Does the infant do floor based play daily?	• Yes or no • Consider tummy time, rolling, crawling, cruising, etc.
1–5 years	
Is the child physically active for > 3 hours a day?	• Yes or no • Which activities? What about screen time?
> 5 years	
Was the child or young person active for > 1 hour a day in the last week?	• Add up the times a child is active e.g. 10 mins before school, 30 mins at recess, 30 mins lunch break, etc • Consider weekends and holidays

2. Results

2.1 Physical activity [1,2]

- Characterised by activity that makes breathing and heart beat faster
- Moderate intensity activity requires some effort where children can still speak easily while doing it e.g. fast walking, riding a bike or scooter and active play
- Vigorous intensity activity requires effort and makes children breathe hard and fast ('huff and puff') e.g. running, chasing or organised sports e.g. football, netball

2.2 Sedentary behaviour [1,2]

- Characterised by sitting or laying down (except for when sleeping)
- Electronic devices are the primary contributors to sedentary behaviour

3. Brief intervention

- Parents are the role models to encourage and provide their children with opportunities for Physical activity and sleep, page 34 which:
  - creates opportunities for fun with friends
  - reduces anti-social behaviour, including aggressive and disruptive behaviour
  - develops skills such as co-operation and teamwork
  - improves self-esteem, confidence and concentration
  - manages anxiety and stress
  - reduces the risk of developing chronic conditions in adulthood
  - improves physical fitness, co-ordination and movement skills
  - builds muscle and bone strength
  - improves healthy growth and development and reduced weight gain
- Children should not be restrained or be sedentary for > 1 hour at a time e.g. stroller, car seat, high chair, electronic devices or screen time
- If sedentary, encourage parents to engage their child e.g. read, sing, play
- Sedentary behaviour can counteract the benefits of physical activity

3.1 Infants 0–1 year [1,2]

- Encourage floor based play, plus 30 minutes of tummy time, in a safe and supervised environment
- Encourage 14–17 hours of good quality sleep (including naps) for < 3 month olds and 12–16 hours for 4–11 month olds. Provide Resource 1.

3.2 Toddlers 1–2 years [1,2]

- Should be physically active every day for > 3 hours; more is better
- Encourage 11–14 hours of good quality sleep (including naps) with routine sleep and wake times. Provide Resource 1.

3.3 Preschoolers 3–5 years [1,2]

- Should be physically active every day > 3 hours with > 1 hour of vigorous play; more is better
- Restrict daily electronic device or screen time to < 1 hour; less is better
- Encourage 10–13 hours of good quality sleep (may include a nap) with routine sleep and wake times. Provide Resource 1.

3.4 Children and young people 6–17 years [1,2]

- Should accumulate > 1 hour of moderate to vigorous intensity activity every day including:
  - a variety of aerobic activities that makes their heart beat faster
  - activities that strengthen muscle and bone at least 3 days per week
- Limit daily screen time to < 2 hours, excluding for educational purposes
  - discuss boundaries, time limits and age appropriate content
  - avoid before sleep, and keep electronic devices out of the bedroom
- 5–13 year olds should have 9–11 hours of uninterrupted sleep per night
- 14–17 year olds should have 8–10 hours of uninterrupted sleep per night
- Provide Resource 2.

4. Referral

- Refer to the MO/NP for concerns of Overweight and obesity (child), page 372 despite brief interventions

5. Follow-up

- Place the child on a recall register if required
- Ensure all referrals are actioned
- Provide the parent with details of the next scheduled follow-up appointment

6. References

- All Chronic Conditions Manual references are available at the Office of Rural and Remote Health website

7. Resources

1. 24-hour movement guidelines – birth to 5 years
2. 24-hour movement guidelines – children and young people (5 to 17 years)

Skin (child)

Information [1–3]

- Inspected to identify and manage skin infections that can lead to lifelong debilitating chronic conditions such as Rheumatic heart disease, page 406 and Chronic kidney disease, page 242

Child safety notification [4]

- See Child safety reporting, page 428 for any signs that may indicate abuse, harm or neglect including:
  - bruises on any part of a child's body especially over soft tissue areas (bruises in children commonly occur over bony areas)
  - human bite marks
  - circular cigarette burns anywhere on body
  - lighter burns (may resemble smiley face)
  - scalds from immersion in hot water such as feet, hands or buttocks
  - fractures of any type

Urgent [1–3,5]

- Contact your local Population Health Unit if frequent community skin related presentations occur

Health check recommendations

- **All children from birth to < 15 years at each scheduled health check**

1. Procedure

- Ask the parent or child about any skin concerns as per Table 1.
- Perform a head to toe visual inspection
- Gain permission to remove clothing to better visualise skin. Older children may decide to lift shirts or partly remove pants
- Provide brief intervention if required
- Determine if the child requires a referral and place on a follow-up and recall register

Table 1. Age related skin observations for all children < 15 years

Question	Procedure
Has the child had any skin infections?	• Review records • How often? where? treatment required?
Inspect skin	• Head to toe observation

1.1 All children [1–7]

- Inspect skin for:
  - sores, scabs, scars, scratches, rashes or cuts
  - jaundice
  - bruises; red/dark blue = new bruise, purple/yellow = older bruise
  - mosquito or sandfly bites
  - itches or irritations
  - loss of sensation or pigmentation
  - nodules or lumps
  - sunburn
  - infections; red, swollen, warm, painful, +/- pus or exudate
  - fluid filled blisters
  - See Resource 1.
- For jaundice see Birth information, page 68

1.2 Infants aged 1–6 weeks [1–7]

- Observe the umbilicus:
  - the umbilical stump area should be dry, clean, odourless and usually dark
  - inspect skin folds (neck, behind legs, groin, armpits etc) for any infected tissue i.e. discharge, redness, warm skin
  - note any visible and palpable bulges through the umbilicus or abdominal muscles (hernia) when the infant strains, coughs or cries; common in infants
  - the umbilicus is usually inverted
- Milk pimples (milia); small white spots resembling pimples over nose, checks and eyelids
- Protective waxy white/grey substance coating the skin (vernix)
- Birthmarks are mostly harmless and fade, shrink or disappear over time. They can be:
  - flat, raised, have regular or irregular borders and vary in colour from brown, tan, black, pale blue, pink, red or purple
  - red and vascular e.g. strawberry haemangiomas, port-wine stains and stork bites
  - pigmented e.g. moles, café-au-lait spots and Mongolian spots
- Mongolian spots are:
  - irregular areas of deep bluish-black to grey pigment
  - usually found on the back, buttocks, shoulders and legs of babies
  - often mistaken for bruises
  - often present in dark skinned babies which disappear in preschool years

1.3 Children > 6 weeks to 15 years

- Inspect areas where bacteria and scabies mites are commonly found:
  - behind knees, soles of feet and between toes
  - in creases of arms and under armpits
  - between fingers, palms of hands and wrists
  - around neck, scalp and behind ears
  - lower back and between buttocks

2. Results

- Skin should be clean, intact and free of abnormalities

3. Brief intervention [1–7]

- Discuss **hand hygiene** as the single most important strategy to prevent skin infections. See Resource 2.
- Reassure parents of normal or common childhood skin conditions that settles with time or of no concern medically:
  - most birth marks e.g. Mongolian spots
  - clean umbilicus stump daily
  - vernix and milia are both normal and resolve in time
- Haemangiomas may bleed easily but stop quickly when continuous pressure is applied
- Clean any non-infected sores with soap and water and apply a cover:
  - **Staphylococcus aureus** is the most common cause of skin infections (e.g. boils, cellulitis, impetigo, school sores) and usually managed with topical therapy
  - **Streptococcal** skin infections can lead to acute rheumatic fever (ARF), Rheumatic heart disease, page 406, acute post-streptococcal glomerulonephritis (APSGN) and Heart failure, page 325
- Regularly wash and change clothes and bedding:
  - **parasites** that invade the skin (e.g. pubic and head lice, scabies) can cause infections that leads to Chronic kidney disease, page 242
- Use mosquito coils and skin repellent during evenings. Rid homes and yards of containers of stagnant water. Spray insecticide under and around household items:
  - **mosquitoes, ticks, fleas and other insects** can transmit viruses and parasites e.g. dengue fever, malaria, Ross River fever, Japanese encephalitis (JE)
- Keep skin dry, aired and moisture free. Change sweaty or damp clothes:
  - ringworm, tinea, jock rash, double skin, thrush and athlete's foot are common **fungal infections**
- Infectious **viral** skin infections include:
  - **herpes**: adults with mouth herpes to not kiss or touch children when herpes sore is active
  - **warts**: avoid touching or bathing with others to avoid spreading
  - **molluscum contagiosum** (multiple watery blisters): spread prolifically from bathing. Shower only. Cover and avoid contact with other children
  - common viral infections are harmless and resolve with time however ensure all children are vaccinated e.g. chicken pox, measles, mumps and rubella, etc.
- **Rashes and contact dermatitis** are common and can be due to:
  - detergents, creams, and skin products. Avoid in infants
  - environmental irritants or allergens. See Asthma (children 1–12 years), page 215
  - prolonged exposure to urine or faeces (nappy rash)

- **Sunburn**:
  - < 6 months protect skin with clothing
  - **slip** on sun protective clothing
  - **slop** on SPF 30 (or higher) sunscreen > 6 months
  - **slap** on a broad-brimmed hat
  - **seek** shade
  - **slide** on wrap-around sunglasses
- For further information of common childhood skin conditions see Resource 1.

4. Referral [1–7]

- **For multiple children presenting with similar skin conditions, be alerted to a broader community public health outbreak e.g. APSGN or ARF. Contact your local Population Health Unit to determine a course of action**
- Refer to the *Primary Clinical Care Manual* for:
  - any unvaccinated child
  - boils, cellulitis and impetigo
  - suspected streptococcal skin infections
  - head lice and scabies
  - suspected mosquito, tick, flea or other parasite borne viruses e.g. dengue fever, Ross River fever, Japanese encephalitis (JE) and Lyme disease
  - ringworm, tinea, jock rash, double skin, thrush and athlete's foot
  - herpes, warts, molluscum contagiosum and vaccine preventable infections such as chicken pox
  - always suspect ARF or APSGN in rural and remote locations. See Rheumatic heart disease, page 406
- Refer to the MO/NP for:
  - haemangiomas:
    - of any size on any part of the head or over joints
    - of large size to any part of the body
  - any unresolving skin condition e.g. rashes
  - any concerns

5. Follow-up

- Place the child on a recall register if required
- Ensure all referrals are actioned
- Provide the parent with details of the next scheduled follow-up appointment

6. References

- All Chronic Conditions Manual references are available at the Office of Rural and Remote Health website

7. Resources

1. Recognising and treating skin infections: a visual clinical handbook and Skin infections in children and Neonatal and skin care
2. Handwashing resources available at Hand Hygiene Australia

Social-emotional wellbeing (child)

Information [1–5]

- Undertaken to identify infants, children or young people who may be:
  - experiencing feelings that impact on their social and emotional wellbeing
  - experiencing thoughts/feelings of suicide or self-harm
  - exposed to family violence or poor caregiver attachment
  - at risk of neglect or abuse and future mental health conditions

Child safety notification

- For a suspicion of harm or neglect see Child safety reporting, page 428

Health check recommendations

- **All parents of children aged < 8 years**
- **All children aged 8 to < 15 years**

1. Procedure

- Ask the questions in your own words and words the child understands
- The questions are:
  - general exploratory questions of a parent/child's wellbeing. They are not diagnostic
  - based on general anxiety disorder and depression based screening tools
- Be prepared for the child or parent to debrief with you. See Engaging our patients, page 19
- Provide brief intervention if required
- Determine if the parent or child requires a referral and place on a follow-up and recall register

1.1 Parents of children aged < 8 years questions

- Ask parent the questions as per Table 1.
- Observe how the **child reacts** or responds to the parent's cues:
  - do they seek the comfort of the parent if they are hurt or scared?
  - responds positively or negatively to their parent?
  - the child's facial expressions, eye contact, vocalisations, activity and recognition of others around them
  - quiet and withdrawn
- Observe the **interactions, reactions and verbal statements of the parent** with the child including:
  - impatience
  - unrealistic expectations e.g. a child should sleep all night and never cry
  - anger towards, yelling at or rough handling of the child
  - limited or no eye contact or communication between the parent and child
  - the parent speaking negatively, e.g. "she does this just to annoy me", "he hates

me" or "I don't like her"
- parent is silent, flat or fails to respond to the child's cues
- the parent is anxious about the child's behaviour

Table 1. Social-emotional wellbeing questions to parents of children < 8 years

Questions	Explore
Does the parent have any concerns about:	
Coping?	• Is the parent feeling overwhelmed, low, tired, exhausted, stressed, anxious or unable to care for child? • Financial stress? Maternal mood? Substance use?
Relationships (with family or friends)?	• Are relationships or friendships strained? Domestic and family violence, page 161? • Is there help available to mediate?
Support?	• Does the person have a partner? Single parent? • Does the partner help at home? With child care? With child raising? • Is family support available to help with child or to talk with?
Violence?	• Is there any violence? Violence towards the child?
Child's behaviour?	• Crying, tantrums, yelling back, hitting or swearing? • Is parent anxious, stressed or feel low with child behaviour?
While observing consider "is the relationship between the parent and child positive or negative?"	

1.2 Children aged 8 to < 15 years questions

- With consent ask the questions with or without a parent present as per Table 2.
- If a clinician is uncomfortable asking any questions refer to a senior clinician
- If children find the questions difficult to understand, reword or rephrase the questions e.g. "is your spirit weak or strong at the moment?"
- Observe for visual cues (facial expressions, body language) being mindful of cultural aspects of communication (eye contact, bowed head)

Table 2. Social-emotional wellbeing questions for children 8–15 years [6–9]

Responses: (1) Not at all (2) Several days (3) More than half the days (4) Nearly every day
Over the last 2 weeks: i. How often did you have little interest or fun in doing things? ii. How often did you feel hopeless, down in the dumps, sad or slack? iii. How often did you feel nervous, anxious or on edge? iv. How often were you not able to stop worrying about things?
A score ≥ 3 for questions i and ii (combined) **or** iii and iv (combined) requires further screening and referral. See 2.2 Child questions

2. Results

- **If the parent or child talks about harming themselves or some other person refer immediately to the *Primary Clinical Care Manual,* the MO/NP or mental health**

services. Do not leave them alone or send away

2.1 Parent responses

- If a parent responds 'yes' to any of the questions, offer brief intervention and make an appropriate referral. See Table 3.
- To determine the urgency for when the parent needs to be seen, perform a 25 item Strengths and Difficulties Questionnaire (SDQ). See Resource 1.
- If the parent responds 'no' to any of the questions and the clinician has no concerns, offer information and praise successes

2.2 Child questions

- If the child scores ≥ 3 for questions i and ii (combined) **or** iii and iv (combined):
  - perform a HEADDS assessment to determine the urgency for when the child or young person needs to be seen. See Resource 2.
  - refer for further investigation. See Table 3.
  - provide brief intervention

3. Brief intervention

- Infancy is a foundational physical, psychological and social development period
- The quality of the parent attachment relationship and experiences affects a child's ability to form meaningful relationships, play, communicate, learn, face challenges and temperament (how a child reacts to situations)
- To develop into socially and emotionally healthy adults, children need to feel wanted, loved and secure
- Adverse relationships and experiences increases risks for adverse mental health
- Identify if the child, young person or parent has someone to talk with when they feel worried or scared. If not, provide 24 hour health service details to seek help if thoughts become regular, intrusive or impact on their ability to function
- Discuss how certain feelings or thoughts are normal, but ongoing negative thoughts and feelings require management and monitoring to help feel better
- Discuss how a body reacts to stress, fear, confusion or sadness including:
  - fast heart beat
  - crying
  - sadness
  - sweating
  - shaking
  - anger

4. Referral

- Refer to the *Primary Clinical Care Manual* if parent or child talks of self-harm or harm to others
- Refer to the MO/NP/mental health services if:
  - concerns are raised by the parent or child
  - you are concerned about the parent's ability to cope
  - you are concerned about the child's social-emotional wellbeing
  - you observe relationship or attachment issues between the child and parent
  - a child scores ≥ 3 for questions i and ii (combined) **or** iii and iv (combined)
- Refer all parents to:
  - child health nurse, MO/NP **or** Early Intervention Specialist (psychologist or social worker) **or**

  - perinatal mental health services **and**
  - a home visiting child health program **and**
  - parenting program or group e.g. Circle Of Security©, Together in Mind© **and**
  - local family support services
- Make a Child safety reporting, page 428 for any child safety concerns
- See Table 3. for further referral options

Table 3. Referral options

Queensland Health
• Health worker, registered nurse, psychologist or social worker • Child safety reporting, page 428 services • Child and Youth Mental Health Service • Alcohol, tobacco and other drugs
Other services
• Aboriginal and Torres Strait Islander Legal Service (Qld) Ltd • Department of Children, Youth Justice and Multicultural Affairs • Act for Kids • Queensland Indigenous Family Violence Legal Service • Queensland Aboriginal and Islander Health Council (QAIHC) • Elder, minister or pastor • Headspace, the national youth mental health foundation • Quitline 13 78 48 or Quit smoking • Royal Flying Doctor Service nurse or doctor • School Principal or student guidance officer • True Relationships & Reproductive Health (True) • Kids Helpline or phone 1800 55 1800 • Alcohol and Drug Information Service on 1800 177 833 all hours • Turning Point online counselling service

5. Follow-up

- Place the child or parent on a recall register if required
- Ensure all referrals are actioned
- Provide the child or parent with the next scheduled follow-up appointment

6. References

- All Chronic Conditions Manual references are available at the Office of Rural and Remote Health website

7. Resources

1. The Strengths and Difficulties Questionnaire and how to score
2. The HEADDS assessment
3. Talking with young people
4. Menzies social-emotion wellbeing resources for Aboriginal or Torres Strait Islander people
5. Children of Parents with a Mental Illness (Australian COPMI Initiative)
6. Queensland Centre for Perinatal and Infant Mental Health
7. Child Safety Practice Manual: Mental health and mental illness

Special considerations (child)

Information

- Undertaken to screen high risk children for preventable chronic conditions and to provide **early intensive** Lifestyle modifications, page 18, particularly among Aboriginal and Torres Strait Islander children who are at greatest risk

Health check recommendations [1–5]

- **All children > 10 years with a BMI > 85th percentile for age and gender (See Overweight and obesity (child), page 372) for:**
  - pre-diabetes
  - diabetes mellitus
  - dyslipidaemia
  - pre-hypertension and hypertension
  - Non-alcoholic Fatty Liver Disease (NAFLD)
  - Polycystic Ovary Syndrome (PCOS)
  - Obstructive Sleep Apnoea (OSA)
  - social-emotional wellbeing

1. Procedure

- Undertake assessments as below
- Provide brief intervention and resources
- These children require a referral and close follow-up and monitoring. Place on a recall register

1.1 Blood pressure [4]

- Measured (Resource 1.):
  - using a manual or automatic sphygmomanometer. Check that automatic unit is set to paediatric
  - to the nearest 2 mmHg
  - initially on both arms
  - using the arm with the higher reading for all subsequent measurements
  - while sitting and after standing for 2 minutes, if postural hypotension (low BP while standing, sitting or lying) is suspected

1.2 Pathology

- Undertaken by a suitably qualified clinician according to local policies and guidelines. See Resource 2.
- Take pathology according to Table 1.

1.3 Obstructive Sleep Apnoea (OSA) [2–4,7]

- Ask and document whether the child snores or stops breathing while sleeping
- Assess a patient's daytime sleepiness and OSA risk by using a validated tool. If they score highly refer to a sleep specialist. See Resource 3.

1.4 Social-emotional wellbeing

- Assess the child's social-emotional wellbeing by open discussion. See Social-emotional wellbeing (child), page 131

2. Results

- See Table 1. for pathology values

Table 1. Venous blood results [1,2,7–10]

Assessment	Diagnostic targets				
Pre-diabetes	• **HbA1c:** 5.7% to < 6.5% (39 to < 48 mmol/mol) • **Fasting blood glucose:** ≥ 5.6 to < 7.0 mmol/L • **Oral Glucose Tolerant Test (OGTT):** 2 hour result ≥ 7.8 to < 11.1 mmol/L				
Diabetes	• **HbA1c:** ≥ 6.5% (≥ 48 mmol/mol) • **Fasting blood glucose:** ≥ 7.0 mmol/L • **Oral Glucose Tolerant Test (OGTT):** 2 hour result ≥ 11.1 mmol/L • **A child with classic hyperglycemia symptoms:** RBG ≥ 11.1 mmol/L				
Venous lipids (mmol/L)	**Rating**	**Total-C**	**TG**	**LDL-C**	**HDL-C**
	Acceptable	< 4.4	< 1.02	2.85	> 1.17
	Borderline high	4.4–5.15	1.02–1.46	2.85–3.34	1.04–1.17
	High	≥ 5.15	≥ 1.46	≥ 3.34	≤ 1.04
NAFLD	ALT > 25 U/L **(boys)**		ALT > 22 U/L **(girls)**		

2.1 Blood pressure [3–6]

- Normal range for systolic BP levels are:
  - 90–110 for children aged 8–12 years
  - 100–120 for children aged > 12 years
- Values higher than these indicates Hypertension, page 345 and requires referral

2.2 Polycystic Ovary Syndrome (PCOS) [2,3,11–13]

- The diagnosis of PCOS in an adolescent girl is made based on:
  - > 35 days between menstruating on a regular basis (oligomenorrhea) **and**
  - the presence of clinical evidence of hyperandrogenism:
    - excessive male pattern terminal hair **or**
    - acne **or**
    - male pattern baldness or hair thinning (androgenic alopecia) **and/or**
  - biochemical evidence in consultation with MO/NP e.g. luteinising hormone (LH), follicle-stimulating hormone (FSH), oestradiol, thyroid function tests (TFT) etc.

2.3 Obstructive Sleep Apnoea (OSA) [2–4,7]

- Children 5–13 years old should have 9–11 hours of uninterrupted sleep per night
- Teenagers 14–17 years old should have 8–10 hours of uninterrupted sleep per night

2.4 Social-emotional wellbeing [2,3,7,11–13]

- All children exposed to the possibility of having or developing a chronic condition should undergo a Social-emotional wellbeing, page 58 assessment

3. Brief intervention [1–7,8,11–13]

- Brief intervention relies on intensively addressing lifestyle behaviours to:

  - maintain or improve Diet and nutrition, page 29
  - reduce Overweight and obesity (child), page 372
  - increase Physical activity and sleep, page 34
- Engaging our patients, page 19 is essential for effective outcomes

3.1 Hypertension [3–6]

- Measured to detect primary hypertension and asymptomatic hypertension secondary to underlying disorders e.g. coarctation of the aorta, environmental exposures, medications
- Hypertension, page 345 in children increases the risk for persistent hypertension in adulthood, metabolic syndrome and accelerated vascular aging

3.2 Prediabetes and diabetes [1]

- Measured to identify diabetes, characterised by high blood glucose levels (BGL) and disturbance of carbohydrate, fat and protein metabolism
- Diabetes, page 304 destroys small blood vessels, and reduces the ability of nerves to function (diabetic neuropathy) leading to many problems including blindness and limb amputations

3.3 Dyslipidaemia [2–7,13]

- Performed to measure circulating blood lipids (fats). See Dyslipidaemia, page 317
- Causes blood vessel wall narrowing and blockages leading to Coronary heart disease, page 264 and Stroke and transient ischaemic attack, page 413
- Pharmacological treatment should be considered for children aged > 10 years, who are overweight or obese with an LDL-C of:
  - < 4.9 mmol/L **or**
  - < 4.1 mmol/L with a family history of early heart disease or 2 additional risk factors present **or**
  - > 3.4 mmol/L if diabetes mellitus is present

3.4 Non-alcoholic Fatty Liver Disease (NAFLD) [2,3,9,10]

- Affects 25–45% of people
- NAFLD risk increases with BMI
- Associated with impaired glucose tolerance, insulin resistance, central obesity, dyslipidaemia and hypertension; all risk factors for cardiovascular disease
- Also associated with liver inflammation and fibrosis, cirrhosis and cancer

3.5 Polycystic Ovary Syndrome (PCOS) [2,3,11–12]

- A hormonal condition where many partially formed follicles occur on the ovaries resulting in:
  - menstrual irregularity
  - high levels of male hormone (hyperandrogenism)
  - obesity and insulin resistance with a tendency to develop type 2 diabetes
  - low fertility
- Overweight and obesity (child), page 372 is the biggest risk factor for PCOS. Lifestyle modifications for weight loss is usually the first therapeutic intervention

3.6 Obstructive Sleep Apnoea (OSA) [2–4,7]

- OSA is higher among obese children and is associated with upper and lower airway inflammation, anxiety, depression and many other chronic conditions
- See Physical activity and sleep, page 34

3.7 Social-emotional wellbeing

- See Social-emotional wellbeing (child), page 131

4. Referral

- Refer all abnormal results of above assessments to the MO/NP for further investigations and an action plan
- All referrals will rely on intensive Lifestyle modifications, page 18 interventions

5. Follow-up

- Monitor closely. Place these children on a recall register
- Ensure all referrals are actioned
- Provide the child or parent with the next scheduled follow-up appointment

6. References

- All Chronic Conditions Manual references are available on the Office of Rural and Remote Health website

7. Resources

1. Cardiac Auscultation Reference Guide for taking blood pressure
2. Queensland Health Pathology Specimen collection policies and guidelines
3. The Epworth Sleepiness Scale and STOP-Bang questionnaire

PAGE LEFT INTENTIONALLY BLANK

Section 3.
Adult health checks

Advance Care Planning

Information [1–3]

- A voluntary process of planning for future health and personal care where a person's values, beliefs and preferences are documented to guide decision-making at a time when a person cannot make or communicate decisions
- Consider Advance Care Planning (ACP) for all adult persons, particularly those who are older, frail, have a chronic condition, multiple diseases, early cognitive impairment or who are approaching their end of life. ACP can:
  - improve satisfaction with care
  - reduce stress, anxiety and depression
  - reduce unwanted or non-beneficial invasive treatment at end-of-life
  - support early initiation of palliative care
  - increase likelihood of dying in preferred place of death
  - guide appropriate transfers to hospital
- Resuscitation planning should occur as part of the ACP process so that patients have their views and wishes respected at end-of-life
- Revisit ACP over time and when health or life circumstances change

Health check recommendations

- **All adults from 18 years of age**

1. Procedure

- The clinician asks themselves the "surprise question":
  - **"Given all I know about this person's health and behaviours, would I be surprised if they were to pass away in the next 6–12 months?"**
- Assess people who may benefit from ACP. See Table 1. and Resource 1.
- If the answer is 'no, I would not be surprised', then undertake ACP
- Ensure the person feels safe to talk, providing sufficient time, privacy and reassurance. See Engaging our patients, page 19
- Be respectful and recognise local cultural practices and expectations. If unsure engage the palliative support services. See Resources 2–3.
- Where appropriate, with the person's permission, include significant others and substitute decision-makers in discussions
- Review the person's notes to prepare necessary information and answers to questions that may arise
- Check for existing ACP documents in the medical records or the ACP Tracker. See Resource 4.
- Not all ACP conversations will be completed in one visit
- See Resources 5. for more information

Table 1. Prompts and considerations for those who may benefit from ACP
Recent or repeated unplanned hospitalisations for a chronic or severe progressive illness • Declining function or reduced response to treatments indicates approaching end of life
A resident of an aged care, retirement village or a person with a life-limiting condition • ACP is appropriate for this group of persons
The person appears not to have decision making capacity for the conversation • Aim to include significant others in discussions if possible
Significant others enquiring about palliative care or ACP • This flags a need for assessment
Requests for ACP • Recognise non-verbal cues. Acknowledge painful emotions
Statements about stopping treatment or wishing to pass away • Explore reasons i.e. persistent pain, fear, need for spiritual support, mental health
Current ACP documents requiring review • Review or prepare new documents when the person is well enough to think and communicate clearly

1.1 Getting started [1,4,5,6]

- Invite the person to talk about their health concerns. Prompts may include:
  - what have you noticed since your recent diagnosis? Your last trip to hospital? Starting new treatment?
  - how worried are you about the future? Have you talked about your concerns with significant others?
  - what is most important to you now? What makes your days enjoyable?
  - have you had past experiences of health care that influences how you would like to be cared for in the future?
  - how important is your independence? e.g. toileting, feeding, talking with family, socialising with others? Offer examples appropriate to the person
- Invite the person to write down their wishes or directions by completing the ACP document(s) they consider meet their needs:
  - Advance Health Directive (AHD)
  - Enduring Power of Attorney (EPoA)
  - Statement of Choices (SoC)
- Consider making a Queensland Health Acute Resuscitation Plan (ARP). See Resource 6.

2. Results

- Completed original documents remain with the person
- File copies of documents in the person's chart
- Send a copy to the Statewide Office of ACP (if not on the ACP Tracker). See Resource 7.

2.1 Advance Health Directive (AHD) for ACP purposes

Purpose	• Used in certain circumstances to provide directions about future health care and special health care • It can also be used to appoint an attorney for health matters
Type	• Legally binding
Completion	• Completed freely and voluntarily by a person who is > 18 years of age and who has capacity to understand the document they are signing and the powers it gives. See Resource 8.
Authorisation	• A doctor or Nurse Practitioner must complete Section 5, and the document must be witnessed by an eligible witness (Justice of the Peace, a Commissioner for Declarations, a lawyer or a notary public)
Activates	• When a person does not have capacity to make their own healthcare decisions. See Resource 8.
Changes	• The AHD should be reviewed regularly and when the person's condition or preferences change • Can be revoked by the person while they have decision-making capacity

See Resource 9. for ACP forms in Queensland

2.2 Enduring Power of Attorney (EPoA) for ACP purposes

Purpose	• Allows a person to legally appoint attorney(s) for personal, health or financial matters
Type	• Legally binding
Completion	• Completed freely and voluntarily by a person who is > 18 years of age and who has capacity to understand the document they are signing and the powers it gives. See Resource 8.
Authorisation	• Must be witnessed by a Justice of the Peace, a Commissioner of Declarations, a lawyer or a notary public
Activates	• For personal/health matters: – when the person does not have capacity to make their own decisions • For financial matters: – as specified by the person in the document, including when they do not have capacity to make decisions immediately, at a particular time, or in particular circumstances or occasions
Changes	• Can be revoked by the person while they have decision-making capacity

See Resource 9. for ACP forms in Queensland

2.3 Statement of Choices (SoC) for ACP purposes

Purpose	• A values-based form that records a person's views, wishes, and preferences for future health care • Used to guide or inform those who need to make health care decisions for a person who is unable to make those decisions themselves
Type	• Not legally binding and does not provide consent to health care in advance
Completion	• Form A: used by people who can make health care decisions for themselves • Form B: used for people who cannot make health care decisions for themselves. • Form B is completed by the person's legally appointed substitute decision-maker(s), or, if not applicable, person(s) in a close and continuing relationship with the individual. A person's healthcare providers should not complete the SoC on a person's behalf
Authorisation	• Signed by person completing the form, and their doctor or Nurse Practitioner
Activates	• When the person does not have capacity to make their own healthcare decisions. See Resource 8.
Changes	• It can be reviewed and updated as required to ensure it reflects a person's current wishes

See Resource 9. for ACP forms in Queensland

2.4 Queensland Health Acute Resuscitation Plan (ARP) for ACP purposes

Purpose	• A medical order that provides documentation of: – discussions regarding cardiopulmonary resuscitation (CPR) and ventilation – clinical authority to act on the order in an acute emergency – available and recommended treatments
Type	• Not a legal document and does not substitute for legal consent
Completion	• Completed by a medical practitioner/health professional for adults: – at risk of cardiac and/or respiratory arrest in the foreseeable future **or** – where death can be reasonably expected within 12 months
Authorisation	• Signed by a medical practitioner/health professional • Can be used by Queensland Health and Non-Queensland Health organisations. Usage is subject to that service's policies and procedures
Active for	• All clinicians exercise their clinical judgement when acting on an ARP: – at this admission/attendance **or** – until a specified date within 12 months **or** – for 12 months
Changes	• An MO must review a patient's ARP form: – when a patient presents to a Queensland Health service **or** – following attendance by Queensland Ambulance Service **or** if the patient: – regains capacity for decision-making **or** – changes their preferences for resuscitation **or** – has changes to personal circumstances (e.g. different substitute decision-maker), health status or nature of intended health care or outcome

See Resource 6. for ARP forms and resources in Queensland

3. Brief intervention

- If the person doesn't wish to discuss ACP wait until next visit
- For people with impaired decision-making capacity, enact their statutory ACP documents or use non-statutory ACP documents to guide discussions with substitute decision makers
- Integrate person-centred choices into medical treatment plans and involve other services to enable the person to access care in accordance with their preferences
- Encourage the person to provide copies of their documents to significant others and substitute decision makers
- For further information see Resource 4.

4. Referral

- With consent involve other health professionals in further discussions to continue the support process
- Refer to your local state Advance Care Planning support services who will:
  - provide information and resources about advance care planning
  - connect people to local advance care planning services
  - share documented health care wishes with clinicians and across services involved in a person's care e.g. GP's
- In Queensland the Office of Advance Care Planning is available for contact on 1300 007 227 or via email at: acp@health.qld.gov.au Monday to Friday 0800–1600

5. Follow-up

- Send a copy of Advanced Health Directives, Enduring Power of Attorneys, revocation documents, Queensland Civil and Administrative Tribunal Decisions and Statement of Choices to the Office of ACP to review and upload to the patient's Queensland Health hospital record (The Viewer) via:
  - Email: acp@health.qld.gov.au
  - Fax: 1300 008 22
  - Post: PO Box 2274, Runcorn, Qld 4113

ACP documents uploaded to the ACP tracker (in the Viewer) can be accessed by authorised clinicians across Queensland Health public hospitals, Queensland Ambulance Service, Mater Health; as well as general practitioners, medical specialists, nurses, midwives and pharmacists (external to Queensland Health) who have registered for access to the Health Provider Portal

Look for the pink ACP logo in the menu bar

A C P

- To create an account in the Health Provider Portal see Resource 10.
- The person can upload their ACP documents to their My Health Record if they wish

6. References

- All Chronic Conditions Manual references are available at the Office of Rural and Remote Health website

7. Resources

1. A multidisciplinary guide to identify those who may benefit from advance care planning
2. Aboriginal and Torres Straight Islander resources for clinicians approaching topics of death, dying and difficult conversations in a culturally sensitive way
3. Advance Care Planning Australia and My Care, My Choices: Advance Care Planning
4. ACP Tracker: The advance care planning information sharing portal
5. Palliative and end-of-life care framework – last 12 months of life
6. ARP forms, guidelines and tools in Queensland and ARPs via The Viewer/ieMR
7. Statewide Office of Advance Care Planning Checklist for ACP documents to be uploaded
8. The Queensland Capacity Assessment Guidelines 2020 to help understand capacity
9. Online writeable PDF ACP documents can be downloaded from My care, My Choices, printed ACP forms available upon request from the Office of ACP
10. The Health Provider Portal

Alcohol, tobacco and other drugs (adult)

Information [1–3]

- Asking about alcohol, tobacco and other drugs (ATODs) provides clinicians with an opportunity to promote healthy lifestyle behaviours and prevent or improve chronic conditions

Child safety notification

- See Child safety reporting, page 428 for suspicion of harm or neglect

Health check recommendations

- **All people > 15 years of age annually**

1. Procedure

- Ask the patient the ATODs questions. See Table 1.
- Provide brief intervention
- Determine if the patient requires a referral and place on a follow-up and recall register

Table 1. ATODs questions

Tobacco [2,3]	
Does the person smoke?	• If yes then continue with questions
Minutes after waking to having first cigarette?	
Number of cigarettes per day?	
Any cravings or withdrawal symptoms in previous quit attempts?	
Alcohol and drug use [1–3]	
Does the person drink alcohol or use drugs?	• If yes then continue with questions. Consider inhalants, injected drugs, prescription medicines, etc
Has the person ever felt they ought to cut down on their drinking or drug use?	
Have others been concerned or commented on their drinking or drug use?	
Have they felt worried about the level of drinking or drug use?	
Have they ever had a drink or used drugs first thing in the morning to steady their nerves or to get rid of a hangover?	

2. Results

- Provide brief intervention if the patient answers yes to using ATODs
- Praise successes if patient doesn't use ATODs

2.1 Tobacco questions [2,3]

- The tobacco questions can indicate dependence if a patient answers they:
  - smoke within 30 minutes of waking **or**
  - smoke more than 10 cigarettes per day **or**
  - have a history of withdrawal symptoms in previous quit attempts

2.2 Alcohol and drug use questions [2,3]

- Answering yes to any question identifies a patient who may have a substance abuse disorder
- Answering yes to 2 or more questions is considered clinically significant and requires referral

3. Brief intervention

- ATODs use is responsible for high global morbidity and mortality rates, specifically alcohol and tobacco
- Avoid minimising harmful behaviour or negative health effects
- Use a matrix of questions for patients to critically think about their ATODs use. See Table 2.
- Encourage the patient to:
  - talk to someone they feel comfortable with
  - seek help from the health service if they wish to quit or change their ATODs use
- Offer self-help and cessation support programs resources. See Resources
- See Alcohol reduction, page 24 and Smoking cessation, page 48

Table 2. Motivational questions

What are the good things about taking drugs, smoking and drinking alcohol?	What are the bad things about smoking, drinking alcohol or taking drugs?
• All my friends do it • Makes me look cool • Helps me unwind /relax • Gets me started • Tastes good • Keeps me awake • Gives me a boost	• Costs a lot of money • Makes my chest feel tight, short of breath when running, playing sport or climbing stairs • Becoming overweight • Hangovers • Makes me lazy, cough, gives me bad breath • Everyone bludges a smoke off me • Hate craving for a smoke • Causes cancer and damages the body • Trouble with police
What are the good things about NOT smoking, drinking alcohol or taking drugs?	**What are the bad things about NOT smoking, drinking alcohol or taking drugs?**
• Won't be breathless any more • Will have more money • Can save up for something special • Will feel stronger, healthier and live longer	• Friends may not want to spend time with me • Not looking cool • Weight gain

4. Referral

- If harmful drug taking behaviours are identified, with consent, refer to an appropriate source. See Table 3.

Table 3. Referral options

Queensland Health
• Medical officer, Health worker, registered nurse, psychologist or social worker • Child safety reporting, page 428 services • Mental Health Alcohol and Other Drugs Branch • Alcohol, tobacco and other drugs
Other services
• Aboriginal and Torres Strait Islander Legal Service (Qld) Ltd • Legal Aid Queensland • Act for Kids • Queensland Indigenous Family Violence Legal Service • Queensland Aboriginal and Islander Health Council (QAIHC) • Elder, minister or pastor • Headspace, the national youth mental health foundation • Quitline 13 78 48 or Quit smoking • Royal Flying Doctor Service nurse or doctor • School Principal or student guidance officer • True Relationships & Reproductive Health (True) • Kids Helpline or phone 1800 55 1800 • Alcohol and Drug Information Service on 1800 177 833 all hours • Turning Point online counselling service

5. Follow-up

- Place the patient on a recall register to monitor and support ATODs reduction
- Ensure all referrals are actioned
- Provide the patient with the next scheduled follow-up appointment

6. References

- All Chronic Conditions Manual references are available at the Office of Rural and Remote Health website

7. Resources

1. Queensland Government alcohol, tobacco and other drugs resources
2. Alcohol and Drug Information Service on 1800 177 833 all hours
3. Turning Point online counselling service
4. Quit HQ and Quit
5. National Alcohol Strategy 2019–2028
6. Smoking, nutrition, alcohol, physical activity (SNAP) A population health guide to behavioural risk factors in general practice 2nd edition
7. Quit phone apps available for download from Apple iTunes and Google Play stores
8. RACGP: Smoking cessation: a guide for health professionals
9. Australian Alcohol Guidelines revised
10. Cannabis Information and Support

Body measurements (adult)

Information [1–3]

- Undertaken to monitor risk of future chronic conditions allowing clinicians to promote health lifestyle behaviours

Health check recommendations

- **All people > 15 years of age annually**

1. Procedure

- Perform the measurement or ask the person the questions. See Table 1.
- Provide brief intervention if required
- Determine if the person requires a referral and place on a follow-up and recall register

Table 1. Age related body measurements

Measurement	Procedure
All those > 15 years of age	
Weight	• Weigh using stand-on scales
Height	• Measure height using stadiometer
BMI	• Calculate using formula (see 1.3 Calculating BMI)
Waist circumference	• Measure using flexible paper tape measure
Waist-to-height ratio	• Divide waist circumference by height in centimetres (cm)
plus for all those > 55 years	
Has the person had any weight loss without trying?	• Explore – over what timeframe? – how much weight loss? – is there a change to diet? – change in clothes size? – recent stressful event e.g. a death, loss of job, relationship breakdown, an illness, etc. – compare previous recorded weights

1.1 Measuring weight

- Ensure the stand-on scales are regularly calibrated
- Ensure person removes heavy clothing, jewellery, shoes, belt and wallet
- Zero and position person on scales with weight evenly distributed
- Record measurement to the nearest 0.1 kg

1.2 Measuring height

- Ensure the stadiometer is regularly calibrated
- Person to remove shoes and place head, back, buttocks and heels against the wall

- Ask them to stand straight with weight distributed evenly, heels together, looking forward with arms hanging freely by their sides
- Pull the stadiometer measuring plate down to the top of their scalp through any hair and record measurement to the nearest centimetre (cm)

1.3 Calculating BMI [1]

- Calculated as weight (in kilograms) divided by height (in metres) squared (kg/m^2)

BMI = weight in kilograms (kgs) ÷ height in metres squared (m^2)

- Record BMI as a percentage by plotting weight and height on a BMI chart or by using an online calculator. See Resource 1.

1.4 Measuring waist circumference

- Use a flexible paper measuring tape
- While standing straight, feet together and arms by sides, identify the persons waist i.e. mid-point between the base of the ribs and the top of the hipbone
- Place tape horizontal around the waist, snug against the skin (or light clothing) without pulling or compressing the skin
- Record measurement to the nearest centimetre (cm) as the person breathes out normally

1.5 Calculating waist-to-height ratio

- Divide waist circumference by height in centimetres (cm)

2. Results

Table 1. Thresholds for overweight and obesity [1–3]

Classification	BMI (kg/m^2)	Waist circumference (cm)		Waist-to-height ratio
		Women	Men	
Healthy range	**18.5 – 24.9** **18.5 – 22.9 ***	**< 80**	**< 94**	0.4 – 0.49
Overweight	25 – 29.9 23 – 27.49 *	80 – 88	94 – 102	0.5 – 0.59
Obese class I	30 – 34.9 27.5 – 32.4 *	> 88 > 80 *	> 102 > 90 *	> 0.6
Obese class II	35 – 39.9 32.5 – 37.4 *	≥ 115	≥ 125	> 0.6
Obese class III	> 40 ≥ 37.5 *	≥ 115	≥ 125	> 0.6

* Values recommended for Aboriginal and Torres Strait Islander and Asian populations

2.1 Weight loss

- Unintentional weight loss can be an indicator of an acute or chronic illness
- If person answers '**yes**' to recent unintended weight loss refer immediately for further investigations

3. Brief intervention [1–5]

- Discuss the association between high body measurements and risk of chronic conditions e.g. Coronary heart disease, page 264, Diabetes, page 304, some cancers etc.
- Discuss a weight loss > 5% reduces these risks
- Provide Diet and nutrition, page 29 related resources. See Resources 2–8.
- See Overweight and obesity (adult), page 366

4. Referral

- Refer to the MO/NP or dietitian for further investigations if:
  - records indicate or the person answered '**yes**' to unintentionally losing weight
  - thresholds of overweight or obesity are identified. See Table 2.

5. Follow-up

- Place the patient on a recall register if required
- Ensure all referrals are actioned
- Provide the patient with details of the next scheduled follow-up appointment

6. References

- All Chronic Conditions Manual references are available on the Office of Rural and Remote Health website

7. Resources

1. Online Heart Foundation BMI calculator
2. Exercise and weight loss monitoring chart and Queensland Health's Weight loss planning
3. Language Matters: Guidelines for Talking about Obesity
4. Hunger level scale
5. Fats, oils and heart health
6. National Heart foundation Nutrition Position Statements
7. My health for life and CSIRO Total wellbeing diet
8. The Queensland Governments Staying healthy diet and nutrition resources and Dieting and weight management guidance

Clinical measurements (adult)

Information

- Undertaken to monitor, identify and address chronic conditions and provide clinicians with an opportunity for Lifestyle modifications, page 18 education

Health check recommendations

- **All people > 15 years of age opportunistically**
- **All Aboriginal and Torres Strait Islander people > 15 years of age annually**
- **Perform annual Australian cardiovascular disease risk calculator, page 425 on all Aboriginal and Torres Strait Islander people from 30 years and all others from 45 years opportunistically**

1. Procedure

- Ask the person the questions and perform the measurement as per Table 1.
- Be prepared to explore answers further
- Provide brief intervention and resources if required
- Determine if the person has measurements outside of normal limits. If so, make a referral and place on a follow-up and recall register

Table 1. Clinical measurement questions for adults [1–3]

Assess	Explore
Any shortness of breath/wind?	• Measured over 1 minute • Does the person get breathless: – laying flat, at rest, gentle walking, climbing stairs? – waking at night? • Does the person snore when sleeping or have sleep apnoea? • Is the breathing laboured? Wheeze? Gurgles?
Heart rate **Heart rhythm**	• Measured over 1 minute • Any palpitations? racing heart? abnormal heart beats?
Blood pressure	• Any painful or pounding headaches? • Perform an Australian cardiovascular disease risk calculator, page 425 on all Aboriginal and Torres Strait Islander people > 30 years

1.1 Heart rate and rhythm

- Auscultate heart rhythm and sounds if experienced. See Resource 1.

1.2 Taking a blood pressure (BP) [1,2]

- Patient to avoid caffeine, cigarettes and exercise for 30 mins prior to measuring
- Sit in a quiet comfortable room. Remain seated and relaxed for 3–5 mins
- Rest arm on table, mid-arm at heart level, legs uncrossed and feet flat on floor
- Use a calibrated sphygmomanometer with appropriate sized cuff (smaller cuff overestimates and larger cuff underestimates BP)

- Take 3 measurements with 1 min between each. Measure to the nearest 2 mmHg
- If initial assessment, measure on both arms. If BP varies > 5 mmHg use the arm with the higher reading for all subsequent measurements
- For symptoms of postural hypotension (feeling dizzy, light headed or queasy when standing, sitting or lying) and for elderly patients or those with Diabetes, page 304, measure BP both sitting and after standing for 1 minute and again after 3 minutes

2. Results

2.1 Breathing [3]

- A normal resting adult respiratory rate is 12–20 breaths per minute (bpm)
- Breathing should be regular with no rasping, crackling, wheezing or gurgling noises
- The person should not get breathless at rest, walking short distances or when waking at night
- If a person answers '**yes**' to snoring or sleep apnoea, assess for daytime sleepiness and OSA risk by using a validated tool. See Resource 2.

2.2 Heart rate and rhythm [3]

- A normal resting adult heart rate is 60–100 bpm
- The heart rhythm should be regular and consistent
- Perform a 12 lead ECG on a person with:
  - slow heart rate (bradycardia) is a heart rate < 60 bpm
  - rapid heart rate (tachycardia) is a heart rate > 100 bpm
  - any irregular heart rate (arrhythmias)

2.3 Blood pressure (BP) [1,2]

- A normal resting adult BP is < 130/85
- Consider a raised BP due to the assessment itself; 'white coat' hypertension
- Record results of Australian cardiovascular disease risk calculator, page 425 as high, moderate or low risk

3. Brief intervention

- Brief intervention focuses on Lifestyle modifications, page 18

3.1 Breathing [3]

- Undertaken to identify any underlying respiratory and cardiac issues attributed to exposure to environmental irritants (e.g. cigarette smoke), chest infections or congenital abnormalities
- Snoring and OSA is associated with multiple chronic conditions including Chronic obstructive pulmonary disease, page 255, Asthma (adults and children > 12), page 204, Bronchiectasis, page 233 and Overweight and obesity (adult), page 366

3.2 Heart rate and rhythm [3]

- Listening to (auscultating) the heart can provide information about the condition of the valves and presence of anatomical defects caused by Rheumatic heart disease, page 406, previous MI, untreated Hypertension, page 345 or substance use

3.3 Blood pressure (BP) [1,2]

- The measurement of pressure of blood against blood vessel walls
- Hypertension, page 345 develops gradually over many years and can cause and worsen underlying chronic conditions
- Record results as **high, moderate or low risk** and provide interventions, goals and follow-up based on cardiovascular risk of Australian cardiovascular disease risk calculator, page 425

4. Referral

- Refer to the *Primary Clinical Care Manual* for BP ≥ 160/100, a variation of > 20 mmHg between arms or patient complains of chest pain
- Refer to a sleep specialist if a patient scores highly for OSA
- Refer to the MO/NP if:
  - abnormal breathing issues are identified
  - tachycardia, bradycardia or arrhythmias, along with a 12 lead ECG
  - BP varies between arms by > 15 mmHg
  - SBP reading ≤ 100
  - BP ≥ 140/90; Hypertension, page 345
  - patient Australian cardiovascular disease risk calculator, page 425 is high or moderate
  - the patient or clinician have any concerns
- Review any patient comorbidities in relation to above

5. Follow-up

- Place the person on a recall register if required
- Ensure all referrals are actioned
- Provide the person with details of the next scheduled follow-up appointment

6. References

- All Chronic Conditions Manual references are available on the Office of Rural and Remote Health website

7. Resources

1. Practical Cardiac Auscultation Reference Guide
2. The Epworth Sleepiness Scale and STOP-Bang questionnaire

Cognition and recall

Information [1–3]

- Undertaken to identify early neurological deficits such as Dementia, page 271, requiring further investigation

Health check recommendations

- **All adults > 55 years of age**

1. Procedure

- Ask the person the questions and explore as per Table 1.
- With consent, also consider asking significant others
- Provide brief intervention if required
- Determine if the person requires further assessment, make a referral and place on a follow-up and recall register

Table 1. Cognition and recall questions [1]

Questions	Explore
Do you have any concerns about your memory or thinking?	• Forget taking medicines, appointment dates, conversations?
Is anyone in your family worried about your memory or thinking?	• Repeating things to you? Asking if you recall recent events?

2. Results [2,3]

- If person answers '**yes**' perform further cognitive assessment using:
  - the Kimberley Indigenous Cognitive Assessment (KICA) Screen **or** KICA Carer used for Aboriginal and Torres Strait Islander people > 45 years of age and followed by cognitive assessment with the KICA-Cog tool **OR**
  - the Mini Mental State Examination (MMSE) and the Rowland Universal Dementia Assessment Scale (RUDAS) **OR**
  - the General Practitioner (GP) assessment of cognition (GPCOG) used by GPs for the general population **OR**
  - the Functional Activities Questionnaire (FAQ) **or** the Barthel Index to assess a person's activity of daily living function and level of disability
  - See Resource 1. for all cognitive screening assessment tools
- Refer to MO/NP with above screening results

3. Brief intervention

- Dementia, page 271 is a condition associated with many different diseases characterised by the impairment of brain functions including language, memory, perception, personality and cognitive skills

- Provide support Resources 2.

4. Referral

- Refer to MO/NP or gerontology services for further assessment if:
  - the person answers '**yes**' to any of the questions
  - further screening tools identify a cognitive deficit
  - the person shows confusion for which a cause cannot be determined
  - the person's behaviour has notably changed (witnessed or reported by family)

5. Follow-up

- Place the person on a recall register if required
- Ensure all referrals are actioned
- Provide the person or carer with details of the next scheduled follow-up appointment

6. References

- All Chronic Conditions Manual references are available on the Office of Rural and Remote Health website

7. Resources

1. Cognitive screening and assessment tools
2. Dementia Australia support services and Forward with dementia
3. Let's CHAT Dementia Webinar Series

Continence and elimination (adult)

Information [1–5]

- Undertaken to identify and address the varied conditions associated with incontinence to improve a persons social-emotional wellbeing and quality of life

Health check recommendations

- **All women > 25 years annually or earlier for those who have birthed**
- **All men > 55 years annually**

1. Procedure

- Ask the questions and explore further if required. See Table 1.
- Provide brief intervention
- Determine if the person requires a referral and place on a follow-up and recall register

Table 1. Continence questions for adults

Questions	Explore
Does the person have any urine or bowel leakage?	• When sneezing, coughing or lifting? • When jogging, exercising or bending down • Any sense of urgency or won't make it?
Does the person pass urine frequently?	• More than twice at night? • More than 6 times during the day?
Does the person have any difficulty passing urine?	• Getting urine out? • Difficulty starting to urinate? • Stream that starts or stops • Sensation of incomplete emptying
Does the person have any problems with constipation or faecal loss?	• Loose bowels or diarrhoea • Hard faeces or constipation

2. Results

- If the person answers '**yes**' to any question, explore further. See Table 2.
- Use screening tools to help gain clarity:
  - the Rome III Diagnostic Criteria for Functional Gastrointestinal Disorders
  - the Bristol Stool Chart
  - see Resource 1.
- Provide brief intervention and make a referral

Table 2. Further exploration of incontinence
Pain or discomfort in lower pelvic region? Any straining/grunting when passing faeces?
Recent unexplained weight loss? Without trying and without reason?
Recent sudden change in bowel habit? Going to the toilet more or less? Hard, runny, soft or watery? Size, time, colour and amount? Passing more wind?
Pelvic mass? Lump in the stomach, pelvis or groin? Scrotal swelling in men?
Rectal bleeding? Blood in the stool or in the toilet bowl?
Persistent diarrhoea? Runny, soft, watery stool that does not go away? For how long? Smelly?
Haematuria? Urinalysis positive for blood in the urine. Red or pink urine
Urinary tract or other urogenital infections? Stinging or burning sensation? Frequency? Smelly or cloudy urine? Pain in lower back or stomach area? Feeling unwell with or without a fever? Any vaginal discharge in women or urethral discharge in men?
History of pelvic surgery or irradiation? Past operation to genitalia?
Major pelvic organ prolapse? Vagina or bowel protruding?

3. Brief intervention [1–5]

- The involuntary loss of urine or faeces due to a failure of functional control over elimination is embarrassing, affecting social-emotional wellbeing, often requiring high-care needs
- Incontinence occurs in 1.5% of Australian population. 70% of those improve with conservative treatment
- Causes of incontinence are varied and include:
  - age and gender
  - childbirth
  - prostate problems
  - hysterectomy
  - urinary tract infections
  - Diabetes, page 304
  - neurological disorders
  - Dementia, page 271
  - menopause
- Begin a bowel or bladder diary to provide the continence advisor. See Resource 2.
- Provide Resources 3–5. to assist with the prevention and management of bladder and bowel problems, including the National Continence Helpline (1800 33 00 66)

4. Referral

- Refer to the *Primary Clinical Care Manual* to exclude urinary tract infections
- Refer to your local continence advisor or women's health nurse to support:
  - with continence assessment issues
  - advise on the use of aids, appliances or support services. See Resource 6:
    - Medical Aids Subsidy Scheme (MASS) for continence aids
    - Continence Aids Payment Scheme (CAPS) to assist with continence aid costs
- Refer to the MO/NP to manage a prolapse or continence issues. See Resource 7.

5. Follow-up

- Place the person on a recall register if required
- Ensure all referrals are actioned
- Provide the person with details of the next scheduled follow-up appointment

6. References

- All Chronic Conditions Manual references are available on the Office of Rural and Remote Health website

7. Resources

1. The Rome III Diagnostic Criteria for Functional Gastrointestinal Disorders and the Bristol Stool Chart
2. Bladder or bowel diary
3. The Continence Foundation of Australia
4. Information to assist with the prevention and management of bladder and bowel problems
5. Prostate Cancer Foundation of Australia or free call 1800 220 099 or email enquiries@prostate.org.au
6. Medical Aids Subsidy Scheme (MASS) and Continence Aids Payment Scheme (CAPS)
7. Resources for clinicians to manage incontinence issues

Domestic and family violence

Information [1–3]

- **Includes physical, psychological, emotional, financial material, coercive control, sexual abuse and neglect**
- Identifying domestic and family violence (DFV) early allows for clinicians to support people to lead safe lives by preventing harm from violence
- For those with low functional capacity consider Advance Care Planning, page 141 to assist with a persons long term care wishes

Health check recommendations

- **All adults > 15 years of age annually**

1. Procedure

- Ask the questions in Table 1.
- Identify if the person is at risk of harm or violence
- The person may or may not disclose DFV during early presentations
- Speak with the person alone and in private
- When exploring ask direct questions
- Listen to and acknowledge what the person is saying
- Validate their experience and reassure them that experiencing violence is not their fault, they have a right to feel safe, and that help is available
- Provide brief intervention and resources as required
- Determine if the person requires a referral and place on a follow-up and recall register

Table 1. DFV question

Question	Explore
Is the person exposed to violence?	• Verbal abuse, financial or material restrictions, physical harm, coercive control, social isolation, withholding basic necessities • Who is the perpetrator? • Who else knows about it?

2. Results [1–3]

- All people should be free of all forms of violence

3. Brief intervention [1–3]

- Everyone is at risk of family, domestic and sexual violence, especially vulnerable groups; women, children and the elderly
- **Physical abuse:** The infliction of pain or injury e.g. slapping, hitting, kicking, force feeding, restraint, striking with an object
- **Psychological emotional abuse:** The infliction of mental anguish e.g. verbal aggression, threats, threat of institutionalisation, social isolation, humiliating,

demeaning or demoralising statements

- **Financial material abuse:** The illegal or improper exploitation or use of funds or resources e.g. theft of money or cheques, coercion to deprive an older person of their assets
- **Coercive control:** A pattern of abusive behaviours over time that hurt, humiliate, isolate, frighten, or threaten another person in order to control or dominate them
- **Sexual abuse:** Non-consensual contact of any kind e.g. suggestive talk, forced sexual activity, touching or fondling of a competent or non-competent person
- **Neglect:** The intentional or unintentional refusal or failure of a person or designated caregiver to meet the needs of a person's wellbeing e.g. failure to provide adequate food, clothing, shelter, medical care, hygiene or social stimulation
- Develop a safety plan with the person. See Resource 1.
- Ask the person at each presentation about abuse
- Repeated presentations over time indicates a pattern of violence or escalation
- Provide Resources 2–6.

4. Referral

- If you have any concerns about a person refer to the MO/NP
- Where immediate protection for person is required consult MO/NP/social worker and with consent, refer to:
  - local police service
  - refuge/emergency accommodation
  - local sexual assault service if a sexual assault has occurred
  - mental health services if person is at risk of suicide or self-harm
- For children at risk see Child safety reporting, page 428
- See Resources 2–5. for further support and referral options

5. Follow-up

- Place the person on a recall register if required
- Ensure all referrals are actioned
- Provide the person with details for the next scheduled follow-up appointment

6. References

- All Chronic Conditions Manual references are available on the Office of Rural and Remote Health website

7. Resources

1. Violence safety plan and The Domestic Violence Crisis Service ACT comprehensive safety plan
2. National sexual assault contacts and Queensland sexual assault contact resources
3. The Elder Abuse Helpline and the Queensland Elder Abuse Prevention Unit
4. The Public Guardian
5. Queensland Health Victim Support Service
6. DFV connect

Ears and hearing (adult)

Information [1–3]

- Undertaken to identify, manage and prevent ear disease and hearing loss

Health check recommendations

- **All adults > 15 years of age if clinically indicated**
- **All Aboriginal and Torres Strait Islander > 15 years of age annually**

1. Procedure

- Ask the questions and perform the corresponding procedure. See Table 1.
- Provide brief intervention as required
- Determine if the person requires a referral and place on a follow-up and recall register. See Flowchart 1.

Table 1. Questions and procedures for adult ears and hearing

Questions	Explore
Do you have any difficulty hearing?	• If '**yes**' perform otoscopy, tympanometry and audiometry. See Flowchart 1. • Do not do tympanometry if pain or discharge
Do you have any ear pain or discharge?	

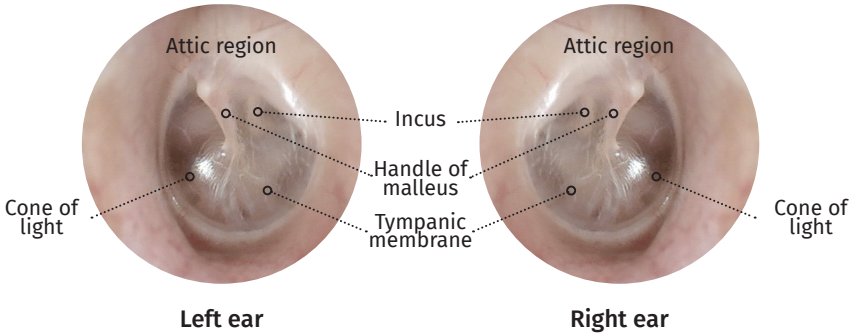
1.1 Performing otoscopy [1–3]

- Otoscopy is the visual examination of the ear canal and eardrum. See Figure 1.
- If there is pain or notable discharge from the ear(s) do not proceed. Refer to the *Primary Clinical Care Manual*
- Observe the bone behind the ear (mastoid) and the area under the ear for infection, swelling or tenderness
- Check the pinna for size, shape, colour or lesions
- Observe the ear canal for:
  - discharge
  - redness/swelling
  - fungal infections
  - lumps or bony growths
  - foreign bodies
  - wax
  - fluid
- Inspect the eardrum (tympanic membrane) for:
  - colour:
    - transparent and shiny is normal
    - dull or opaque represents fluid behind eardrum
  - cone of light (reflection):
    - right ear at 5 o'clock and left ear at 7 o'clock
    - reflections elsewhere indicates bulging

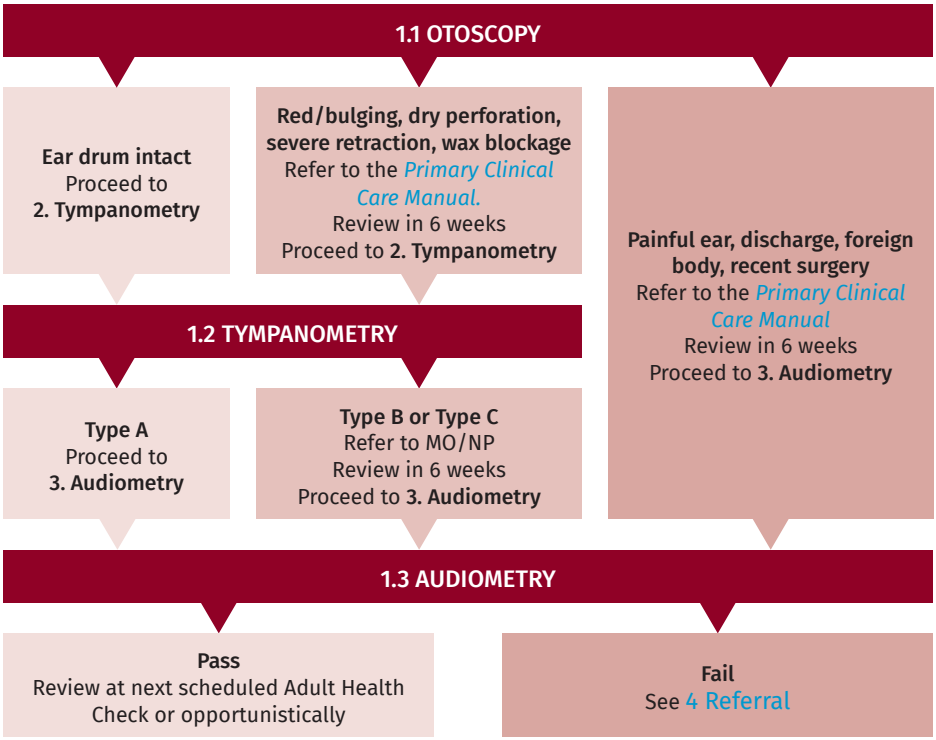
- the handle of the malleus
- perforations
- abnormalities of the attic region e.g. perforation, mass, growth

• Repeat procedure for the other ear

Figure 1. Visual representation of the eardrums



Flowchart 1. Hearing health check review and referral procedure

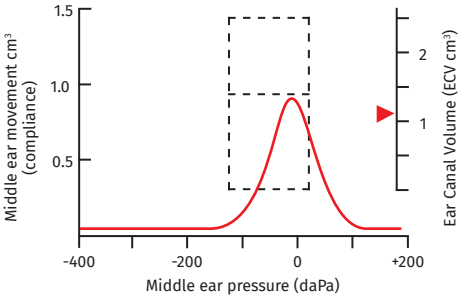


1.2 Performing tympanometry [1–3]

- Tympanometry is a test of middle ear function and measures:
  - ear canal volume (ECV)
  - middle ear pressure (daPa)
  - middle ear compliance or movement
  - See Resource 1. for further tympanometry support
- If a person has had recent surgery, pain or if there is a perforation or discharge from the ear(s) do not proceed. Refer to the *Primary Clinical Care Manual*
- A "Leak" or "Blockage" error can occur for many reasons:
  - clogged probe tip
  - probe tip too large or small
  - head movements or swallowing
  - probe tip against the ear canal wall
  - debris, foreign body or wax in ear canal
- To rectify try:
  - a different sized probe tip
  - cleaning probe tip
  - reposition the probe tip in the ear canal

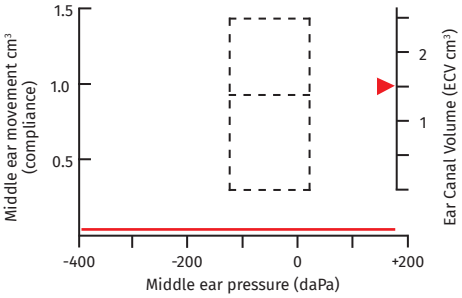
Figure 2. Tympanometry traces [1–3]

Type A Normal
- A peak within the normative values box
- Normal ear canal volume (ECV) = 0.3 to 1.6 cm^3
- Normal middle ear movement (compliance) = 0.2–1.5 cm^3
- Normal middle ear pressure = +50 to -100 daPa



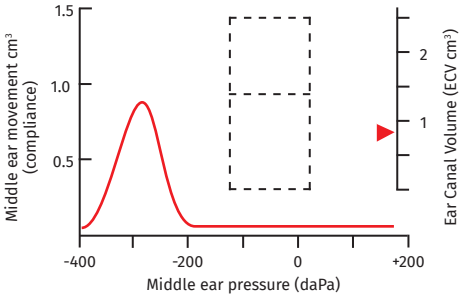
Type B Fail
- A flat line or no peak indicates no middle ear movement or pressure
- It is important to observe the ear canal volume when interpreting Type B findings

Possible causes
- Otitis media with effusion (middle ear fluid)
- Eardrum perforation (hole) or grommet indicated by large ear canal volume
- Ear canal blockage indicated by small ear canal volume
- Wax



Type C Fail
- A peak to the left of the normative values box
- Normal ear canal volume
- Normal middle ear movement
- Negative middle ear pressure

Possible causes
- Eustachian tube not working properly



1.3 Performing audiometry [1–3]

- Audiometry measures the ability of the ear to:
  - detect the pitch of a sound as hertz (Hz)
  - detect the loudness of a sound as decibels (dB)
- Place headphones on patient. Test one ear at a time
- Set hertz (Hz) dial to 4000 Hz and decibels (dB) to 50 dB. Test
- The person '**fails**' if they do not indicate they hear a sound
- If the person indicates they can hear the sound then reduce to 35 dB and repeat
- If the person indicates they can hear the sound then reduce to 25 dB and repeat
- Repeat these steps until the person no longer responds
- Record the lowest perceived dB the person responds to twice
- Repeat for the other ear
- Repeat the procedure for both ears at 2000 Hz and 1000 Hz
- To '**pass**', the person needs to respond twice to 25 dB at 1000, 2000 and 4000 Hz

2. Results

- All adults should have
  - clean ears, free of pain, discharge or infection
  - pass all tests and hear clearly

3. Brief intervention [1–3]

- Ear disease and hearing loss is high in Aboriginal and Torres Strait Islander adults, related to frequent childhood ear infections, contributing to poor education, unemployment and justice system contact
- Provide preventative information:
  - hand and face washing
  - regular nose blowing
  - avoid cigarette/vape smoke
  - avoid loud noises (e.g. earbuds or headphones)
  - only swim in running water or swimming pools
  - maintain healthy Diet and nutrition, page 29
  - avoid putting anything in the ears (including cotton buds)
  - if concerned present to health centre

4. Referral

- If you have any concerns about a person's ability to hear refer to MO/NP and email *Hearing Australia*. See Resource 2–3.
- If the person has ear pain or discharge, manage according the *Primary Clinical Care Manual*

5. Follow-up

- Review as per Flowchart 1.
- Place the person on a recall register if required
- Ensure all referrals are actioned
- Provide the person with details for the next scheduled follow-up appointment

6. References

- All Chronic Conditions Manual references are available on the Office of Rural and Remote Health website

7. Resources

1. Hearing Australia's Tympanometry module for primary health providers
2. Hearing Australia email
3. Online referral to Hearing Australia

Eyes and vision (adult)

Information [1,2]

- Performed to identify and manage visual impairments, particularly among older people, where falls and reduced quality of life are a common outcome

Note

- Some occupations require colour blindness assessment e.g. police, pilots, electricians, heavy vehicle drivers and mariners
- If a person obtains **> 4 errors** on the 24 plate Ishihara test (Resource 1.), refer to MO/NP

Health check recommendations

- **All adults > 15 years of age if clinically indicated**
- **All Aboriginal and Torres Strait Islander people > 15 years of age annually**

1. Procedure

- Ask the questions as per Table 1.
- Determine if the person requires further assessments and undertake if required
- Provide brief intervention
- Determine if the person requires a referral and place onto a follow-up and recall register

Table 1. Eyes and vision questions and procedures for adults

Questions	Procedure
Any problems with their vision or eyes ± glasses or contact lenses?	• If **'yes'** to any question then proceed to review: – eye appearance – visual acuity (VA) – near vision – eye movement • See Resources 2–6.
Any history of eye surgery?	
Are things blurry when held in their hands or far away?	
Any inturned eyelash touching the eyeball or evidence of being plucked?	
Does the person have diabetes or hypertension?	

1.1 Eye appearance [3–5]

- With an ophthalmoscope visualise external and anterior eye:
  - symmetry of pupils
  - abnormal movements (nystagmus)
  - lift each eyelid with thumb and check for:
    - cysts
    - styes
    - droopy eyelids (ptosis)
    - inturned eyelash that touches the eyeball
    - evidence of inturned eyelash being plucked

  - conjunctiva and cornea for:
    - redness
    - swelling
    - discharge
    - pain
    - fleshy overgrown membranes
    - teary or watery
  - sclera for jaundice (Hepatitis B, page 337), bloodshot or haemorrhage (trauma)
- Ophthalmoscopy of the lens and retina:
  - ask person to focus on a distant point e.g. your ear, the wall
  - direct the ophthalmoscope light at the pupil from 30 cm away
  - look through the scope slowly moving back and forth, up and down until you see a red reflex (the blood at the rear of the retina) reflection (red flash)

1.2 Assessing VA [3–5]

- Test while patient wearing prescribed glasses or contact lenses
- Place a Snellen eye chart (or Tumbling E eye chart for those with limited literacy) 6 metres away in a well lit area at eye level
- Note the numbers next to each line on the chart:
  - the first number represents metres the person is standing from the chart i.e. 6
  - the second number on each successive line increases, mimicking increased distance in metres, with smaller lettering e.g. 9m, 12m, 18m, 24m, 36m or 60m
- Tell the person to state the letter you point to **or** if using the Tumbling E chart, show how 3 fingers makes an 'E' and to hold these fingers left, right, up or down to indicate what they see
- Cover one eye with occluder and begin test
- Start at the top line and point clearly to each letter
- Allow the person adequate time to respond

Observe behaviours that indicate the person is having difficulty seeing e.g. leaning forward, frowning, blinking or squinting

- Progress along each line until the person can no longer identify letters
- If they get > 3 letters incorrect on a line, stop, go up a line and repeat
- Allow 2 attempts
- Record the last line the person can read without making any mistakes
- Cover the other eye and repeat process

All Aboriginal and Torres Strait Islander people with diabetes should have an annual visual acuity and retinal assessment by a trained assessor

1.3 Near vision test [3–5]

- Use any normal sized print at a comfortable reading distance
- Ascertain a person's ability to read (see) at this distance

1.4 Eye movement [3–5]

- Hold an object (e.g. pen) 30 cm away and slowly move it up, down, left and right in an 'H' pattern
- Encourage person to look at the object without moving their head
- Observe whether the eyes track the object equally and bilaterally

2. Results

2.1 Eye appearance results

- The eyes should appear:
  - conjunctiva white clear, clean, free of redness, swelling and pus
  - pupils symmetrical
  - eye movements equal and intentional
- No red reflex can indicate an obstruction between the pupil and retina e.g. a tumour, congenital cataract or haemorrhage
- Trichiasis is present if:
  - at least one eyelash touches the eyeball or
  - evidence of recent plucking of in-turned eyelashes

2.2 VA results

- Normal VA for adults is 6/6

2.3 Near vision test results

- All adults should read at a comfortable distance (+/- glasses) without squinting or holding the book at arms length

2.4 Eye movement results

- The eyes should track the object smoothly and equally in all directions without the head moving

3. Brief intervention [3–5]

- Visual impairment is common in older people and is associated with falls and reduced quality of life
- Older people often do not report visual problems to medical services
- Incidence of visual impairment, blindness and trichiasis is highest for Aboriginal and Torres Strait Islander adults
- Encourage annual visual assessments especially if driving
- The MO/NP or optometrist can remove one or more eyelashes as a temporary measure to prevent trichiasis progressing if patient:
  - is waiting for surgery
  - refuses surgery
  - understands that broken or regrowing eyelashes risks corneal damage
- See Resources 2–6.

4. Referral

- Refer to the MO/NP, optometrist or ophthalmologist for any:
  - redness, puss or swelling
  - abnormal eye appearance
  - reported blurriness
  - squinting to read
  - holding text away at arm's length to read
  - uneven eye movement
  - the person's VA in either eye is outside normal range (6/9, 6/12, 6/18, etc.)
  - eligible person requiring new glasses under state specific Spectacle Supply Scheme. See Resource 7.
  - person obtains > 4 errors on the 24 plate Ishihara colour blindness test
- Refer all cases of trichiasis to an ophthalmologist urgently to preserve the person's sight

5. Follow-up

- Place the person on a recall register if required
- Ensure all referrals are actioned
- Provide the person with details for the next scheduled follow-up appointment

6. References

- All Chronic Conditions Manual references are available on the Office of Rural and Remote Health website

7. Resources

1. 24 plate Ishihara colour blindness test
2. Queensland Health Eye Health
3. Health Direct Eye Health
4. AIHW: Eye health in Aboriginal and Torres Strait Islander people
5. Vision Australia
6. Indigenous Eye Health Unit
7. Spectacle Supply Scheme - eligibility and how to apply

Functional capacity and safety

Information [1–3]

- Monitoring functional capacity and safety as people age, allows for early intervention to ensure a continued safe healthy quality of life

Health check recommendations

- **All adults > 50 years of age annually**

1. Procedure

- Ask the questions and explore as per Table 1.
- Identify any risks of harm due to deteriorating capacity or risky episodes. Be mindful of those at risk of Domestic and family violence, page 161
- Provide brief intervention and resources as required
- Determine if the person requires a referral and place onto a follow-up and recall register

Table 1. Functional capacity and safety questions

Questions	Explore
Is the person able to care for themselves?	• Which activities of daily living are difficult and why?
Has the person had any falls in the last 3 months?	• What were they doing at the time? • How did it happen? • Were they hospitalised? Have they recovered fully?
Can the person manage their own medicines?	• Are they taking medicines correctly? • Do they know what the medicines are for? • Are there any side effects? • Are there too many prescriptions? Too many medicines?
Does the person have anyone to help them?	• Is there someone available to support them? Who? • Do they need or want a carer? • Does the carer care for someone else? Is the person difficult to care for? • Does the carer receive carer's support assistance or allowance?

2. Results

- Everyone should:
  - have a safe environment or have the strength and ability to avoid falling
  - have the ability to understand and take their medicines safely
  - be able to self-care, or if unable, have a socially-emotionally and financially supported carer

3. Brief intervention

- Living independently without support can be difficult. Ensure patient is registered with My Aged Care services. See Resource 1.
- As people age they become less able to perform daily tasks including managing finances or medicines, moving safely, dressing, toileting and eating
- Always assess general safety at home, especially for risks associated with falling e.g. trip hazards from mats, uneven surfaces, steps
- Always encourage Diet and nutrition, page 29 and Physical activity and sleep, page 34

3.1 Self-care [1]

- Being unable to self-care is associated with falls, frailty and undernourishment. Consider Dementia, page 271 as a cause
- Regular assessment of Activities of Daily Living (ADLs) and Instrumental Activities of Daily Living (IADLs) can identify health and safety requirements. See Table 2.
- For those struggling with IADLs consider Advance Care Planning, page 141 to assist with a persons wishes for long term care

Table 2. ADL versus IADL [2]

Activities of Daily Living	Instrumental Activities of Daily Living
Basic self-care tasks: • Getting in and out of bed • Eating meals • Going to the toilet • Showering or bathing • Dressing	**Tasks requiring complex thinking and organisational skills:** • Household cleaning and maintenance • Shopping • Preparing meals • Managing finances • Arranging appointments • Taking medicines

3.2 Falls [1–3]

- Knowing an individual's risk of falling provides opportunities to prevent them occurring by identifying a person's physical ability and their home environment
- Screen for individual falls risk. See Resource 2.
- Review medicines and minimise sedatives especially benzodiazepines
- A balance and strength group assists with gross motor stability and co-ordination
- A home assessment identifies modifications required to minimise slips and falls

3.3 Medication safety [1–3]

- Medication safety ensures a person avoids overdosing, falls, polypharmacy (taking > 5 medicines), cognitive impairment and complacency
- Simplify medication access using blister/webster packs, electronic dispensers or provide medication prompting (by clinician, carer or third party service)
- Ensure an accredited pharmacist provides a home medicines review and the person's response to them. See Resource 3.

3.4 Carer support [1–3]

- Discuss care options, involving family in the process if appropriate
- Caring for someone can be a source of burden, stress, isolation or abuse, especially if the person has become violent or agitated

- Assess and address the needs of the carer. See Engaging our patients, page 19
- Provide emotional and practical support services for carers to address their own needs. See Resources 4.
- Involve carers in all service co-ordination and interventions including education, visiting specialists, and telehealth, telephone or online service provision

4. Referral

- Refer to:
  - MO/NP for further assessment if self-care appears compromised. See Cognition and recall, page 156, Dementia, page 271
  - occupational therapist for falls risk assessment and home modifications. See Resource 2.
  - physiotherapist or exercise physiologist for strength and balance group
  - local pharmacist for Home Medicines Review services to rationalise safe patient medicines use
  - respite and carer support services for carers. See Resource 4–5.
  - patient cleaning, assistive aids or support care services. See Resource 6.

5. Follow-up

- Place the person on a recall register if required
- Ensure all referrals are actioned
- Provide the person with details for the next scheduled follow-up appointment

6. References

- All Chronic Conditions Manual references are available on the Office of Rural and Remote Health website

7. Resources

1. My Aged Care services
2. Individual falls risk screening
3. Home Medicines Review
4. Carers Australia and Carer Gateway
5. Respite services
6. myagedcare and Medical Aids Subsidy Scheme (MASS)

Nutrition (adult)

Information [1–4]

- Performed to identify poor eating habits and prevent future chronic conditions by providing Diet and nutrition, page 29 brief intervention

Health check recommendations

- **All people > 15 years of age opportunistically (at least every 2 years) or when clinically indicated**
- **All Aboriginal and Torres Strait Islander people > 15 years of age annually**

1. Procedure

- Ask the person the questions according to Table 1.
- Establish the person's dietary intake and provide brief intervention
- Determine if the person requires a referral and place on a follow-up and recall register

Table 1. Age related nutrition questions

Questions	Explore
All people > 15 years of age	
What did the person eat and drink yesterday?	• Asking what was eaten the previous day helps determine a dietary pattern • For details of serve sizes and examples see Diet and nutrition, page 29
Is the person always able to access food?	
plus for all those > 55 years of age	
How many meals did the person eat yesterday?	• Is there enough food? Access to food?

2. Results

- To have the best chance of living a healthy chronic conditions free life, all people are recommended to maintain a healthy Diet and nutrition, page 29

3. Brief intervention

3.1 Encourage [1–4]

- Plenty of varieties of fruit and vegetables
- Wholegrain or high fibre breads, cereals, rice, pasta, noodles, polenta, couscous, oats, quinoa and barley
- Lean meat and poultry, fish, eggs, tofu, nuts, seeds, legumes and beans
- Reduced fat milk, yoghurt, cheese and other dairy alternatives
- Drink plenty of water as the only fluid intake
- Foods containing polyunsaturated and monounsaturated fats (olive oils, spreads,

nut butters/pastes and avocado). Provide Resources 1-4.

3.2 Avoid or limit [1–4]

- Foods high in saturated fat; biscuits, cakes, pastries, pies, processed meats, hamburgers, pizza, fried foods, potato chips and other savoury snacks
- Foods containing added salt
- Drinks high in sugars; energy, sports and soft drinks, cordials, fruit juice, vitamin waters
- Alcohol. Women who are pregnant, planning a pregnancy or breastfeeding, not drinking alcohol is the safest option. Provide Resources 1-4.

4. Referral

- Refer to community nutrition team and dietitian

5. Follow-up

- Place the person on a recall register if required
- Ensure all referrals are actioned
- Provide the person with details for the next scheduled follow-up appointment

6. References

- All Chronic Conditions Manual references are available on the Office of Rural and Remote Health website

7. Resources

1. Eat for Health resources
2. Australian Dietary Guidelines
3. Queensland Government diet and nutrition resources
4. Queensland Government Healthier. Happier

Oral health (adult)

Information [1–6]

- Performed to identify Dental caries and periodontal disease, page 280 early to prevent or manage Coronary heart disease, page 264, Diabetes, page 304 and Diet and nutrition, page 29

Health check recommendations

- **All people > 15 years of age annually**

1. Procedure

- Ask the person the questions in Table 1. and perform a visual oral check
- Provide brief intervention if required
- Determine if the person requires a referral and place onto a follow-up and recall register

Table 1. Adult oral health questions and interventions

Question	Explore
From 15 years of age	
How often does the person brush their teeth?	• Are the person's teeth loose or painful? • Do their teeth affect what they eat? • Do they wear dentures? • Do their dentures fit? • Perform a **visual oral check**
Has the person had any toothache or bleeding gums in the last 4 weeks?	
Has the person had a dental check in the last 12 months?	

1.1 Visual oral check

- Involves looking at all aspects of the oral cavity; teeth, gums and cheeks
- Ensure room is well lit or use a torch and position the person comfortably
- Don gloves
- Lift the upper lip and lower the bottom lip to inspect surfaces of the outer teeth
- Use a tongue depressor to inspect the back of the oral cavity
- Observe teeth for alignment, frosting (early decay), brown (active decay) or black (inactive decay)
- Observe gums for colour, receding edges or bleeding
- Observe inner cheeks for colour, ulcers or trauma

2. Results [1–6]

- Gums should be pink with clearly defined and tight margins around each tooth
- Gums should be free of inflammation, swelling, bleeding, tenderness or pain
- Loose teeth, or gums that bleed spontaneously or while brushing are indicative of periodontal disease. See Table 2.
- Mucous membranes inside of the cheeks should be pink, red, smooth and moist

3. Brief intervention [1–6]

- Dental caries and periodontal disease, page 280 affects > 50% of the Australian population. Aboriginal and Torres Strait Islander adults have the highest rate of missing teeth. Provide Resources 1–2.
- Those at high risk of Dental caries and periodontal disease, page 280 are those:
  - who smoke tobacco products; smoking reduces blood supply to the gums and predisposes people to oral cancers
  - who drink alcohol excessively; alcohol reduces protective saliva flow
  - with poor Diet and nutrition, page 29
  - who are aged or intellectual or physical impaired
- Clean teeth using a soft toothbrush with standard fluoride toothpaste twice a day
- Brush all surfaces of the teeth i.e. the inside, outside, and chewing/biting surfaces
- Brush to the gum margins to prevent gum disease
- When finished, spit the toothpaste out. Do not swallow or rinse the mouth
- Brush prior to bed at night. Saliva flow is reduced when sleeping allowing decay causing bacteria to attack dry tooth surfaces
- Replace toothbrush every 3–4 months, or sooner if bristles become frayed
- Tooth decay causing bacteria can spread between family members. Use own toothbrush
- Use dental floss or interdental cleaning products to clean between the teeth
- Make healthy Diet and nutrition, page 29 choices. Choose fruit, cheese and vegetables for snacks and tap water as the drink of choice
- Avoid sugary and acidic snacks and drinks
- In communities where access to fluoridated drinking water is limited, dental practitioners can advise on alternate sources of fluoride e.g. mouth rinses, high fluoride toothpastes

4. Referral

- For acute dental concerns (Table 2.) see the *Primary Clinical Care Manual*
- For non-acute concerns (Table 2.) see Dental caries and periodontal disease, page 280 and refer to:
  - the MO/NP, visiting dental practitioner or private dentist
  - the free dental service (Resource 3.) for Queensland residents that hold a:
    - Pensioner Concession Card issued by Department of Veterans' Affairs
    - Pensioner Concession Card issued by Centrelink
    - Health Care Card
    - Commonwealth Seniors Health card
    - Queensland Seniors Health Card

Table 2. Oral health related issues

Site	Problem
Teeth	• Malalignment, decay (white spots, brown or black holes) • Trauma, loose or missing • Toothache, plaque buildup • Poorly fitting or problematic dentures
Gums	• Swelling, bleeding (spontaneously or when brushing) • Tenderness pain • Abscess, ulcers, thrush, growths

5. Follow-up

- Place the person on a recall register if required
- Ensure all referrals are actioned
- Provide the person with details for the next scheduled follow-up appointment

6. References

- All Chronic Conditions Manual references are available on the Office of Rural and Remote Health website

7. Resources

1. Queensland Health Oral health promotion and resources
2. Office of the Chief Dental Officer
3. Public dental services

Pathology (adult)

Information

- Taking pathology allows clinicians to:
  - identify people who are at risk of developing chronic conditions
  - monitor those who have a chronic condition
  - identify those who have treatable infections

Health check recommendations

- **Perform following on Aboriginal and Torres Strait Islander people > 15 years annually and all other people > 45 years opportunistically:**
  - **blood glucose level (BGL)**
  - **kidney function**
  - **lipid profile**
  - **STI screen**
- **Ensure all people 50–74 years are participating in the National Bowel Cancer Screening Program. If not perform faecal occult blood test (FOBT)**
- **Ensure all Aboriginal and Torres Strait Islander people aged > 15 years have been tested once for** Hepatitis B, page 337

1. Procedure

- If person meets health check recommendations, undertake the test(s) according to local and universal precaution policies. See Table 1.
- Be prepared to explore issues. See Engaging our patients, page 19
- Provide brief intervention education if a specific need is identified
- Determine if the person requires a referral and place onto a follow-up and recall register

Table 1. Pathology for adults

Specimen	Test	Testing for
Venous blood	• BGL and HbA1c	• Diabetes, page 304
	• TC, TG, HDL-C, LDL-C	• Dyslipidaemia, page 317
	• eGFR	• Chronic kidney disease, page 242
	• HBsAg, anti-HBs, anti-HBc, anti-HBc IgM	• Hepatitis B, page 337
	• TPGE	• Syphilis
	• HIV serology	• Human immunodeficiency virus
Faeces	• FOBT	• Faecal occult blood test for bowel cancer
Urine	• Proteinuria and nitrites	• Chronic kidney disease, page 242
	• Albumin or Alb/Cre (ACR)	• Chronic kidney disease, page 242
	• Polymerase chain reaction (PCR)	• Trichomonas, chlamydia and gonorrhoea

1.1 BGL [1–4]

- Take venous blood and request '**Glucose**' on the pathology form
- Once results return, manage as per Diabetes, page 304

1.2 Lipid profile [5–7]

- Take venous blood and request '**Lipid profile**' on the pathology form
- Once results return, manage as per Dyslipidaemia, page 317

1.3 Kidney function [8–11]

- Take venous blood and request '**Creatinine**' on the pathology form
- Perform a first catch mid-stream urine:
  - if positive for **protein** send remaining urine to pathology requesting '**Albumin creatinine ratio**' on the pathology form. Once results return, manage as per Chronic kidney disease, page 242
  - if positive for **nitrites** add '**MCS**' on the pathology form. Once results return, manage for possible urinary tract infection as per the *Primary Clinical Care Manual*

1.4 Bowel cancer [12]

- For all people aged 50–74 years, check they are receiving and using the National Bowel Cancer Screening Program kits mailed to them every 2 years. See Resource 1. for patients to order a replacement kit
- If not, provide the patient with a faeces container to collect a stool sample
- Instruct patient to keep sample refrigerated (2–8°C) and return to health centre within 24 hours
- Once returned to health centre, request '**FOBT**' on the pathology form

1.5 HBV serology [13–16]

- If documented evidence of hepatitis B serology exists, **no need to test**. Refer to Hepatitis B, page 337
- Pregnant women are screened antenatally. See the *Primary Clinical Care Manual*
- Take venous blood and request '**HBsAg, anti-HBs, anti-HBc and anti-HBc IgM**' on the pathology form. Add any previous vaccinations or risk factor history
- Once results return, manage as per Hepatitis B, page 337

1.6 Syphilis serology [17,18]

- For sex workers in Queensland, testing is recommended every 3–6 months
- Pregnant women are screened antenatally. See the *Primary Clinical Care Manual*
- Take venous blood and request '**TPGE**' on the pathology form
- Once results return, manage as per *Primary Clinical Care Manual*

1.7 HIV serology [17,18]

- For sex workers in Queensland, testing is recommended at least twice a year
- Take venous blood and request '**HIV antibodies–serology**' on the pathology form
- Once results return, manage as per *Primary Clinical Care Manual*

1.8 Trichomonas, chlamydia and gonorrhoea [17,18]

- For sex workers in Queensland, testing is recommended every 3 months
- Take urine and request '**Urine PCR for chlamydia, gonorrhoea and trichomoniasis**' on the pathology form
- Once results return, manage as per *Primary Clinical Care Manual*

2. Results, brief intervention and referral

- Refer to the MO/NP for any abnormal results for:
  - BGL. See Diabetes, page 304
  - lipid profile. See Dyslipidaemia, page 317
  - hep B serology. See Hepatitis B, page 337
  - ACR, eGFR, Creatinine. See Chronic kidney disease, page 242
  - Syphilis, HIV, trichomonas, chlamydia or gonorrhoea, see the *Primary Clinical Care Manual*
  - FOBT

3. Follow-up

- Place the person on a recall register if required
- Ensure all referrals are actioned
- Provide the person with details for the next scheduled follow-up appointment

4. References

- All Chronic Conditions Manual references are available on the Office of Rural and Remote Health website

5. Resources

1. Order a replacement bowel cancer screening test kit
2. Aboriginal and Torres Strait Islander National Bowel Cancer Screening resources for clinicians
3. Priority HBV testing CALD communities
4. The Queensland Health statewide pathology website for detailed specimen collection guides
5. Red Book: STI & BBV Resources For Sex Workers By Sex Workers

Physical activity (adult)

Information

- Knowing a person's level of activity allows the clinician to determine the risk of future health problems and to provide brief intervention early

Health check recommendations

- **All Aboriginal and Torres Strait Islander people > 15 years of age annually**
- **All people > 15 years of age opportunistically**

1. Procedure

- Ask the question as per Table 1.
- Provide brief intervention as required
- Determine if the person requires a referral and place onto a follow-up and recall register

Table 1. Physical activity questions

Question	Explore
Was the person physically active for 150–300 minutes in the last week?	• 2.5–5 hours of moderate physical activity per week • 1–2.5 hours of vigorous physical activity per week • Tally the occasions of exercise • See Physical activity and sleep, page 34 for further details

2. Results

2.1 Physical activity [1,2]

- Is any activity that gets people moving, makes them breathe quicker, and heart beat faster
- Moderate intensity activity requires some effort, but people can still speak while doing it. Examples include:
  - fast walking
  - dancing
  - golf
  - gentle swimming
  - lawn mowing
  - social tennis
- Vigorous intensity activity requires effort and makes people breathe hard and fast ('huff and puff'). Examples include:
  - running
  - cycling
  - aerobics
  - organised sports
  - jogging

2.2 Sedentary behaviour [1,2]

- Sedentary behaviour is characterised as sitting or lying down (except for sleeping)
- Common contributing factors include office work, driving and leisure time

3. Brief intervention [1,2]

- For adults identified as not undertaking enough daily Physical activity and sleep, page 34, provide Resource 1.
- Physical activity:
  - reduces the risk of most chronic conditions including Coronary heart disease, page 264, Diabetes, page 304, Hypertension, page 345, Overweight and obesity (adult), page 366 and Dyslipidaemia, page 317
  - builds muscle and bone strength, and helps with pain associated with Osteoarthritis, page 354 and Persistent pain, page 387
  - creates opportunities for socialising and helps develop and maintain overall physical and mental wellbeing
- To achieve above, adults should target:
  - 150–300 minutes of moderate intensity physical activity weekly or
  - 75–150 minutes of vigorous intensity physical activity weekly
- Increased benefits are achieved by targeting higher levels of activity
- Older people should target > 30 minutes of moderate intensity physical activity daily, to keep their heart, lungs and bones healthy
- Muscle strengthening activity (e.g. weight resistance, lifting, digging, squats, push-ups) > 2 days/week improves posture, mobility, balance and prevents falls
- Prolonged time spent sitting inactive should be minimised

4. Referral

- Refer to local exercise groups or other activities that get people moving
- Refer those identified as Overweight and obesity (adult), page 366 to a dietitian and exercise physiologist

5. Follow-up

- Place the person on a recall register if required
- Ensure all referrals are actioned
- Provide the person with details for the next scheduled follow-up appointment

6. References

- All Chronic Conditions Manual references are available on the Office of Rural and Remote Health website

7. Resources

1. Physical activity and exercise guidelines for all Australians

Reproductive health

Information [1–7]

- Checking reproductive health allows the clinician to identify chronic conditions or disorders of reproductive organs
- Patients may not routinely have a Sexual and reproductive health, page 39 check due to no obvious symptoms, embarrassment or reluctance to seek help

Note

- Refer to the MO/NP if not confident, embarrassed or restricted by culture to assess for reproductive health

Health check recommendations

- **All Aboriginal and Torres Strait Islander people > 15 years of age annually**
- **All people > 15 years of age opportunistically**

1. Procedure

- Ask the questions as per Table 1. Be prepared to explore issues
- Provide brief intervention as required
- Determine if the patient requires a referral and place onto a follow-up and recall register

2. Results and brief intervention for women

2.1 Breast cancer [1]

- The risk of developing breast cancer increases with age
- Women > 40 years can have a free mammogram every 2 years
- Women aged 50–74 are actively invited to screen
- Immediately refer any woman with recent changes to the breast or nipples i.e. lumps, masses, hard areas, swelling, pain or nipple discharge
- Provide Resource 1.

2.2 Cervical cancer [2]

- The National Cervical Screening Policy (NCSP) recommends that people with a cervix:
  - have an human papillomavirus (HPV) test every 5 years
  - start cervical screening at age 25
  - have an exit test between 70 and 74 years of age
  - have an HPV test at any age if they have symptoms of cervical cancer, even if they screen regularly
- Provide Resources 2–3.

Table 1. Reproductive health questions

Question	Explore
Women	
Has the woman noticed any recent breast changes?	• Any lumps, masses, hard areas, any recent changes, swelling, pain, nipple discharge
Has the woman had a breast screen in the last 2 years? (40+)	• Results? Familial breast cancer (BRCA1 or BRCA2) if known? • Any treatment?
Has the woman had any abnormal vaginal bleeding, discharge or lower abdominal pain?	• When? How much? How often? • Type? Describe?
Has the woman had cervical screening in the last 5 years? (25+)	• Where? Result? • Any treatment?
Men	
Has the man noted any changes to testes?	• Swelling, masses, lumps, pain, trauma?
Has the man had any penile discharge or dysfunction?	• Loss of sexual drive? • Premature ejaculation? • Erectile dysfunction?
Has the man's (40–69) father or brother been diagnosed with prostate cancer?	• Results? Familial breast cancer (positive BRCA1 or BRCA2) if known? • Any treatment?

3. Results and brief intervention for men

3.1 Testes [3]

- Testicular lumps, swelling or pain may be a precursor to testicular cancer or signs of infection

3.2 Sexual dysfunction [4,5]

- Asked to identify any underlying pathology related to dysfunction e.g. Diabetes, page 304 and Coronary heart disease, page 264

3.3 Prostate disease [6,7]

- Prostate disease includes:
  - a non-cancerous, non life-threatening enlargement of the prostate gland (benign prostate hyperplasia) that impacts on quality of life
  - life-threatening inflammation of the prostate gland (prostatitis) due to infection
  - prostate cancer
- Benefits of Prostate-Specific Antigen (PSA) testing:
  - can provide reassurance
  - early treatment if prostate cancer detected
- Harms of PSA testing:
  - uncertainty. Some men with elevated PSA levels may not have prostate cancer, while some men with a normal PSA may have prostate cancer
  - a positive PSA result can lead to a cancer diagnosis, progressing so slowly it would not have caused health problems if left undetected and untreated

  - unnecessary treatment of slowly progressing cancer can result in harmful effects without health benefits
- If after being informed of the benefits and harms of PSA testing, a patient can be offered 2nd yearly PSA testing if they:
  - are aged 50–69 years
  - are aged 45–69 years with concerns about their risk for prostate cancer or
  - are aged 45–69 years and have a father or brother diagnosed with prostate cancer
- Advise men > 70 years that harms of PSA testing may be greater than the benefits of testing in men of their age
- A digital rectal examination is not recommended as a standard test for men who don't have symptoms of prostate cancer
- See Sexual and reproductive health, page 39. Provide Resources 3–5.

4. Referral

- For any vaginal or penile discharge refer to the *Primary Clinical Care Manual*

4.1 Women

- Refer to the MO/NP if:
  - they meet the criteria or are overdue for a breast examination, mammogram or cervical screening
  - there is a suspicion of a condition requiring further investigation:
    - concerns about changes to the breasts or nipples
    - positive findings on breast examination
    - unusual or persistent vaginal bleeding or discharge despite appropriate treatments
    - Known familial breast cancer (BRCA1 or BRCA2)

4.2 Men

- Refer to the MO/NP if:
  - they answer 'yes' to penile dysfunction or teste changes
  - they have a family history of prostate disease or would benefit from further discussion on the risks and benefits of prostate cancer screening
  - there is a suspicion of a condition requiring further investigation e.g. Diabetes, page 304, Coronary heart disease, page 264, known familial breast cancer (BRCA1 or BRCA2)

5. Follow-up

- Place the person on a recall register if required
- Ensure all referrals are actioned
- Provide the person with details for the next scheduled follow-up appointment

6. References

- All Chronic Conditions Manual references are available on the Office of Rural and Remote Health website

7. Resources

1. Breast screening information available from Cancer Council Australia or at BreastScreen Queensland
2. Pap smear and cervical cancer information
3. The National Cancer Screening Program
4. Mens health resources available from Healthy Male
5. Engaging Aboriginal and Torres Strait Islander men

Skin (adult)

Information [1–5]

- Undertaken to identify people at risk of infections or parasites that can lead to chronic conditions e.g. Chronic kidney disease, page 242, Heart failure, page 325 and Rheumatic heart disease, page 406

Health check recommendations

- **All Aboriginal and Torres Strait Islander people > 15 years of age annually**
- **All people > 15 years of age opportunistically**

1. Procedure

- Ask the questions as per Table 1.
- Be prepared to visualise areas by asking the consenting patient to remove parts of their clothing or footwear
- Provide brief intervention if inadequate skin care behaviours are identified
- Determine if the patient requires a referral and place onto a follow-up and recall register

Table 1. Skin questions

Question	Explore
Is the patient concerned about any aspects of, or changes to their skin?	• Any changes to birthmarks, moles, marks, etc? • If '**yes**' explore changes to: – daily activities – sun exposure – accommodation – pets – cosmetics, deodorants or soaps
Describe skin	• If skin complaint identified, describe what is seen, including: – clean and intact – size, position, colour – pain or bleeding – lesions, wounds, boils or sores – scars or bruises – red raised areas – weeping or exudate – mosquito/ sandfly bites – moles with uneven edges or multiple colours – red raised and growing lesions – itchy or dry areas

2. Results

- Healthy skin should be clean, slightly oily and intact

3. Brief intervention [1–5]

- Skin protects the body from microbes, bacteria and the elements, helps regulate body temperature and permits the sensations of touch, heat and cold
- **Staphylococcus aureus** bacteria, found in soil, water, air, the nose and skin:
  - is often superficial and mostly non-life threatening cause of skin infections e.g. boils, cellulitis and impetigo

  - clean any non-infected sores with soap and water and apply a cover
- **Group A Streptococcal** bacteria that is commonly found in the throat and on skin:
  - can lead to life-threatening acute rheumatic fever (ARF), acute post-streptococcal glomerulonephritis (APSGN) or Heart failure, page 325
  - clean any non-infected sores with soap and water and apply a cover
- **Parasites** that invade the skin include head and pubic lice and scabies can lead to renal complications e.g. Chronic kidney disease, page 242:
  - regularly wash and change clothes and bedding
- **Mosquitoes, ticks, fleas and other insects** can transmit debilitating and sometimes life-threatening parasites e.g. malaria (plasmodium), or viruses e.g. dengue fever and Ross River fever, Japanese Encephalitis:
  - use mosquito coils and skin repellent during evenings. Rid homes and yards of containers of stagnant water. Spray insecticide under and around household items
- Ringworm, tinea, jock rash, thrush and athlete's foot are common **fungal infections**
  - keep skin dry, aired and moisture free. change sweaty or damp clothes
- **Viral infections** are often highly infectious, but mostly harmless and resolve with time. They include:
  - **herpes**: easily transmitted to mouth or genitalia when kissing or during oral sex when herpes sore is present
  - **warts**: avoid touching or bathing with others to avoid spreading
  - **molluscum contagiosum** (multiple watery blisters): usually benign but:
    - seen in warm, humid climates where living conditions are crowded
    - often seen in immunocompromised patients e.g. HIV, during cancer treatment
    - spreads prolifically in children from bathing. Encourage showering only. Cover and avoid contact with others
  - **shingles:** painful itchy blisters on the face, chest, back, abdomen or pelvis caused by the chickenpox virus. Usually seen in those unvaccinated or immunocompromised and > 40 years
  - encourage vaccination e.g. chicken pox, measles, mumps and rubella, etc.
- **Rashes** are common and can be caused by viruses (above), allergens or environmental irritants such as:
  - detergents, creams, skin products etc. Trial any change of product
  - pets, cigarette smoke, dust mites, mould, workplace materials, pollens etc.
- Frequent and prolonged exposure to direct **sunlight**:
  - can lead to skin cancer e.g. basal cell carcinoma (BCC) and squamous cell carcinoma (SCC), including those with dark skin, particularly under the arms and fingers nails and soles of feet
  - **in summer, September to February (UV level > 3):** limit exposure to before 10am and after 3pm
  - **in late autumn and winter, March to August (UV level < 3):** any daytime outdoor activity with skin partly covered most days of the week
  - use wide brim hats, sunglasses and full length clothing over the arms and legs
  - apply a SPF 30+ sunscreen liberally to exposed skin 20 minutes before going outdoors and reapply every 2 hours. See Resource 1.

- Effective hand hygiene is the single most important strategy to prevent most contact related infections and parasites. See Resource 2.

4. Referral

- **For multiple presentations of similar skin conditions, be alerted to a broader community public health outbreak e.g. APSGN or ARF. Contact your local Population Health Unit to determine a course of action**
- Refer to the *Primary Clinical Care Manual* or the MO/NP for:
  - any abnormal or unresolving bacterial or fungal infections, rashes or parasites
  - any changes or painful birthmarks, moles, marks, etc.
  - always suspect Rheumatic heart disease, page 406 or APSGN in rural and remote locations

5. Follow-up

- Place the person on a recall register if required
- Ensure all referrals are actioned
- Provide the person with details for the next scheduled follow-up appointment

6. References

- All Chronic Conditions Manual references are available on the Office of Rural and Remote Health website

7. Resources

1. SunSmart resources available from Cancer Council
2. Handwashing resources available from Hand Hygiene Australia

Social-emotional wellbeing (adult)

Information [1–5]

- The social-emotional wellbeing questions aim to identify adults who may be:
  - experiencing thoughts or feelings that impact negatively on their lives e.g. suicide or self-harm
  - finding it difficult to make positive decisions about any chronic conditions or health issues they may have
  - at risk of Depression, page 286 or Anxiety disorders, page 197

Health check recommendations

- **All Aboriginal and Torres Strait Islander people > 15 years of age annually**
- **All people > 15 years of age opportunistically**

1. Procedure [6,7]

- Ask the Table 1. questions in your own words or words the person understands
- Observe the person's facial expressions, eye contact, reactions and vocalisations, including:
  - impatience, anger
  - speaking negatively
  - silence, withdrawn
  - fidgety or anxious
- Be mindful of cultural nuances e.g. averting eye contact, head bowed
- Be prepared for the person to debrief with you. See Engaging our patients, page 19
- The questions are:
  - general exploratory questions of a person's wellbeing. They are not diagnostic
  - based on general anxiety disorder and depression based screening tools
- Determine if the person requires a referral and place on a follow-up and recall register

Table 1. Exploratory questions for those > 15 years [6,7]

Responses: (1) Not at all (2) Several days (3) More than half the days (4) Nearly every day
Over the last 2 weeks: i. How often did you have little interest or pleasure in doing things? ii. How often did you feel hopeless, down in the dumps, sad or slack? iii. How often did you feel nervous, anxious or on edge? iv. How often were you not able to stop worrying about things?
A score > 3 for the **first** 2 questions **or** the **last** 2 questions require a referral for further investigations. See 2. Results

2. Results

- **If the person talks about harming themselves or some other person, do not leave them alone or send away. Refer to the *Primary Clinical Care Manual,* the MO/NP or mental health services**
- If the person scores **> 3** for the **first** 2 questions or the **last** 2 questions:
  - perform:
    - a 25 item Strengths and Difficulties Questionnaire (SDQ). See Resource 1. **or**
    - a Depression, Anxiety, Stress scale (DASS). See Resource 2. **or**
    - for a teenager a HEADDS assessment. See Resource 3.
  - refer for further investigation. See Table 2.
  - provide brief intervention

3. Brief intervention

- Most people experience social-emotional changes throughout their lives
- Unresolved social-emotional issues:
  - can have life-long impacts on work, maintaining positive relationships and developing healthy identities
  - are often associated with physical health problems, intellectual disability, learning disorders, anxiety, substance abuse, self-harm, psychosis and trauma
- Discuss how the body reacts in times of stress, fear, confusion and sadness (provide Resources 4–5.) including:
  - heart beating fast
  - crying
  - sweating
  - shaking
- Ask the person to identify someone they feel safe to talk to about the way they feel
- Provide 24 hour health service details to seek help if their feelings become more regular, intrusive or impact on their ability to function

4. Referral

- **If the person talks about harming themselves or some other person, do not leave them alone or send away. Refer to the *Primary Clinical Care Manual,* the MO/NP or mental health services**
- Refer to the MO/NP or mental health services, along with the SDQ, DASS or HEADDS assessment, if:
  - patient scores **> 3** for the **first** 2 questions or the **last** 2 questions
  - concerns are raised by person
  - you are concerned about the person
- Refer to Child safety reporting, page 428 if you have any child safety concerns
- For further referral options see Table 2.

Table 2. Referral options

Queensland Health
• Health worker, registered nurse, psychologist or social worker • Child safety reporting, page 428 services • Child and Youth Mental Health Service • Alcohol, tobacco and other drugs
Other services
• Aboriginal and Torres Strait Islander Legal Service (Qld) Ltd • Legal Aid Queensland • Act for Kids • Queensland Indigenous Family Violence Legal Service • Queensland Aboriginal and Islander Health Council (QAIHC) • Elder, minister or pastor • Headspace, the national youth mental health foundation • Quitline 13 78 48 or Quit smoking • Royal Flying Doctor Service nurse or doctor • School Principal or student guidance officer • True Relationships & Reproductive Health (True) • Alcohol and Drug Information Service on 1800 177 833 all hours • Turning Point online counselling service • Lifeline or crisis support phone 13 11 14 • Centacare

5. Follow-up

- Place the person on a recall register if required
- Ensure all referrals are actioned
- Provide the person with details for the next scheduled follow-up appointment

6. References

- All Chronic Conditions Manual references are available on the Office of Rural and Remote Health website

7. Resources

1. The Strengths and Difficulties Questionnaire
2. The DASS scoring tool
3. The HEADDS assessment
4. BeyondBlue
5. Your mental wellbeing

PAGE LEFT INTENTIONALLY BLANK

Section 4. Management of diagnosed conditions

Anxiety disorders

High risk groups [1,2]

- Family history of anxiety
- Physical or emotional stress
- History of physical, sexual or emotional trauma
- Female gender
- Comorbid chronic condition
- People with alcohol or benzodiazepine use disorders
- Those with variation in their cerebral functions (neurodivergence) e.g. ADHD, dyslexia, autism
- Intellectual disability

Considerations in pregnancy [2,3]

- Anxiety is common during and after pregnancy (up to 25%)
- Consider the risks and benefits of psychotropic drug use in pregnancy
- See Resource 1. for drug use in pregnancy and breastfeeding

Urgent referral

- Refer to the *Primary Clinical Care Manual* if a risk of harm to themselves or others
- Lifeline 1300 131 114 (local call)
- Kids Helpline 1800 55 1800 (free call)
- Beyond Blue
- Black Dog Institute
- headspace

1. What is an anxiety disorder? [4–6]

- Relates to the anticipation of a future or perceived threat
- Anxious feelings:
  - are a common response to a situation where a person feels under pressure
  - quickly pass once the stressor is removed
- While anxiety may improve performance, high levels can lead to diminished performance and ability to function
- Anxiety becomes a disorder when it is excessive or cannot be controlled
- Types of anxiety disorders include:
  - **Generalised anxiety disorder (GAD):** generalised and persistent fatigue, muscle tension, headaches, irritability, restlessness, sleep disturbance and gastrointestinal symptoms, affecting ability to function. More common in women than men and has a chronic course that often spans a persons life
  - **Panic Disorder**: abrupt unexpected surges of intense fear or discomfort that reach a peak within minutes and are associated with several symptoms. Attacks are not restricted to any particular situation or circumstance and can cause significant distress or disability. See Table 1.

- **Post traumatic stress disorder (PTSD):** intrusive nightmares, flashbacks and thoughts. Avoiding memories of events leading to sleep disturbance, irritability, hyperarousal and anger. Arises as a delayed or protracted response (> 6 months) to a stressful event involving actual or threatened death, a serious injury, or threats to a persons physical integrity
- **Obsessive compulsive disorder (OCD)**: recurring and distressing intrusive thoughts, urges, or obsessions and repetitive behaviours (e.g. hand washing, counting, checking) to reduce anxiety. Patients typically recognise their behaviour is excessive or unreasonable which can lead them to feel ashamed and attempt to conceal their symptoms from others
- **Social anxiety disorder:** fear of scrutiny or judgement, doing or saying something embarrassing, or being seen as inappropriately anxious in social situations. Social situations are either avoided or endured with anguish having a significant impact on quality of life
- **Specific phobia**: intense and persistent fear of specific situations or objects such as: certain animals or insects, blood, injections, flying, thunder or heights. Confronting these phobic situations can set off overwhelming fear, panic and avoidance responses

Table 1. Criteria for a panic attack [5]

A distinct period of intense fear or discomfort, in which ≥ 4 of the following symptoms develop abruptly and reach a peak within 10 minutes	
• Palpitations, pounding heart or accelerated heart rate • Numbness or tingling sensations • Fear of losing control or going crazy • Feeling dizzy, unsteady, lightheaded or faint • Derealisation (feelings of unreality) or depersonalisation (being detached from oneself)	• Sensations of shortness of breath or smothering • Trembling or shaking • Chest pain or discomfort • Nausea or abdominal distress • Feeling of choking • Fear of dying • Chills or hot flushes • Sweating

2. Diagnosis of anxiety disorders [4,5]

- Made after health assessment, physical examination and mental health history
- Important to exclude medical conditions and substance use and withdrawal as a cause of symptoms
- Anxiety disorders are highly comorbid
- Identifying situations that are feared or avoided and associated thought, helps to define the anxiety disorder and informs the management strategy
- Validated assessment tools are used by suitably qualified clinicians to make a diagnosis. See Resource 2.

3. Management of anxiety disorders

- The goals of managing anxiety focuses on:
  - psychotherapy (specifically cognitive behaviour therapy)
  - optimal use of medicines
  - identifying and managing co-existing Depression, page 286

For management strategies to be successful, it is important to identify and address all possible psychological and lifestyle factors that may cause or exacerbate the disorder

3.1 Support patient self-management [7]

- Provide information and resources about anxiety disorders. See Resource 3.
- Reassure the person that anxiety disorders are real medical conditions
- Help the patient identify the signs and symptoms of anxiety and panic attacks and recognise triggering factors. See Table 1.
- Discuss the role that modifying lifestyle behaviours has in improving general health
- Encourage the patient to identify barriers to adequate lifestyle modification and medical adherence and create goals to overcome those barriers. See Engaging our patients, page 19
- Be aware of cultural factors that could influence the way symptoms are expressed or understood

3.2 Social-emotional support [2,5]

- Anxiety and depression can be screened for by using a self or clinician-rated mood scale. See Resource 2.
- Build strong therapeutic relationships that will form the basis of continuing care. See Engaging our patients, page 19 and Social-emotional wellbeing, page 58

3.3 Psychotherapy [2,5,6,8]

- Cognitive behaviour therapy (CBT) is considered first line treatment for anxiety disorders and any associated sleep dysfunction
- Requires referral to an appropriately trained therapist e.g. social worker, mental health worker, psychologist or GP/NP
- CBT has been associated with lower relapse rates after 2 to 3 years. CBT:
  - can be as effective as medicines for anxiety disorders
  - provides skills that reduce risk of relapse
  - requires commitment from the patient
- General principles of psychotherapy are to:
  - problem-solve stressors at the time they occur
  - resist thoughts of pessimism and self-criticism and replace them with realistic thoughts
  - practise behavioural activity tasks to improve mood

3.4 Physical activity [1,2,7,8]

- Exercise programs are a treatment option for anxiety disorders
- High intensity exercise is more effective than low intensity
- Encourage community exercise programs e.g. walking, fishing or hunting groups
- See Physical activity and sleep, page 34

3.5 Relaxation training [1,2,8,10]

- Can reduce mild to moderate anxiety especially in youth
- Can improve sleep
- Examples include progressive muscle relaxation, mindfulness, imagery/autogenic training and deep breathing
- Can be self-taught or led by a professional. See Resource 4.

3.6 Internet based treatment [4,10]

- Involves online learning materials with exercises that individuals can choose to use by themselves or with professional guidance. See Resources 5. and 6.
- Internet self-help tools:
  - are effective for specific phobias
  - may suit patient preferences
  - can be supported by a therapist

3.7 Sleep hygiene [1–4,6,10]

- Sleep disturbances are common in anxiety disorders due to the condition itself and the medicines used to treat it
- Assess a patient's daytime sleepiness and OSA risk by using a validated tool. If they score highly refer to a sleep specialist. See Resource 7.

4. Medicines for anxiety disorders [4,8,9,11]

- Psychotherapy is considered first line treatment
- Medicines are useful to control symptoms where psychotherapy:
  - is not available
  - is not accepted or patient has low motivation
  - is not working for the patient
- Selective serotonin reuptake inhibitors (SSRIs) are the recommended first-line choice, however:
  - there are potential side effects
  - anxiety symptoms may worsen for a short time when starting medicines or increasing doses
  - improvement in symptoms takes up to 2 weeks after starting medicines
  - abrupt cessation of SSRIs may result in withdrawal effects
  - there is an increased risk of suicidal behaviour in people < 25 years of age taking SSRIs. Close monitoring of side effects is essential in this age group
- See Resource 8. for psychotropic medicine consumer information
- Table 2. outlines medicines used for anxiety
- Table 3. summarises management of specific anxiety disorders
- Refer all children and adolescents to Child and Youth Mental Health Services (CYMHS). See Resource 9.

Table 2. Medicines for anxiety disorders[1,4,5,9,11]

Selective serotonin reuptake inhibitors (SSRIs)
• Sertraline is preferred in both pregnancy and breastfeeding. Avoid paroxetine and fluoxetine • Side effects include nausea, diarrhoea, insomnia, orthostatic hypotension, dizziness, hyponatraemia, increased risk of GI bleeding, sedation, sexual dysfunction, loss of libido, anorgasmia, ejaculatory disturbance • Weight gains > 6 kgs may occur • If drowsiness occurs, give in the evening • Careful titration and follow up is required. Doses used for anxiety disorders are typically higher than those used for depression
• **Escitalopram** 10–20 PO mg mane • **Fluoxetine** 20–60 PO mg mane • **Paroxetine** 20–50 PO mg mane • **Sertraline** starting mane dose 25 mg PO (panic disorder), 50 mg PO (in OCD to a max. 200 mg)
Serotonin noradrenaline reuptake inhibitors (SNRIs)*
• May cause palpitations, tachycardia, increased BP and orthostatic hypotension • Treatment with a monoamine oxidase inhibitor (MAOI), or within 14 days of stopping a MAOI, is contraindicated due to serotonin toxicity risk
• **Duloxetine** 30–120 mg PO mane **or** • **Venlafaxine** CR 75–150 mg PO mane after food (doses up to 225 mg may be required)
Tricyclic antidepressants (TCAs)
• May be used as second line e.g. imipramine, clomipramine, and amitriptyline (for PTSD) • Use with caution if co-existing depression or ideas of self-harm • Toxic in overdose quantities
Benzodiazepines
• Avoid repeated doses in pregnancy and breastfeeding • Reduces tension and increases relaxation • Use only for treatment during crises or if anxiety is causing unnecessary distress • Addictive, ensure no previous history of problem drug or alcohol use • For short-term use only. Prescribe in small quantities. Review regularly • Long-term use associated with dependence, motor vehicle accidents and memory problems • At the end of a treatment taper off over several weeks to avoid withdrawal symptoms • In the elderly, there is increased risk of oversedation, ataxia, confusion, memory impairment, falls and respiratory depression. If benzodiazepine necessary, use short term and in low doses, and avoid long-acting agents
Diazepam 2–5 mg PO stat. May be repeated up to bd

***See LAM and PBS for medicine indications and restrictions**

Table 3. Management for specific anxiety disorders[4,5,9,11]

Anxiety disorder	Psychotherapy (treatment of choice)	First line medicines	Second line/ other medicines
General anxiety disorder	• CBT	• SSRI (escitalopram) **or** SNRI* (duloxetine, venlafaxine)	• Trial another SSRI **or** SNRI • Benzodiazepine
Panic disorder	• CBT	• SSRI (paroxetine, sertraline) **or** SNRI* (venlafaxine)	• Trial another SSRI **or** SNRI • TCA e.g. clomipramine
Post traumatic stress disorder	• Trauma-focused or eye movement desensitisation and reprocessing CBT	• SSRI (paroxetine)	• Trial another SSRI **or** SNRI • TCA e.g. amitriptyline
Obsessive compulsive disorder	• CBT	• SSRI (fluoxetine, sertraline, paroxetine)	• Trial another SSRI **or** SNRI
Social anxiety disorder	• Exposure-based CBT and social skills training	• SSRI (escitalopram, paroxetine) **or** SNRI* (venlafaxine)	• Propranolol for control of physiological symptoms
Specific phobias	• Psychological interventions for all specific phobias	• Benzodiazepine	

***SNRIs are non-LAM and non-PBS for treatment of anxiety disorders**

5. Cycle of care

Cycle of care summary for anxiety disorders

Action	Dx	Frequency
Full physical health check	✓	12 mthly
TFT, FBC, LFTs, UEC, venous glucose, syphilis serology, fasting lipids	✓	Dependent on any underlying medical condition and medicine use
Weight	✓	Wkly for 6 wks then at 6 mths and 12 mthly. May need to be more regular based on clinical presentation
BP	✓	
Medicine review	✓	
Lifestyle modification	✓	
Electrocardiogram	✓	Frequency determined by clinical condition on advice of MO/NP
Self-harm risk assessment	✓	At each review
Medicine review	✓	Each visit by clinician. 12 mthly review by pharmacist
MHAOD service review	✓	As required
Mental Health Worker Review	✓	Wkly until stable
Mental Health team	✓	As required
MO/NP	✓	Wkly until stable and with medicine review
Psychiatrist	✓	For moderate/severe anxiety disorders or immediately if self-harm is an issue

6. References

- All Chronic Conditions Manual references are available on the Office of Rural and Remote Health website

7. Resources

1. Drug use in pregnancy and breastfeeding
2. The DASS tool – the DASS scoring tool – The GAI-20 validated screening tool for older adults – The Hospital Anxiety and Depression Scale – The KICA-dep validated in Aboriginal and Torres Strait Islander communities available – The DMI-10 and K10 validated in people with chronic illnesses – The Geriatric Depression Scale–Short Form – The Edinburgh Postnatal Depression Scale
3. Beyondblue anxiety resources – headspace anxiety resources – Rainbows support for children – the Black Dog Institute anxiety resources – Clear fear: app designed for teenagers – Chill Panda: app designed for children and adults
4. BeyondBlue relaxation exercises - Autogenic training and Imagery
5. This way up: Anxiety and Depression Program – MindEd: e-learning resource
6. moodgym: a self help online guide to manage symptoms of depression and anxiety
7. The Epworth Sleepiness Scale and STOP-Bang questionnaire
8. Psychotropic medicine information for consumers and/or carers receiving health care
9. Child and Youth Mental Health Services – Rural and remote specific support

Asthma (adults and children > 12)

High risk groups

- Adults and children over 12 years of age with a diagnosis of asthma

Consideration in pregnancy [1–3]

- Asthma in pregnant women increases the risk of pre-eclampsia, preterm labour, low birth weight and babies small for gestational age
- Acute exacerbations should be treated aggressively to avoid fetal hypoxia
- Avoid exposure to tobacco smoke during pregnancy and first year of life

Urgent referral

- For an acute asthmatic episode see the *Primary Clinical Care Manual*

Special considerations

- A prior diagnosis of asthma should be corroborated by documented evidence

1. What is asthma? [2–4]

- A chronic inflammatory disorder of the airways triggered by a range of factors
- A variation in lung function (especially expiratory airflow) and episodic respiratory symptoms such as wheezing, shortness of breath, cough and tight chest
- Episodes are usually associated with airflow obstruction that is often reversible either spontaneously or with treatment
- Airflow obstruction is due to airway wall inflammation causing oedema and mucus production
- Asthma is associated with allergies such as eczema and hay fever
- More common in women than in men
- More common among Aboriginal and Torres Strait Islander Australians

2. Diagnosis of asthma in adults and children > 12 [2–4]

- Based on a history, physical examination, consideration of other diagnoses and documented changes in airflow (spirometry). See Resources 1.
- If spirometry is unavailable, PEF before and after a therapeutic trial with as-needed SABA and regular ICS, often with a 1 week course of oral corticosteroids, helps to confirm a diagnosis of asthma prior to long-term treatment
- Airflow limitation demonstrated on spirometry and other respiratory symptoms does not always mean a person has asthma. Differential diagnoses include:
  - Rheumatic heart disease, page 406, Chronic obstructive pulmonary disease, page 255, Heart failure, page 325, Bronchiectasis, page 233, chronic upper airway cough syndrome, vocal cord dysfunction, hyperventilation and dysfunctional breathing, cystic fibrosis, inhaled foreign body, adverse drug reactions, lung disease, pulmonary embolism, central airway obstruction or congenital heart disease
- Asthma can be over or under diagnosed
- Table 1. outlines findings that increase or decrease the likelihood of asthma

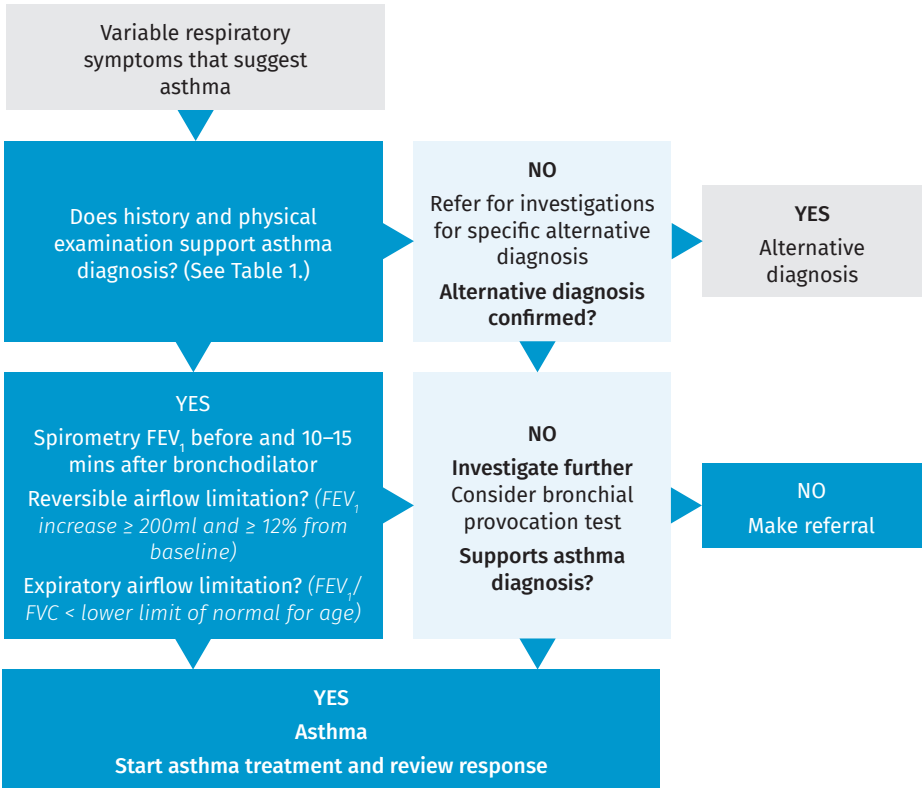
Table 1. Findings that increase or decrease the probability of asthma in adults and children > 12

Asthma is more likely to explain the symptoms if any of these apply	Asthma is less likely to explain the symptoms if any of these apply
• More than one of these symptoms: – wheeze – breathlessness – chest tightness – cough • Symptoms recurrent or seasonal • Symptoms worse at night or in the early morning • History of allergies (e.g. hay fever, atopic dermatitis) • Symptoms obviously triggered by exercise, cold air, irritants, medicines (e.g. aspirin or beta blockers), allergies, viral infections, laughter • Family history of asthma or allergies • Symptoms began in childhood • Widespread wheeze audible on chest auscultation • FEV_1 or PEF lower than predicted, without other explanation • Eosinophilia or raised blood IgE level, without other explanation • Symptoms rapidly relieved by a SABA bronchodilator	• Dizziness, light-headedness, peripheral tingling • Isolated cough with no other respiratory symptoms • Chronic sputum production • No abnormalities on physical examination of chest when symptomatic (over several visits) • Change in voice • Symptoms only present during URTI • Heavy smoker (now or in past) • Cardiovascular disease • Normal spirometry or peak expiratory flow (PEF) when symptomatic (despite repeated tests)

Adapted with permission from the Australian Asthma Handbook, Version 2.2. © 2022 National Asthma Council Australia.

- Flowchart 1. illustrates the steps to confirm an asthma diagnosis

Flowchart 1. Steps to diagnosing asthma in adults and children > 12



Adapted with permission from the Australian Asthma Handbook, Version 2.2. © 2022 National Asthma Council Australia

3. Management of adults and children > 12 with asthma [2–5]

- The goals of managing asthma are to:
  - engage the patient to identify asthma management goals
  - minimise impact of asthma on quality of life
  - optimise asthma symptom control with minimal medicines
  - minimise risk of exacerbations and loss of lung function
  - minimise adverse effects of treatment
  - identify and address comorbid conditions including:
    - hay fever
    - rhinosinusitis
    - GORD
    - Depression, page 286 and Anxiety disorders, page 197
    - chronic infections
    - OSA

3.1 Support patient self-management [2,3]

- Provide culturally appropriate asthma resources and support service details. See Resource 2.
- In partnership develop an **asthma action plan** (Resource 3.) identifying:
  - asthma triggers. See Table 2.
  - symptoms that indicate asthma is worsening
  - actions to take when symptoms worsen
  - when and how to use medicines and correct use of inhaler. See Resource 4.
  - doses and frequencies of regular medicines
  - how to adjust treatment in response to particular signs and symptoms
  - when to start oral corticosteroids
  - when and how to seek urgent medical help
- At each visit the asthma action plan should be reviewed and adjusted as required
- Patients who accept their asthma symptoms as normal, require added support to show that symptoms and quality of life will improve with correct medicine use, lifestyle modification and regular monitoring. See Resource 2.
- Encourage the patient to identify barriers to adequate lifestyle modification and medical adherence and create goals to overcome those barriers. See Engaging our patients, page 19

3.2 Social-emotional support [2–4]

- Depression, page 286 and Anxiety disorders, page 197 are more common in people with asthma, attributing to a patient's asthma symptom perception and medicine adherence
- See Social-emotional wellbeing, page 58

3.3 Smoking cessation [2–5]

- Review recent asthma symptom control every 3 months in those who smoke, due to increased risk of exacerbations and lung function decline over time
- Regularly encourage the patient to Smoking cessation, page 48
- Offer the patient Quitline details. See Resource 5.

3.4 Obesity [1–5]

- Asthma is more difficult to control in obese patients (BMI ≥ 30 kg/m^2)
- Overweight and obesity (adult), page 366 and Overweight and obesity (child), page 372 is associated with an increased prevalence of asthma via mechanical, inflammatory and genetic/developmental factors
- 5–10% weight loss can lead to improved asthma control and quality of life
- The risk of asthma exacerbations is reduced in those who have a diet high in fresh fruit and vegetables and oily fish
- A diet high in processed foods and soft drink increases the risk of developing asthma
- See Diet and nutrition, page 29

Table 2. Summary of asthma triggers

Avoidable triggers	Unavoidable triggers
Always avoid	**Do not avoid**
• Cigarette smoke	• Exercise • Laughter
Avoid or reduce if possible	**Manage**
Allergens • Animals • Cockroaches • House dust mite • Moulds • Workplace allergens • Pollens **Airborne/environmental irritants** • Cold/dry air • Fuel combustion e.g. gas heaters • Home renovation materials • Household aerosols • Moulds (airborne) • Workplace irritants • Outdoor industrial and traffic pollution • Perfumes/scents/incense • Smoke e.g. cigarettes, vapes, campfires • Thunderstorms in spring and early summer (grass pollen) **Certain medicines** • Aspirin and NSAIDs (in patients with aspirin-exacerbated respiratory disease) • Beta blockers (requires specialist supervision) • Bee products e.g. pollen, propolis, royal jelly • Echinacea **Dietary triggers** • Food chemicals/additives (if person is intolerant) • Thermal effects e.g. cold drinks	**Respiratory tract infections** **Certain medicines** • Aspirin (for purpose of desensitisation–requires specialist supervision) • Anticholinesterases and cholinergic agents **Comorbid medical conditions** • Hay fever/rhinosinusitis • Gastroesophageal reflux disease • Nasal polyposis • Obesity • Upper airway dysfunction **Physiological and psychological changes** • Extreme emotions • Hormonal changes e.g. menstrual cycle • Pregnancy • Sexual activity

Adapted with permission from the Australian Asthma Handbook, Version 2.2. © 2022 National Asthma Council Australia.

3.5 Sleep hygiene [2–5]

- OSA is high among people with asthma and is associated with upper and lower airway inflammation
- Medicines, difficulty breathing, anxiety and depression may prevent people with asthma from sleeping well at night
- Assess a patient's daytime sleepiness and OSA risk by using a validated tool. If they score highly refer to a sleep specialist. See Resource 6.

3.6 Asthma control [2–4]

- Ascertain the patient's recent level of asthma symptom control using Table 3.
- Recent asthma symptom control is based on symptoms over the previous 4 weeks
- When counting the times a patient uses their reliever puffer, do not include times

taken before exercise (dose counters are now available on inhalers)

Table 3. Definition of levels of recent asthma symptom control in adults and children > 12 [2,3]

In the past 4 weeks, has the patient had	Well controlled	Partly controlled	Poorly controlled
• Daytime symptoms >2 per week? • Need for reliever >2 per week? • Any activity limitation due to asthma? • Any night waking due to asthma?	None of these	1–2 of these	3 or more of these

Sample questions for reviewing asthma control

- How often does the person:
  - use their reliever puffer? How many puffs? How long does it last?
  - need a new prescription?
  - wheeze, become short of breath or cough?
  - wake at night due to wheezing, shortness of breath or coughing?
  - use a preventer puffer? What dose? How many puffs per day?
  - missed time from school, work or sport due to asthma?
  - visited a GP/hospital emergency for asthma symptoms?

4. Medicines for adults and children > 12 with asthma

- Use Flowchart 2. to assist with the steps to determine practical management and optimal medicine use for the patient with asthma

4.1 Correct medicine use [2–4]

- Monitor medicine adherence and correct inhaler technique according to product instructions. See Resource 4.

Always use a spacer for metered dose inhalers (MDI) to reduce local adverse effects and increase delivery to the airways

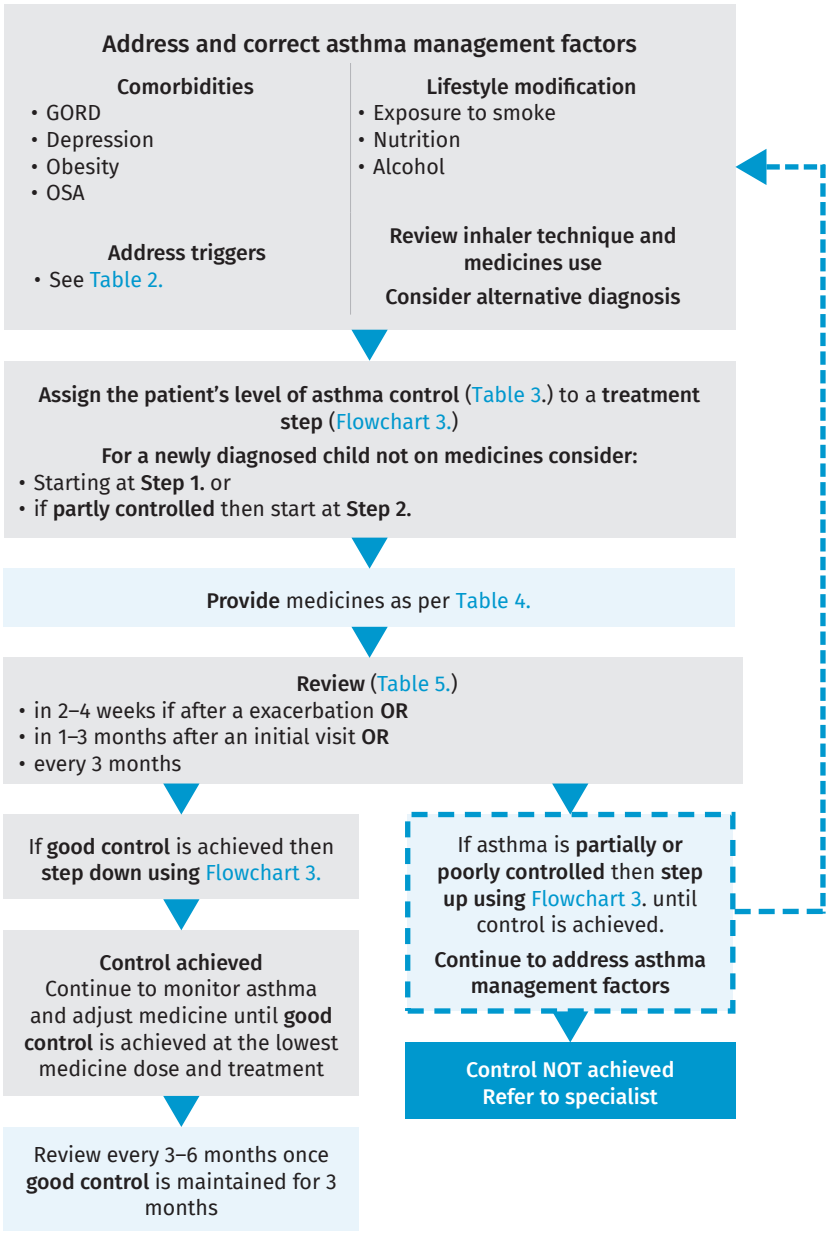
- SABA should only be used at the lowest dose and frequency when asthma symptoms occur or if prescribed for use before exercise

NOTE:
The risk of severe exacerbations and death is higher in patients who:
- overuse their SABA
- use an as-needed SABA in the absence of inhaled corticosteroids
- use inhaled corticosteroids incorrectly or infrequently
- are dispensed three or more canisters of SABA a year

4.2 Medicine precautions in asthma [2–4]

- Any newly obtained medicines (prescriptions, over the counter or complimentary) should be checked for asthma trigger risk. See Table 2.
- Sedatives are contraindicated during an acute asthma episode

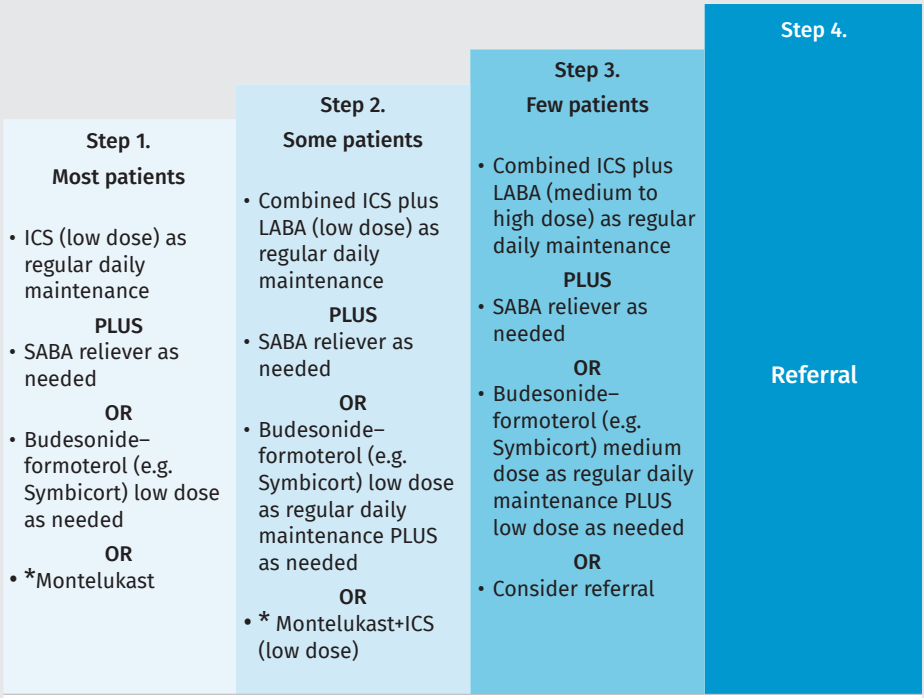
Flowchart 2. Intervention flowchart to achieve asthma control [2,3,6]



4.3 Medicine review [2,3,6]

- Patients should be reviewed:
  - 2–4 weeks after an exacerbation **OR**
  - 1–3 months after an initial visit with preference given to 3 months to ascertain the effectiveness of the medicine to control the asthma **OR**
  - every 3 months
- If patient's asthma is **poorly controlled** after 1–3 months, **step up** treatment
- See Flowchart 3.
- If **good control** is achieved for 2–3 months, **step down** treatment to the least medicine required to maintain control
- Monitor frequently once **good control** is achieved so that adjustments can be made in response to worsening symptoms or episodes of exacerbations

Flowchart 3. Stepped approach to adjusting asthma medicine in adults and children > 12 [2,3,6]



The use of SABA alone should be considered **ONLY** for patients with very infrequent symptoms and no risk factors for exacerbations

* Montelukast can be used in children aged 12–14 years or in adults with exercise induced asthma. Review recent control and triggers regularly (see Tables 2. and 3.)

Table 4. Medicines for adults and children > 12 with asthma [2,3,6]

SABA (reliever)	
Salbutamol (pMDI)	• 100–200 micrograms (1–2 puffs) inhaled PRN
Terbutaline (DPI)	• 500 micrograms (1 puff) inhaled PRN
ICS • Specific doses are tailored to level of asthma control • Minimise risk of oropharyngeal candidiasis by rinsing mouth with water after use	
Beclometasone (pMDI)	• Low 50–100 micrograms inhaled bd • Med 200 micrograms inhaled bd • High 300 or 400 inhaled micrograms bd
Budesonide (DPI)	• Low 100–200 micrograms inhaled bd • Med 400 micrograms inhaled bd • High 600 or 800 micrograms inhaled bd (to max. 2400 micrograms daily)
*** Fluticasone propionate** (pMDI or DPI)	• Low 50–100 micrograms inhaled bd • Med 125–250 micrograms inhaled bd • High > 250 micrograms inhaled bd
Combined ICS–LABA • Budesonide/formoterol as a reliever replaces any previous reliever e.g. Salbutamol (Ventolin®), except in an emergency	
Budesonide and formoterol (maintenance and reliever e.g. Symbicort®)	**Reliever only - low dose** • DPI (Symbicort Turbuhaler) 200/6 micrograms: – 1 puff inhaled PRN , repeat after a few minutes as required to a max of 6 puffs on a single occasion. Daily max. 12 puffs **OR** • pMDI (Symbicort Rapihaler) 100/3 micrograms: – 2 puffs inhaled PRN, repeat after a few minutes as required to a max of 12 puffs on a single occasion. Daily max. 24 puffs **Maintenance and reliever** • Low pMDI or DPI 100/3 micrograms: – 2 puffs inhaled bd PLUS reliever doses as above • Med DPI 200/6 micrograms: – 1–2 puffs inhaled bd PLUS reliever doses as above • High DPI 400/12 micrograms: – 1–2 puffs inhaled bd PLUS a low dose reliever as above **NOTE Max dose includes reliever and maintenance doses combined**
Fluticasone propionate and formoterol (pMDI e.g. Flutiform®)*****	• Low 50/5 micrograms 2 inhaled puffs bd • Med 125/5 micrograms 2 inhaled puffs bd • High 250/10 micrograms 2 inhaled puffs bd
Fluticasone propionate and salmeterol (DPI or pMDI e.g. Seretide®, Pavtide®)	• Low 100/50 micrograms DPI 1 puff inhaled bd OR 50/25 micrograms MDI 2 puffs bd • Med 250/50 micrograms DPI 1 puff inhaled bd OR 125/25 micrograms MDI 2 puffs bd • High 500/50 micrograms DPI 1 puff inhaled bd OR 250/25 micrograms MDI 2 puffs bd
LTRA	
*** Montelukast (oral)**	• 5 mg PO nocte (for 6–14 years) • 10 mg PO nocte (for > 15 years)

***See LAM and PBS for medicine indications and restrictions**

Table 5. Reviewing and adjusting asthma treatment for adults and children > 12 [2,3,6]

Treatment	Review	Treatment response	
		Good	None
SABA	**4 weeks**	• Continue minimal SABA use as needed • Review in 2–3 months	• If asthma management factors optimal then **Step up** • Add ICS (low dose) • Review in 4 weeks
ICS (low dose)	**4 weeks**	• If asthma management factors optimal then continue treatment and review in 2–3 months • After 2–3 months **Step down**	• If asthma management factors optimal then **Step up** • Increase ICS/LABA (low dose) • Review in 4 weeks
ICS–LABA (low dose)	**4 weeks**	• If asthma management factors optimal then continue treatment and review in 2–3 months • After 2–3 months **Step down**	• If asthma management factors optimal then **Step up** • Increase ICS/LABA (medium to high dose) • Review in 4 weeks
ICS–LABA (medium to high dose)	**4 weeks**	• If asthma management factors optimal then continue treatment and review in 2–3 months • After 2–3 months **Step down**	• If asthma management factors optimal then • **Refer for specialist review**

5. Cycle of care

Cycle of care summary for adults and children over 12 with asthma

Action	Dx	Good control	Partial control	Poor control and smokers
Height	✓	-	-	-
Weight	✓	12 mthly	6 mthly	6 mthly
Spirometry	✓	12 mthly	6 mthly	3 mthly
Social-emotional wellbeing	✓	12 mthly	6 mthly	3 mthly
Lifestyle modification	✓	12 mthly	6 mthly	3 mthly
Self-management education	✓	12 mthly	6 mthly	3 mthly
Inhaler technique	✓	Each visit		
Asthma action plan and asthma first aid	✓			
Symptom review	✓	12 mthly	4 wkly and when changing medicines	
Medicine review	✓	12 mthly		
MO/NP review	✓	12 mthly	6 mthly	3 mthly
RN/IHW review	✓	12 mthly	6 mthly	3 mthly
Specialist MO	✓	Any uncontrolled or difficult to treat asthma		
Influenza, pneumococcal, pertussis and COVID-19 vaccines	✓	Recommended. See the *Australian Immunisation Handbook* for schedule		
Comorbidity management	Each time patient is assessed for asthma control			

6. References

- All Chronic Conditions Manual references are available on the Office of Rural and Remote Health website

7. Resources

1. The Spirometry Handbook
2. Asthma resources
3. Asthma action plan and the First Aid for Asthma chart
4. Inhaler use videos and printable instructions
5. Quitline website with resources
6. The Epworth Sleepiness Scale and STOP-Bang questionnaire

Asthma (children 1–12 years)

High risk groups

- Children 1–12 years with a diagnosis of asthma
- Children 1–12 years who are exposed to asthma triggers. See Table 2.

Urgent referral

- For an acute asthmatic episode see the *Primary Clinical Care Manual*
- All infants < 12 months with a clinically significant wheeze should be reviewed urgently by an MO/NP

Special considerations

- A prior diagnosis of asthma should be corroborated by documented evidence

1. What is asthma? [1–4]

- See Asthma (adults and children > 12), page 204

2. Diagnosis of asthma in children 1–12 years [1–4]

- In children, asthma diagnosis is based primarily on:
  - history of recurrent or persistent wheeze
  - presence of allergies or family history of asthma and allergies
  - absence of physical findings that suggest an alternative diagnosis
  - tests that support the diagnosis
  - a consistent clinical response to an inhaled bronchodilator or preventer
- Diagnosing children with asthma is difficult because:
  - spirometry can be difficult
  - respiratory symptoms such as cough and wheeze are common
  - those who respond to inhalers often do not have asthma when older
- Table 1. outlines findings that increase or decrease the likelihood of asthma

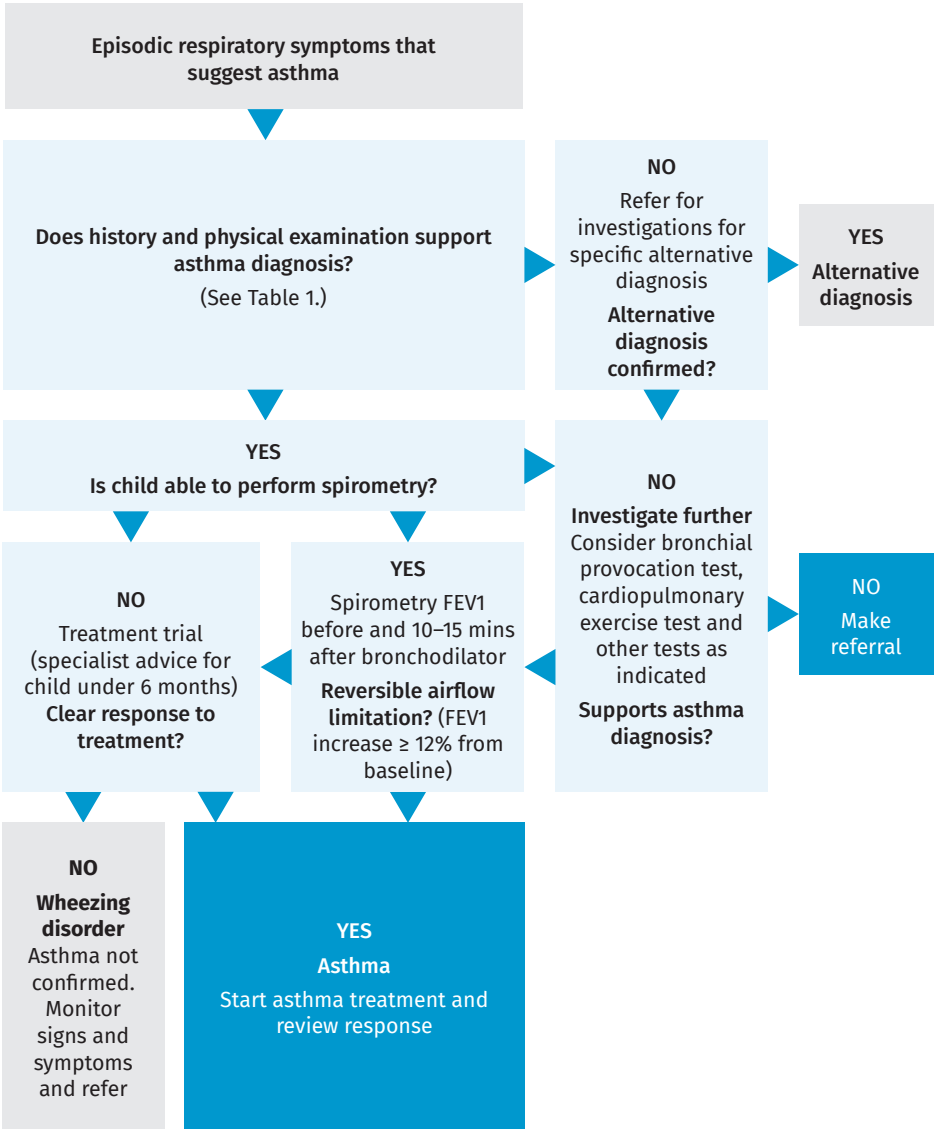
Table 1. Findings that increase or decrease the probability of asthma in children 1–12 years

Asthma more likely	Asthma less likely
More than one of these symptoms • Wheeze • Difficulty breathing • Feelings of tightness in the chest • Cough **AND** **Any of** • Symptoms recur frequently. See Table 3. • Symptoms worse at night and in the early morning • Symptoms triggered by exercise, exposure to pets, cold air, damp air, emotions, laughing • Symptoms occur when child doesn't have a cold • History of allergies e.g. hay fever, atopic dermatitis • Family history of allergies • Family history of asthma • Widespread wheeze heard on auscultation • Symptoms respond to treatment trial of reliever, with or without a preventer • Lung function measured by spirometry increases in response to rapid-acting bronchodilator • Lung function measured by spirometry increases in response to a treatment trial with inhaled corticosteroid (where indicated)	**Any of** • Symptoms only occur when child has a cold, but not between colds • Isolated cough in the absence of wheeze or difficulty breathing • History of moist cough • Dizziness, light-headedness or peripheral tingling • Repeatedly normal physical examination of chest when symptomatic • Normal spirometry when symptomatic (children old enough to perform spirometry) • No response to a trial of asthma treatment • Clinical features that suggest an alternative diagnosis

Adapted with permission from the Australian Asthma Handbook, Version 2.2 © 2022 National Asthma Council Australia.

- Alternative causes of a recurrent wheeze in children may include:
  - lower (infants) and upper (older children) viral respiratory tract infections
  - aspirate (reflux)
  - inhaled foreign body
  - rhino-sinusitis
  - tuberculosis
  - cystic fibrosis
  - bronchopulmonary dysplasia
  - congenital malformation of the airways
  - immune deficiency
  - congenital heart disease
- Flowchart 1. illustrates the steps to confirm an asthma diagnosis in children under 12

Flowchart 1. Steps to diagnosing asthma in children 1–12 years



3. Management of children 1–12 years with asthma [1–4,6,7]

- The goals of managing asthma are to:
  - engage the child and parent/carer to identify asthma management goals
  - minimise impact of asthma on quality of life
  - optimise asthma symptom control with minimal medicines

- minimise risk of exacerbations and loss of lung function
- minimise adverse effects of treatment
- identifying and managing comorbid conditions including:
  - hay fever; common in children and associated with poor asthma control
  - Overweight and obesity (child), page 372

3.1 Support child self-management [8]

- See Lifestyle modifications, page 18 with particular attention to Smoking cessation, page 48 and Diet and nutrition, page 29
- Provide culturally appropriate resources about asthma and support services. See Resource 1.
- In partnership develop an asthma action plan (Resource 2.) identifying:
  - asthma triggers. See Table 2.
  - symptoms that indicate asthma is worsening
  - actions to take when symptoms worsen
  - when and how to use medicines and correct inhaler use. See Resource 3.
  - doses and frequencies of regular medicines
  - how to adjust treatment in response to particular signs and symptoms
  - when to start oral corticosteroids
  - when and how to seek urgent medical help
- At each visit the asthma action plan should be reviewed and adjusted as required
- Patients who accept their asthma symptoms as normal, require added support to show that symptoms and quality of life will improve with correct medicine use, lifestyle modification and regular monitoring. See Resource 1.
- Encourage the patient to identify barriers to adequate lifestyle modification and medical adherence and create goals to overcome those barriers. See Engaging our patients, page 19

3.2 Social-emotional support [3,8]

- Parents/carers of children with chronic conditions experience high levels of stress and anxiety
- See Social-emotional wellbeing, page 58

Table 2. Summary of asthma triggers for children 1–12 years

Avoidable triggers	Unavoidable triggers
Always avoid	**Do not avoid**
• Cigarette smoke	• Exercise • Laughter
Avoid or reduce if possible	**Manage**
Allergens • Animals • Cockroaches • House dust mite • Moulds • Allergens at school/daycare • Pollens **Airborne/environmental irritants** • Cold/dry air • Fuel combustion e.g. gas heaters • Home renovation materials • Household aerosols • Moulds (airborne) • Irritants at school/daycare • Outdoor industrial and traffic pollution • Perfumes/scents/incense • Smoke e.g. cigarettes, vapes, camp fires • Thunderstorms in spring and early summer (grass pollen) **Certain medicines** • Aspirin and NSAIDs (in patients with aspirin-exacerbated respiratory disease) • Bee products e.g. pollen, propolis, royal jelly • Echinacea **Dietary triggers** • Food chemicals/additives (if child is intolerant) • Thermal effects e.g. cold drinks	**Respiratory tract infections** **Certain medicines (requires close specialist supervision)** • Aspirin (when given for purpose of desensitisation) • Anticholinesterases and cholinergic agents • Beta blockers **Comorbid medical conditions** • Hay fever/rhinosinusitis • Gastroesophageal reflux disease • Nasal polyposis • Obesity • Upper airway dysfunction **Physiological and psychological changes** • Extreme emotions • Hormonal changes

3.3 Avoiding cigarette smoke [1,3,4]

- Being subjected to cigarette smoke is a primary trigger for developing and exacerbating asthma symptoms in children
- Be mindful of the parent/carer smoking behaviour and frequency when assessing a child's recent asthma symptom control
- Reinforce the dangers of passive smoking, particularly in homes and cars
- Regularly encourage the parent/carer to quit smoking. See Smoking cessation, page 48

3.4 Nutrition [1,2]

- Weight reduction in overweight or obese children reduces asthma symptoms. Consider a referral to a dietitian
- The risk of asthma exacerbations is reduced in those who have a diet high in fresh fruit and vegetables and oily fish
- A diet high in processed foods and soft drink increases the risk of developing asthma
- See Diet and nutrition, page 29

3.5 Child asthma control

- Ascertain the child's recent level of asthma symptom control using Table 3.
- Recent asthma symptom control is based on symptoms over the previous 4 weeks
- When counting the times a child uses their reliever puffer, do not include times taken before exercise

Table 3. Definition of levels of recent asthma symptom control in children [1,3]

In the past 4 weeks, has the child had	Well controlled	Partly controlled	Poorly controlled
Children 6–11 years • Daytime symptoms >2 per week? • Need for reliever >2 per week? • Any activity limitation due to asthma? • Any night waking due to asthma?	None of these	1–2 of these	3 or more of these
Children 1–6 years • Daytime symptoms for more than a few minutes >1 per week? • Need for reliever >1 per week? • Any activity limitation due to asthma? • Any night waking or coughing due to asthma?			

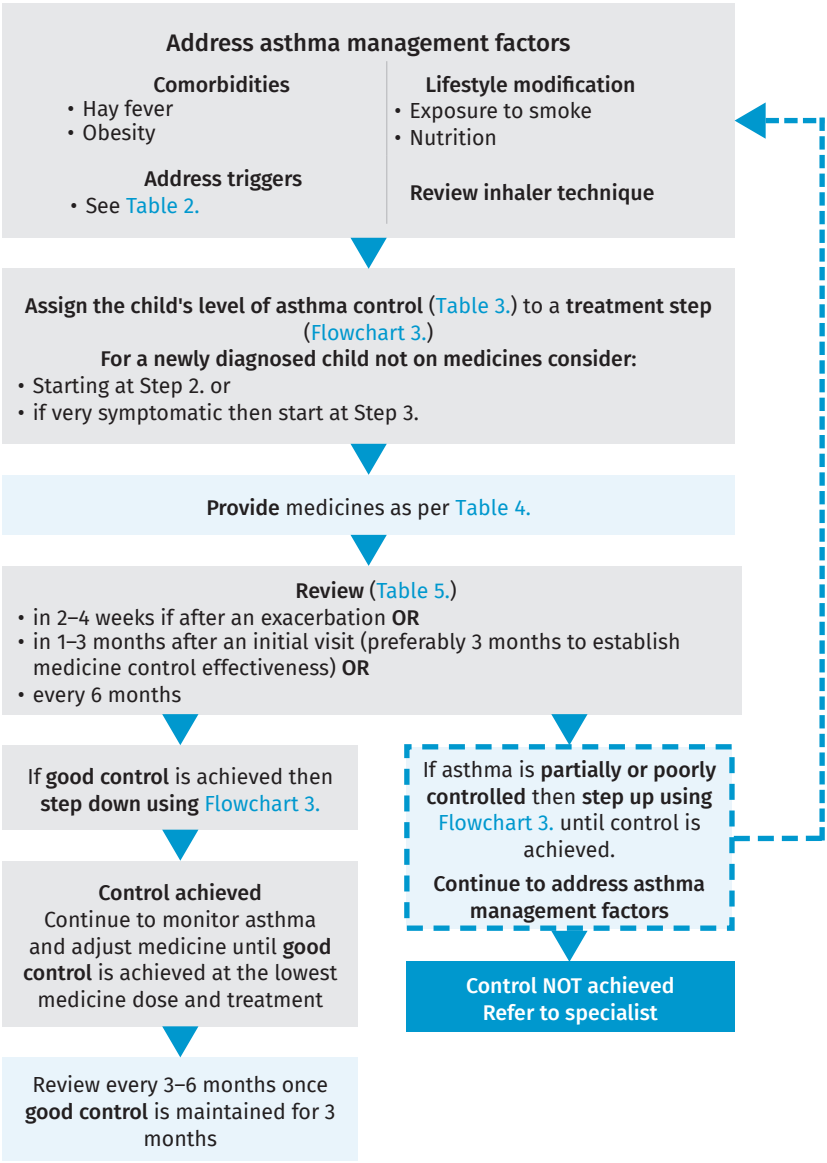
Sample questions for reviewing asthma control in children

- How often does the child:
  - use their reliever puffer? How many puffs? How long does it last?
  - need a new prescription?
  - wheeze, become short of breath or cough?
  - wake at night due to wheezing, shortness of breath or coughing?
  - use a preventer puffer? What dose? How many puffs per day?
  - miss time from school or sport due to asthma?
  - visit a GP/hospital emergency for asthma symptoms?

4. Medicines for children 1–12 years with asthma [1,3,4]

- Use Flowchart 2. to determine optimal medicine use for the child with asthma
- Medicines should be reviewed by the MO/NP or pharmacist according to child's response and current condition

Flowchart 2. Intervention to achieve asthma control



4.1 Correct inhaler use [3]

- Regular Inhaler and spacer use technique should be demonstrated, taught and monitored in this age group. See Resource 3.

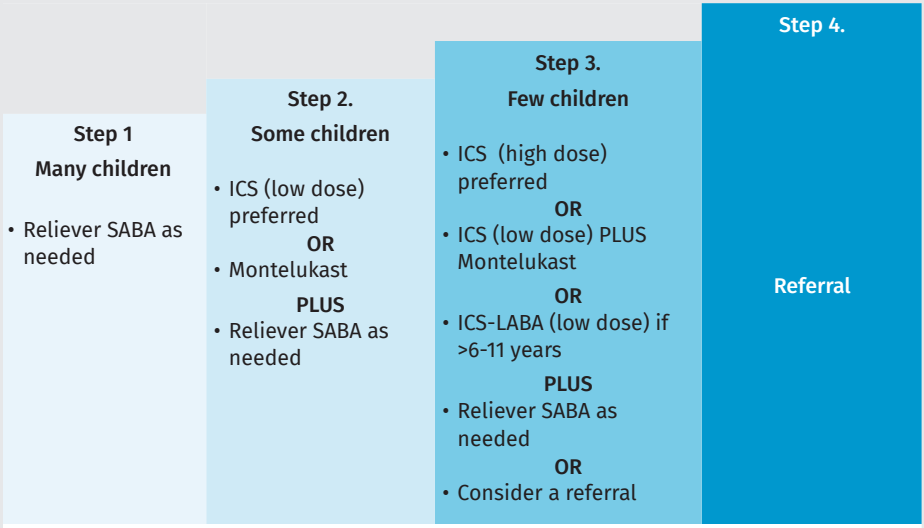
To reduce adverse effects and increase delivery to the airways, when using inhaled medicines, children:
- < 4 years should use a pMDI plus a spacer with face mask
- > 4 years should use a pMDI plus spacer with a spacer mouthpiece

- SABA should only be used at the lowest dose and frequency required if:
  - asthma symptoms occur (e.g. wheezing or breathlessness)
  - before exercise for those with known exercise induced asthma

4.2 Medicine precautions in asthma [1,3,5]

- Any newly obtained medicines (prescriptions, over the counter or complimentary) should be checked for asthma trigger risk. See Table 2.
- Sedatives are contraindicated during an acute asthma episode

Flowchart 3. Stepped approach to adjusting asthma medicine in children 1–12 years [2,3,9]



Regularly review recent control and triggers in all patients (see Table 2. and 3.)

Table 4. Medicines for children 1–12 years with asthma [1,3,4,9]

SABA (reliever)	
Salbutamol (pMDI) 100 micrograms (1-2 puffs) inhaled PRN **Terbutaline** (DPI) 500 micrograms (1 puff) inhaled PRN. Only for use in children < 8 years	• DPI inhalers (i.e. terbutaline) require correct technique to work adequately. May be an issue for younger children
***LTRA** (preventer) 2–12 years only	
Montelukast (chewable tablet) • 4mg PO daily for 2–5 years of age • 5mg PO daily for 6–12 years of age	• An alternative to ICS (low dose) • Increased risk of neuropsychiatric adverse effects
ICS (preventer) • Specific doses are tailored to the child's level of asthma control • Minimise risk of oropharyngeal candidiasis by rinsing mouth with water after use	
Beclometasone dipropionate (MDI) • Low 50–100 micrograms inhaled bd • High 100–200 micrograms inhaled bd	• **Only for use in children > 5 years**
Budesonide (DPI) • Low 100–200 micrograms inhaled bd • High 200–400 micrograms inhaled bd	• DPI inhalers (i.e. terbutaline) require correct technique to work adequately. May be an issue for younger children • Budesonide for use in children > 5 years only
Fluticasone propionate (pMDI and DPI) • Low 50–100 micrograms inhaled bd (max. for children < 5 years) • High 100–250 micrograms inhaled bd	
ICS–LABA (preventer 6–11 years) • Minimise risk of oropharyngeal candidiasis by rinsing mouth with water after use	
Fluticasone propionate and salmeterol (Seretide®) • 50/25 micrograms pMDI (2 puffs) inhaled bd • 100/50 micrograms DPI (1 puff) inhaled bd	

***See LAM and PBS for medicine indications and restrictions**

4.3 Medicine review [3]

- Children should be reviewed:
  - 2–4 weeks after an exacerbation **OR**
  - 1–3 months after an initial visit with preference given to 3 months to ascertain the medicines effectiveness to control the asthma **OR**
  - every 6 months
- If a child's asthma is **poorly controlled** within 1–3 months **step up** treatment
- If **good control** is achieved for 6 months then **step down** treatment to the least medicine required to maintain control
- Ongoing monitoring is necessary every 3–6 months once **good control** is achieved so that adjustments can be made in response to worsening symptoms or episodes of exacerbations
- Children should be reviewed 3–6 weeks after asthma therapy has been discontinued to assess for residual symptoms
- Overuse of SABA requires review as this is a sign of **poor control**

Table 5. Reviewing and adjusting asthma preventer treatment for children 1–12 years [1,3,4,9]

Treatment	Review	Treatment response	
		Good	None
SABA	4 wkly	• Continue SABA use • Review in 3–6 months	• If asthma management factors optimal then **Step up** • Add ICS (low dose) • Review in 2–4 weeks
ICS (low dose)	4 wkly	• If asthma management factors optimal then continue treatment and review in 6 months • After 6 months **Step down** if well controlled	• If asthma management factors optimal then **Step up** • Increase ICS (high dose) or • Add montelukast to ICS (low dose) • Review in 2–4 weeks
ICS (high dose) **or** **ICS** (low dose) **plus LTRA**	4 wkly	• If asthma management factors optimal then continue treatment and review in 6 months • After 6 months **Step down** if well controlled	• If asthma management factors and inhaler technique optimal then **Refer for specialist review**

5. Cycle of care

Cycle of care summary for children 1–12 years with asthma

Action	Dx	Good control	Partial control	Poor control
Height	✓	3 mthly until 2 years of age for high risk groups otherwise as per child health check		
Weight	✓	As above		
Inhaler technique	✓	12 mthly	6 mthly	3 mthly
Spirometry	✓	12 mthly	6 mthly	3 mthly
Social-emotional wellbeing	✓	12 mthly	6 mthly	3 mthly
Lifestyle modification	✓	12 mthly	6 mthly	3 mthly
Self-management education	✓	12 mthly	6 mthly	3 mthly
Asthma action plan and asthma first aid	✓	At each visit		
Symptom review	✓	4 wkly or when changing medicines		
Medication review	✓			
MO/NP review	✓	12 mthly	6 mthly	3 mthly
RN/IHW review	✓	12 mthly	6 mthly	3 mthly
Specialist MO	✓	Any uncontrolled or difficult to treat asthma Any child under 2 years of age requiring a SABA		
Influenza, pneumococcal, pertussis and covid vaccines	Recommended. See the *Australian Immunisation Handbook* for the schedule			
Comorbidity management	Each time child is assessed for asthma control			

6. References

- All Chronic Conditions Manual references are available on the Office of Rural and Remote Health website

7. Resources

1. Asthma resources
2. Asthma action plan and the First Aid for Asthma chart
3. Inhaler use videos and printable instructions

Atrial fibrillation

High risk groups [1]

- > 65 years of age
- Aboriginal and Torres Strait Islander people > 55 years of age
- Those with:
  - Hypertension, page 345
  - Heart failure, page 325
  - Coronary heart disease, page 264
  - Overweight and obesity (adult), page 366
  - Diabetes, page 304
  - Chronic kidney disease, page 242
  - valvular heart disease
  - dilated cardiomyopathy
- Family history of atrial fibrillation (AF)

Urgent referral

- Consult specialist if:
  - haemodynamically unstable AF may require cardioversion with sedation
  - long-term control of AF has been ineffective

1. What is AF? [1,2]

- An irregular and often rapid ventricular rate due to an unrecognised or under-treated insult that continues to damage the atrial myocardium
- Can arise in a normal heart but usually with:
  - major structural heart valve abnormalities or
  - Heart failure, page 325, Overweight and obesity (adults) or Diabetes, page 304
- Symptoms include palpitations, shortness of breath and fatigue, but many patients are asymptomatic
- Symptoms can result from acute episodes of new onset AF, or from breakthrough rapid episodes in those with an established diagnosis of AF
- The longer a person remains in AF, the greater the likelihood of developing an atrial clot or having a stroke, causing serious morbidity or death
- Deaths from complications (i.e. heart failure) remain high, despite adherence to treatment
- Aboriginal and Torres Strait Islander people have a higher incidence of and mortality attributed to AF

2. Diagnosis of AF [1,2]

- Opportunistic screening of high risk groups by:
  - pulse palpation, and if irregular or unsure
  - an ECG
- Confirmed with a documented ECG rhythm episode of irregular RR intervals with

no discernible P waves, lasting > 30 seconds

- Those with pacemakers and implanted devices should be examined regularly for atrial high-rate episodes, and confirmed by an atrial ECG to be AF
- An echocardiogram is performed in all patients with newly diagnosed AF to identify and manage:
  - valvular heart disease
  - quantifying left ventricle function
  - atrial size

Table 1. Patterns of AF [1,2]

Paroxysmal	• Episodes that: – self-terminate between 2–7 days – may recur with variable frequency
Persistent	• Episodes that last > 7 days and do not self-terminate
Long standing persistent	• Lasting for ≥ 1 year • Patient requires a rhythm control strategy
Permanent	• Clinical and personal acceptance of irreversible AF rather than attributed to pathophysiology • No further attempts to restore or maintain sinus rhythm

3. Management of AF [1,2]

- The goals of managing AF are to:
  - reduce risk of thromboembolism and stroke
  - relieve symptoms
  - aggressively identify and manage comorbidities, specifically:
    - Hypertension, page 345
    - Heart failure, page 325
    - Coronary heart disease, page 264
    - valvular heart disease
    - Overweight and obesity (adult), page 366
    - Diabetes, page 304
    - Chronic kidney disease, page 242
    - Alcohol reduction, page 24
    - hyperthyroidism

3.1 Support patient self-management [1]

- See Lifestyle modifications, page 18
- Discuss what AF is and how it progresses
- Provide AF Resources 1–5.
- Encourage the patient to identify barriers to adequate lifestyle modification and medical adherence and create goals to overcome those barriers. See Engaging our patients, page 19

Table 2. Target goals to manage AF [1]

Weight loss	• At least 10% weight loss or BMI < 27 kg/m^2
Exercise	• 210 minutes of wkly aerobic exercise
Blood pressure	• ≤ 130/80 mm Hg
Sleep apnoea	• CPAP therapy • See Physical activity and sleep, page 34
Diabetes	• HbA1c ≤ 6.5%
Lipids	• See Dyslipidaemia, page 317
Smoking cessation	• See Smoking cessation, page 48
Alcohol consumption	• See Alcohol reduction, page 24

3.2 Social-emotional support

- See Social-emotional wellbeing, page 58

3.3 Physical activity [1]

- Physical activity strengthens the atrial myocardium and reduces progression of AF
- Exercise that improves aerobic capacity is recommended in individuals with symptomatic AF to reduce the AF burden
- See Physical activity and sleep, page 34

3.4 Weight reduction [1–3]

- Being overweight places increased demand on the heart which increases the risk of developing AF
- The greater the weight loss, the more likely sinus rhythm is maintained
- Overweight and obese patients should begin an intensive weight management program targeting:
  - a ≥ 10% loss of body weight or
  - a final BMI < 27 kg/m^2
- These targets have shown marked:
  - reductions in AF symptom burden, episode frequency and duration
  - improvements in quality of life
- See Overweight and obesity (adult), page 366

3.5 Smoking cessation [1–3]

- Smoking is a risk factor for all comorbidities linked to AF
- Encourage patients to quit smoking. See Smoking cessation, page 48

3.6 Alcohol reduction

- Excessive alcohol consumption is a risk factor for developing and progressing AF
- See Alcohol reduction, page 24

3.7 Obstructive sleep apnoea (OSA) [1–3]

- Sleep apnoea sustains and worsens AF
- There is a strong relationship between obesity and OSA, both conditions being common in patients with AF
- Addressing sleep apnoea improves sinus rhythm with rhythm-control strategies
- Manage by:
  - weight reduction. See Overweight and obesity (adult), page 366, Diet and nutrition, page 29 and Physical activity and sleep, page 34
  - avoiding CNS depressants e.g. opiates, alcohol
  - CPAP therapy
- Assess a patient's daytime sleepiness and OSA risk by using a validated tool. If they score highly refer to a sleep specialist. See Resource 6.

4. Medicines for AF [2]

- Initiation of medicines to treat AF is done by, or in consultation with, a cardiologist

4.1 Prevention of thromoembolic events [1,2,3,6]

- All patients with AF should be considered for antithrombotic therapy
- The choice of antithrombotic medicine is determined by those with moderate-severe mitral stenosis or mechanical heart valve (**valvular-AF**) and those without (**non-valvular AF**) . See Flowchart 1.

Flowchart 1. Antithrombotic therapy for patients with AF

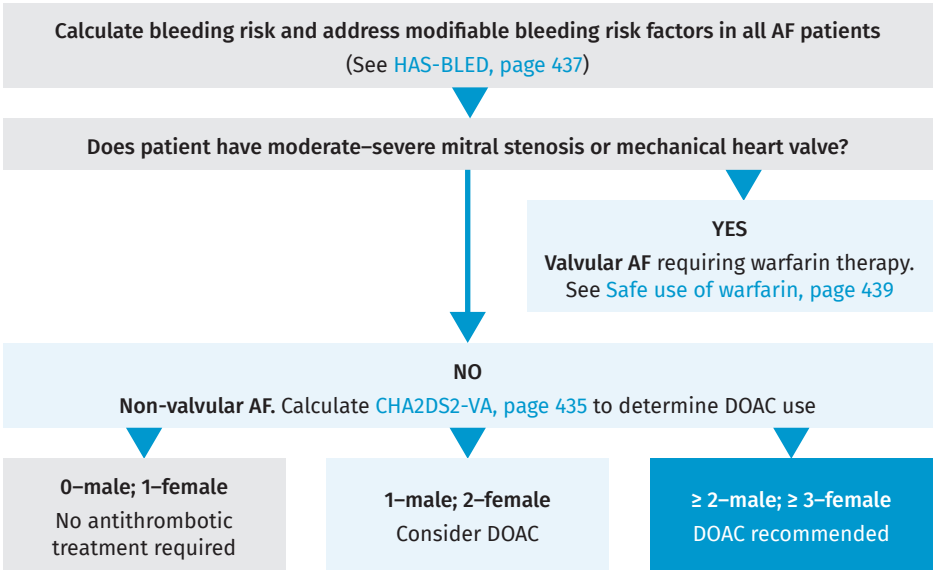


Table 3. Anticoagulant therapy for patients with AF [1–4]

Warfarin

- Only for those with **valvular AF**

See Safe use of warfarin, page 439 for detailed use and education

Direct oral anticoagulants (DOACs)

- For those with **non-valvular AF. Lack of evidence for valvular AF. May be harmful**
- Have a predictable dose response and do not need routine anticoagulation monitoring
- Follow dosage recommendations exactly. Underdosing may not prevent thromboembolism or stroke
- Absolute contraindications to DOAC include active serious bleeding (identify and treat), comorbidities (e.g. severe thrombocytopenia < 50 platelets/lL, severe anaemia under investigation), or a recent high-risk bleeding event such as intracranial haemorrhage (ICH)

Dabigatran

- < 75 years age and CrCl > 50 mL/min then 150 mg PO bd
- < 75 years age and CrCl 30–50 mL/min, or risk of major bleeding then 110 mg PO bd
- ≥ 75 years and CrCl > 30 mL/min then 110 mg PO bd
- Avoid if CrCl < 30 mL/min

Rivaroxaban

- CrCl ≥ 50 mL/min then 20 mg PO, once a day
- CrCl ≥ 15 to 49 mL/min then 15 mg PO, once a day
- Avoid if CrCl < 15 mL/min

Apixaban (non-LAM)

- 5 mg PO bd OR
- If ≥ 2 bleeding risk factors then 2.5 mg PO bd
- Avoid if CrCl < 25 mL/min

4.2 Rate-control strategy [1–3]

- Attempts to improve haemodynamic status, reduce symptoms and control heart rate using medicines
- For **symptomatic and asymptomatic patients irrespective of LV function**
- Aim for resting HR < 90 bpm
- Usually relies on oral medicines, IV is rarely necessary
- Choice of medicine will depend on absence or presence of LV dysfunction. See Table 4. for long-term **rate-control** medicines

4.3 Rhythm-control strategy[1–3]

- Attempts to reduce symptoms and restore and maintain sinus rhythm using medicines (cardioversion)
- Is for patients who are s**ymptomatic or have left ventricular dysfunction** that might be secondary to AF
- Should be avoided if a person has been in AF > 48 hours until they have been fully anticoagulated
- Should be weighed against adverse effects, and the patient's symptoms and preference
- See Table 5. for long-term **rhythm-control** medicines
- Select, document and communicate a rate-control or rhythm-control strategy with the patient and review regularly

Table 4. Long-term rate-control of AF [1–4]

Beta blockers • To attain and maintain long-term control of ventricular HR
Atenolol 25 mg PO, daily (to max. 100 mg daily) **Metoprolol** 25 mg PO, bd (to max. 100 mg bd)
Calcium channel blockers • If beta blockers are not tolerated or contraindicated • To attain and maintain long-term control of ventricular HR • Avoid in patients with left ventricular dysfunction
Verapamil MR 180 mg PO, daily (to a max. 480 mg bd) **Diltiazem MR** 180 mg PO, daily (to max. 360 mg daily)
Amiodarone • For those with left ventricular dysfunction, or if above medicines not effective • Used as an add-on to other medicines • LAM restricted. Must be prescribed by cardiologist before use
Amiodarone 200 mg PO, daily
Digoxin • May be considered as add-on therapy to above medicines or if above are contraindicated • Monitor 5 days after starting or changing dose, then 6 mthly. Adjust to 2 wkly for those with renal impairment • Aim for levels of 0.5–0.8 microgs/L. Avoid levels > 1.2 microg/L
Digoxin 62.5 to 250 microgs PO, daily, according to age, body weight and CrCl
For those with AF whose rate is not adequately controlled by medicines, seek specialist cardiology advice

Table 5. Long-term rhythm-control of AF [1–4]

Flecanide • To maintain sinus rhythm in those who have normal LV function and no coronary disease • Use in combination with a beta blocker (i.e. metoprolol or atenolol) or calcium channel blocker (i.e. diltiazem or verapamil) to decrease the risk of conversion to atrial flutter • Contraindicated in heart block, second or third-degree or bifascicular block (without pacemaker), or abnormal ejection fraction or LVH more than 14 mm
Flecainide 50 mg PO, bd (to a max. 150 mg bd)
Sotalol • Monitor for QT prolongation • Cease if QT or QTc interval exceeds 500 milliseconds or increases > 20% from baseline • Use low doses initially • Avoid in renal impairment • Caution with left ventricular dysfunction
Sotalol 40 mg PO, bd (to a max. 160 mg bd)
Amiodarone • For those where above medicines not effective • LAM restricted. Must be prescribed by cardiologist before use
Amiodarone 200 mg PO, tds for 1 week, then bd for 1 week, then once a day
For those with AF who do not respond to antiarrhythmic medicine therapy, seek specialist cardiology advice

5. Cycle of care

Cycle of care summary for AF

Action	Dx	Review frequency
Height	✓	Once only
BMI	✓	6 mthly
Weight	✓	Daily for 2 wks then as clinically required
Waist circumference	✓	3 mthly
Pulse rate and rhythm	✓	Each time medicines supplied or patient visits clinic
Blood pressure	✓	Each time medicines supplied or patient visits clinic
Urinalysis	✓	12 mthly
Fasting blood glucose	✓	12 mthly
Echocardiogram	✓	If significant change in clinical condition otherwise every 2 yrs
Coagulant levels	✓	As per anti-coagulant requirement
Digoxin levels	✓	5 days after starting or changing dose then 6 mthly. Adjust to 2 wkly for those with renal impairment
ECG	✓	12 mthly
Social-emotional wellbeing	✓	Each visit
Lifestyle modification	✓	Each visit
Self management education	✓	Each visit
Influenza, pneumococcal and COVID-19 vaccines	Recommended. See the *Australian Immunisation Handbook* for schedule	
Dietitian	✓	3 mthly
Rate-control strategy	✓	Each visit
Rhythm-control strategy	✓	Each visit
MO/NP review	✓	3–6 mthly
RN/IHW review	✓	3 mthly
Cardiologist	✓	6–12 mthly as per specialist recommendations

6. References

- All Chronic Conditions Manual references are available on the Office of Rural and Remote Health website

7. Resources

1. National Heart Foundation atrial fibrillation information
2. Heart Support Australia
3. Cardiomyopathy Association of Australia
4. Heart Foundation support
5. Heartonline education and toolkits
6. The Epworth Sleepiness Scale and STOP-Bang questionnaire

Bronchiectasis

High risk groups [1,2]

- Those living in rural and remote communities
- Aboriginal and Torres Strait Islander adults and children
- Over 75 years of age
- Those with established lung diseases
- Those with cystic fibrosis, Kartagener's syndrome and primary ciliary dyskinesia
- Those with Chronic obstructive pulmonary disease, page 255
- Rheumatoid arthritis

Urgent referral

- For an acute exacerbation refer to the *Primary Clinical Care Manual*

Special considerations

- Those with cystic fibrosis are managed by a specialist

1. What is bronchiectasis? [1–5]

- A chronic lung condition, defined as the permanent dilatation of the bronchi and bronchioles where the elastic and muscular tissue is destroyed by re-occurring inflammation and infection
- The damage impairs the natural drainage of bronchial secretions resulting in airway obstruction and progressive lung damage characterised by persistent:
  - cough
  - sputum production
  - recurrent respiratory infections
- Symptoms may occur for many years before a diagnosis is confirmed
- Haemophilis influenzae and Pseudomonas aeruginosa pathogens are a primary cause of bronchiectasis airway infections
- Nearly 2% of Aboriginal and Torres Strait Islander children will develop bronchiectasis
- No definite cause can be established in up to half of all patients
- Up to 50% of patients will also have Chronic obstructive pulmonary disease, page 255

2. Diagnosis of bronchiectasis [1–5]

- Bronchiectasis relies on both a clinical and radiological diagnosis
- Predicting mortality and exacerbation rates in bronchiectasis can be undertaken with an online bronchiectasis prediction tool. See Resource 1.

Flowchart 1. Diagnosing bronchiectasis

Initial suspicion of bronchiectasis

Child and adult
- Recurring chest infections (exacerbations)
- Haemoptysis
- Chest pain
- Shortness of breath/wheeze
- Lethargy and exercise limitation
- Chronic sinus inflammation
- Gastroesophageal reflux
- Chronic cough
- Sputum of various quantities

Child specific
- Persistent wet cough not responding to 4 weeks of antibiotics
- More than 3 episodes of chronic (> 4 weeks) wet cough per year responding to antibiotics
- A chest x-ray abnormality persisting > 6 weeks after appropriate therapy

▼

Risk factors
- Living in rural and remote communities
- Aboriginal and Torres Strait Islander
- Over 75 years of age
- Established lung diseases
- Cystic fibrosis, Kartagener's Syndrome and Primary Ciliary Dyskinesia
- COPD

Medical history
- Childhood respiratory infections
- Family history of bronchiectasis, especially cystic fibrosis
- Smoker
- Systemic inflammatory symptoms (joint problems, skin rash, muscle pain, eyes)
- Frequent infective exacerbations

Clinical history
- Cough quality, strength and sputum production
- Chest sounds characterised by focal or generalised noises i.e. crepitations, crackles, or wheeze
- Peripheral signs of chronic lung disease e.g. nail changes (clubbing)

▼

Positive chest CT scan confirms diagnosis

▼

Assess causes

Child and adult
- FBC, IgA, IgM, IgG, IgE
- Sweat test in all children and selected adults
- Sputum culture for bacteria, mycobacteria and non-tuberculous mycobacteria (NTM)
- Spirometry and lung volumes (> 6 years)
- Aspergillus serology

Child specific
- Vaccine responses
- Lower airway specimen
- Lung function if able
- Indoor and outdoor pollution, tobacco exposure
- Immunisation status
- Nutrition status
- Psychosocial
- Other comorbidities

In selected patients
- Bronchoscopy
- Tuberculosis
- HIV
- Other immune tests
- Aspiration tests
- Primary ciliary dyskinesia
- Cystic fibrosis genotypes
- Genetic assessment

3. Management of bronchiectasis [1]

- Management involves improving mucus clearance, while reducing airway bacterial colonisation, inflammation, and structural damage by:
  - minimising symptoms (i.e. cough)
  - reducing hospital admissions
  - preventing lung infections

- improving quality of life
- improving exercise tolerance
- maintaining lung function
- reducing frequency and severity of exacerbations
- prolonging survival
- aggressively identifying and managing comorbidities, including:
  - Chronic obstructive pulmonary disease, page 255
  - severe respiratory infections
  - GORD
  - Asthma (adults and children > 12), page 204
  - chronic bronchitis

3.1 Support patient self-management

- Discuss bronchiectasis and:
  - airway clearance manoeuvres. See Resource 2.
  - how to control breathlessness and Anxiety disorders, page 197
  - develop an action plan. See 3.10 Action plan
  - medicine usage, effects and adherence
  - provide supportive resources. See Resource 3.
- If the patient also has COPD refer them to SMoCC, a phone service that supports patients manage their condition. See Resource 4.
- Encourage the patient to identify barriers to adequate lifestyle modification and medical adherence and create goals to overcome those barriers. See Engaging our patients, page 19

3.2 Social-emotional support

- See Social-emotional wellbeing, page 58

3.3 Smoking cessation [1–4]

- Patients who stop smoking reduce the likelihood of lung infections and bronchiectasis progression
- See Smoking cessation, page 48

3.4 Prevent respiratory infections [1–4]

- Respiratory illnesses contribute to bronchiectasis exacerbations and progression
- Provide Influenza, pneumococcal and COVID-19 vaccines as per the *Australian Immunisation Handbook*

3.5 Avoid environmental pollutants [2]

- Patients should avoid environmental pollutants (see Table 1.) which can exacerbate:
  - coughing
  - sputum volume, consistency and purulence
  - shortness of breath
  - exercise intolerance
  - fatigue
  - haemoptysis

Table 1. Environmental pollutants to avoid in bronchiectasis [2]

- Cigarette and campfire smoke
- Home renovation hazards e.g. dust, particulates
- Workplace allergens and irritants e.g. silicates, dust
- Industrial and traffic pollution e.g. diesel fumes, gases, particulates
- Perfumes/scents/incense
- Food chemicals/additives (if person is intolerant)

3.6 Airway clearance technique [1–4]

- Main therapy to clear excess lung secretions to improve ventilation and reduce hospital presentations
- Technique:
  - start with 5 deep abdominal breaths. Expand chest fully, starting with the diaphragm and lower ribs. Avoid lifting or shrugging shoulders
  - do 30–60 seconds of relaxed breathing. Breathe from the diaphragm. The patient should feel their stomach rising and falling with each breath. Shoulders should be kept as relaxed as possible
  - do another 5 deep abdominal breaths
  - follow this with 30–60 seconds of relaxed breathing
  - take a medium sized breath in and huff the air out a little more forcefully
  - start with 3 cycles of gentle huffs. Finish with 2 cycles of more forceful huffs
  - finish with a cough to clear any secretions left in the main airways
  - repeat above cycle 2–3 times or until no more secretions can be removed
- Refer to a physiotherapist if patient is unable to clear lung secretions
- See Resource 2. for further information

3.7 Improve physical activity tolerance [1–4]

- Enhances airways clearance
- Should include moderate to high intensity aerobic exercises, strength training and mobility exercises
- Refer to an exercise physiologist for pulmonary rehabilitation or exercise program
- See Physical activity and sleep, page 34

3.8 Pulmonary rehabilitation program

- An important hospital avoidance strategy offered to all patients with:
  - poor physical activity tolerance
  - > 2 exacerbations per year
- If no local program available:
  - advocate for a service
  - refer to the Pulmonary Rehabilitation Toolkit. See Resource 5.
  - contact the chronic condition coordinator or the Lung Foundation for rehabilitation program details and training. See Resource 6.

3.9 Nutrition

- Lung disease increases the risk of poor nutrition, weight loss and reduced muscle strength because of:

  - increased energy needs
  - decreased appetite
  - lack of energy to shop, cook or eat meals
  - an increased need for certain vitamins, minerals and antioxidants
- Refer to MO/NP or dietitian if patient has unintended weight loss or weight gain
- See Diet and nutrition, page 29

3.10 Action plan [2]

- Develop an action plan (Resource 7.) with the patient so they can:
  - recognise and monitor exacerbations and severity. See Table 3.
  - intervene early to prevent exacerbations
  - understand and feel comfortable using it
- Review and update action plan each visit, especially when changing medicines. See Table 2.

Table 2. Bronchiectasis action plan

When feeling well	
• Monitor fluid intake, and sputum quality, quantity and colour • Take prescribed medicines • Perform daily airway clearance and exercise routine	• Drink fluids as recommended • Maintain healthy behaviours • Have recommended annual vaccines • Be reviewed by health team as required
If ≥ 3 of these symptoms:	**Action**
• Increased sputum • Change in colour of sputum • New or increased blood in sputum • Increased coughing • Fever or sweats • Increased tiredness • Increased shortness of breath • Increased sinus discharge	• Visit GP for sputum sample • Commence antibiotics if prescribed • Increase airway clearance and exercise routine • Increase fluid intake • Exercise as able
When feeling very unwell	**Action**
• Coughing up a lot of blood • Very short of breath • High fever, chest pain	• Contact doctor immediately • If necessary dial 000 • Clear airways if possible • Do not exert self

4. Medicines for bronchiectasis

4.1 Sputum sample [1–4]

- Always take sputum samples and treat early
- Bronchiectasis patients often have positive sputum culture results. This does not mandate antibiotic use unless:
  - the patient has an exacerbation (see Table 3.) or
  - results show a new isolation of *P. aeruginosa*
- Exclude NTM infection by collecting at least 3 sputum samples for mycobacterial culture, in all patients before azithromycin use

Table 3. Identifying an exacerbation and severity [1–3]

Key symptoms	Severe	Very severe
• Deterioration of at least 3 for at least 48 hrs: – cough – sputum volume or consistency – sputum purulence – breathlessness or exercise intolerance – fatigue or malaise – haemoptysis	• Key symptoms in the presence of any of the following: – tachypnoea – acute respiratory failure – exacerbated chronic respiratory failure – a significant decline in SaO2 or respiratory function or hypercapnia – fever of more than 38°C	• Key symptoms in the presence of any of the following: – haemodynamic instability – altered mental status – requires intensive or intermediate care unit admission

Severe bronchiectasis exacerbations are similar to pneumonia. Exclude with a chest x-ray

4.2 Eradication of *Pseudomonas aeruginosa (P. aeruginosa)* [1–4]

- The presence of *P. aeruginosa* in the airways is associated with increased:
  - exacerbations
  - risk of hospitalisation
  - risk of mortality
- If a patient is clinically stable when *P. aeruginosa* is first identified, do not treat. Consult the Antimicrobial Stewardship (AMS) or a respiratory specialist to avoid promoting antibiotic resistance

4.3 Long-term antibiotics to reduce exacerbation frequency and symptoms in adults [1,2,4]

- Seek advice from AMS or a respiratory specialist if a patient has:
  - ≥ 6 exacerbations over 12 months or
  - ≥ 2 hospitalisations over 12 months or
  - > 6 months of continuous symptoms
- Routine long-term (6–12 months) oral or nebulised antibiotics are not recommended as antibiotic resistance is a common outcome

4.4 Azithromycin prophylaxis in children with non-cystic fibrosis (non-CF) bronchiectasis or chronic suppurative lung disease (CSLD) [6,7]

- Prior to initiation of azithromycin as maintenance therapy, the following are required:
  - **child has been reviewed by a respiratory consultant**
  - presence of bronchiectasis or CSLD
  - ≥ 3 exacerbations and/or ≥ 2 hospitalisations in previous 12 months
  - failed trial of long-term non-macrolide antibiotics for at least three months
  - documented evidence of NTM exclusion in the lower airways
  - non-pharmacological interventions are optimised and adhered to
  - documented baseline liver function test and ECG
- Azithromycin is not initiated if:
  - evidence of NTM infection

- allergy to macrolides
- abnormal liver function test
- medicine interactions e.g. antiarrhythmics
- See Table 4. for dosing and follow-up in children

Consult specialist and hospitalise any patient with severe exacerbations with chronic *P. aeruginosa* colonisation or those in MRSA prevalent communities

Table 4. Long-term azithromycin (non-LAM) dosing schedule in children [6,7]

< 25kg weight	• 30 mg/kg PO per week (may be given in divided doses on a daily basis, three times wkly or as a single wkly dose)
25–40kg weight	• 250 mg/dose PO three times wkly
> 40kg weight	• 500 mg/dose PO three times wkly

Follow-up

- Minimum follow-up **every 6 months post initiation** to monitor ongoing benefit and safety
- Review effect on frequency of exacerbations
- Repeat liver function test and sputum culture
- Formal review by a **Paediatric Respiratory Consultant at 12 months** to assess:
  - reduction in frequency and/or severity of exacerbations, wet cough or sputum
  - respiratory function
  - general wellbeing (e.g. weight gain, school loss, behaviour)
  - child and family's demonstrated capacity for regular review
  - surveillance of macrolide resistance patterns on sputum microbiology results
- **Cease azithromycin** after 6 to 24 months or sooner if:
  - not tolerating the medicine
  - no clinical benefit after 6 months
  - anticipated spontaneous clinical improvement based on prior history (e.g. over summer)
- **After 24 months of continuous use** discontinue for 3 to 6 months. Azithromycin may be recommenced for up to 6 months If the child has had:
  - ≥ 3 exacerbations in previous 12 months and/or
  - ≥ 2 hospitalisations in previous 12 months then:
    - a **Paediatric Respiratory Consultant must assess benefit at 6 months**

Table 5. Other medicines for bronchiectasis [1–4]

Smoking cessation medicines

- **See** Smoking cessation, page 48

Oxygen therapy

- Supplemental oxygen therapy may be used if there is evidence of hypoxic respiratory failure (SpO_2 < 90% or PaO_2 < 65mmHg)
- May improve oxygenation, but may not have any impact on bronchiectasis patient with dyspnoea
- If supplemental oxygen is used, it is appropriate to maintain a SpO_2 >92%

Table 6. Medicines to treat adults with bronchiectasis [2–4,6]

For **severe and non-severe** exacerbations **without** chronic *P. aeruginosa* colonisation • Treat exacerbations of bronchiectasis for 14 days • If response is rapid and culture is negative for *P aeruginosa*, shorten duration to 10 days
• **Amoxicillin** 1 g PO, 8-hourly **OR** • **Doxycycline** 100 mg PO, 12-hourly **OR** • If suspected infection is with a beta-lactamase-producing strain then **amoxicillin+clavulanic acid** 875+125 mg PO, 12-hourly • For those who do not respond to first line therapy consider: – **Ciprofloxacin** 750 mg PO, 12-hourly
For adults with **severe** exacerbations **without** chronic *P. aeruginosa* colonisation where above oral therapy is inadequate • Once patient improves switch back to oral therapy
• **Ceftriaxone** 2 g IV, daily **OR** • **Amoxicillin+clavulanic acid** 1+0.2 g IV, 8-hourly **OR** • **Cefotaxime** 2 g IV, 8-hourly **OR** • If severe hypersensitivity to penicillins **moxifloxacin** 400 mg IV, daily
For **non-severe** exacerbations **with** chronic *P. aeruginosa* colonisation • Same as for **non-severe** exacerbations **without** chronic *P. aeruginosa* colonisation

Table 7. Medicines to treat children > 1 month of age with bronchiectasis [7]

For **first or new** isolation of *P. aeruginosa* colonisation **without** exacerbation	
• **Ciprofloxacin** 10–20 mg/kg up to 750 mg PO, 12-hourly **OR** inhaled **tobramycin** 300 mg bd **OR** both	• For 14 days
• Followed by inhaled **tobramycin** as above	• For 4 to 12 weeks
For **first or new** isolation of *P. aeruginosa* colonisation **with** exacerbation	
• **As above OR** consider hospitalisation for IV piperacillin/tazobactam **OR** IV ceftazidime +/- IV tobramycin **OR** Inhaled tobramycin. Followed by inhaled tobramycin • For 4 to 12 weeks	
For **chronic** *P. aeruginosa* colonisation **with** exacerbation	
• Consider hospitalisation for IV piperacillin/tazobactam **OR** IV ceftazidime +/- IV tobramycin **OR** Inhaled tobramycin. Followed by inhaled tobramycin • For 2 to 4 weeks	
• Inhaled **tobramycin** 300 mg bd +/- **ciprofloxacin** 10–20 mg/kg up to 750 mg PO, 12-hourly	• For 2 to 4 weeks
For **acute** exacerbations **without** *P. aeruginosa* colonisation • Once patient improves switch to oral therapy as above	
• **Amoxicillin+clavulanic acid** (> 3 months age) 25+5 mg/kg up to 1+0.2 g IV, 6–8 hourly **OR**	• For 2 to 4 weeks
• **Ceftriaxone** 50–100 mg/kg up to 4 g IV, daily **OR** • **Cefotaxime** 50 mg/kg up to 2 g IV, 6–8 hourly	• For 10 to 14 days
For **recurrent** exacerbations **without** *P. aeruginosa* colonisation	
• **Azithromycin** 10 mg/kg PO (to max. 500 mg) three times a week	

5. Cycle of care

Cycle of care summary for bronchiectasis

Action	Dx	Review frequency
Height	✓	-
Blood pressure	✓	2 yrly
Weight	✓	2 yrly
BMI	✓	2 yrly
Pulse rate	✓	2 yrly
Respiratory rate	✓	2 yrly
Temperature	✓	2 yrly
Spirometry > 6 years age	✓	Minimum 12 mthly (adults) 6 mthly (children)
Oxygen saturations	✓	Minimum 12 mthly (adults) 6 mthly (children)
FBC	✓	12 mthly
IgG, IgA, IgM, IgE	✓	-
Sweat test	✓	In all children and select adults
Sputum culture	✓	Minimum 12 mthly (adults) 6 mthly (children)
Aspergillus serology	✓	-
Lifestyle modifications education	✓	Every visit
Social-emotional wellbeing	✓	12 mthly
Bronchiectasis action plan	✓	12 mthly
Influenza, pneumococcal and COVID-19 vaccines	✓	Recommended. See the *Australian Immunisation Handbook* for schedule
Chest x-ray	✓	During chest infection to rule out pneumonia
High resolution CT	✓	-
Medicine review	✓	Each visit
Self monitoring (action plan)	✓	Each visit
HW/RN review	✓	Ongoing monitoring with recall register
MO/NP review	✓	Minimum 12 mthly (adults) 6 mthly (children)
Pulmonary rehabilitation	✓	PRN for poor physical activity tolerance
Physiotherapist	✓	PRN for airway clearance manoeuvers and education
Specialist MO	✓	12 mthly (adults) 6 mthly (children)

6. References

- All Chronic Conditions Manual references are available at the Office of Rural and Remote Health website

7. Resources

1. Bronchiectasis prediction tools for predicting mortality and exacerbation rates in non-cf bronchiectasis
2. Airway clearance manoeuvres resources
3. Bronchiectasis patient resources
4. Self-Management of Chronic Conditions (SMoCC) service
5. The Australian Lung Foundation Pulmonary Rehabilitation Toolkit
6. The Lung Foundation training and education website
7. A bronchiectasis action plan

Chronic kidney disease

High risk groups [1–3]

- > 60 years of age
- Aboriginal and Torres Strait Islander, Maori and Pacific Islander people
- Those with diabetes, cardiovascular disease, hypertension, or a family history of kidney disease
- A sudden decrease in renal function (including short term duration)
- History of acute kidney injury i.e. a sudden increase in serum creatinine, or with persistent low urine output (oliguria)
- Body mass index ≥ 30kg/m^2
- Those who smoke or vape tobacco products
- Socioeconomically disadvantage
- Those with signs of kidney damage i.e. acute post-streptococcal glomerulonephritis, albuminuria, proteinuria and haematuria

Considerations in pregnancy [2,3]

- Women with early chronic kidney disease (CKD) (eGFR > 60 mL/min/1.73 m^2) are advised they can fall pregnant provided their blood pressure is well controlled
- CKD while pregnant increases risk of gestational hypertension, pre-eclampsia, eclampsia, maternal and neonatal death, premature births, intra-uterine growth restriction, small-for-gestational age and low birth weight
- ARBs and ACEi are contraindicated in pregnancy
- The validity of estimated glomerular filtration rate (eGFR) is not known or recommended to assess kidney function in pregnant women, serum creatinine should remain the standard test in this cohort

Urgent referral [2,4]

- Anyone with signs of acute nephritis (oliguria, haematuria, acute hypertension and oedema) should be regarded as a medical emergency
- Refer to a specialist renal service or nephrologist if:
  - eGFR < 30 mL/min/1.73m^2
  - macroalbuminuria (urine ACR ≥ 300 mg/mmol)
  - decline in eGFR from a baseline of < 60 mL/min/1.73m^2 (> 5 mL/min/1.73m^2 decline over 6 months, confirmed by at least 3 separate readings)
  - haematuria with macroalbuminuria (> 300 mg/g or > 30 mg/mmol)
  - CKD category ≥ 3 with uncontrolled hypertension despite at least 3 antihypertensive agents
- For further clinical prioritisation criteria for nephrology referral see Resource 1.

1. What is chronic kidney disease (CKD)? [2]

- Healthy kidneys remove excess minerals, fluids and other waste products as urine
- Kidneys ability to remove waste products declines in the presence of chronic conditions and cardiovascular diseases
- As kidney function declines, potassium, uric acid and phosphate accumulates in the blood leading to gout, bone disease or abnormal heart rhythms
- CKD and end stage kidney failure occurs when kidney function is not addressed with lifestyle modification or medicines
- Two rising waste products in particular are used to measure how well the kidneys are functioning; creatinine and urea

2. Diagnosis of CKD [2,5]

- Patients commonly present asymptomatic but may have tiredness, anaemia, swelling around eyes and ankles, shortness of breath, anorexia, nausea, vomiting, urinary frequency especially at night, hypertension, itching, restless legs and chest pain
- Diagnosis relies on determining kidney function by two pathology tests:
  - eGFR which indicates how well the kidneys are filtering. Based on serum creatinine level and patient age and sex
  - albumin creatinine ratio (ACR) which is a measure of proteins in the urine. Excessive amounts are a key marker of kidney damage
- Diagnosis is made if either of the following features are present ≥ 3 months:
  - an eGFR < 60 mL/min/1.73 m^2 (CKD stage 3a–5. See Table 1.) with or without evidence of kidney damage **OR**
  - evidence of kidney damage with or without decreased eGFR:
    - albuminuria i.e. persistent positive ACR result for 3 or more months
    - haematuria after exclusion of infective urological or menstrual causes
    - structural abnormalities e.g. on kidney imaging tests
    - pathological abnormalities e.g. renal biopsy

CKD in itself is not a diagnosis. Attempts should be made to identify the underlying cause of CKD

- Early detection and management of CKD can slow progression to end-stage renal failure
- All high risk groups should be offered an annual ACR and eGFR. See Pathology (adult), page 180
- All newly diagnosed patients with CKD should be referred to a nephrologist

2.1 ACR urine test [2]

- ACR measures protein in the urine; a key marker of kidney damage:
  - performed on a single urine sample (most accurate first morning void)
  - normal values are < 3.5 mg/mmol for women and < 2.5 mg/mmol for men
  - considered positive when above values are exceeded
  - albuminuria is present when 2 out of 3 ACR tests are positive

- kidney damage is likely if albuminuria is persistent for ≥ 3 months

2.2 eGFR blood test [2]

- eGFR is the best measure of kidney function
- Normal eGFR is > 90 mL/min/1.73m^2. Further investigations are only done if the eGFR value drops below 60
- An eGFR < 60 mL/min/1.73m^2 should be considered in the context of other clinical situations and be retested in 7 days. These include:
  - acute changes in renal function
  - dialysis patients
  - dietary intake. See 3.3 Diet and nutrition
  - extremes of body size
  - muscle diseases (may overestimate) or high muscle mass (may underestimate)
  - children < 18 years of age
  - severe liver disease
- An eGFR < 60 mL/min/1.73m^2 in the elderly, although common, should be treated as significant and not considered physiological

2.3 Staging, classification and progression of CKD [2,5]

- While the stage of kidney function is determined by eGFR, the risk of CKD progressing is calculated by correlating eGFR against ACR. See Table 1.
- The risk of progression determines CKD management

Table 1. Risk of CKD progressing [2,5]

Kidney function CKD stage	eGFR (mL/min/1.73m^2)	ACR		
		Normo-albuminuria	Micro-albuminuria	Macro-albuminuria
		< 2.5 mg/mmol (M) < 3.5 mg/mmol (F)	< 2.5–25 mg/mmol (M) < 3.5–35 mg/mmol (F)	> 25 mg/mmol (M) > 35 mg/mmol (F)
1	≥ 90 Normal			
2	60–89 Mild			
3a	45–59 Mild–moderate			
3b	30–44 Moderate–severe			
4	15–29 Severe			
5	< 15 Kidney failure			

Not CKD unless haematuria, structural or pathological abnormalities present
Low risk of CKD progressing
Moderate risk of CKD progressing
High risk of CKD progressing

(M) = Male
(F) = Female

3. Management of CKD [1,2,6,7,8]

- The goal of managing CKD is to prolong quality of life by modifying lifestyle behaviours while identifying and addressing comorbidities including:
  - Dyslipidaemia, page 317
  - Hypertension, page 345 (most effective way of slowing CKD progression)
  - Diabetes, page 304 (most common cause of CKD)
  - Coronary heart disease, page 264
- Address these comorbidities in conjunction with the Australian cardiovascular disease risk calculator, page 425
- Management targets for CKD are outlined in Table 2.

Table 2. Target goals to manage CKD [1,2,6,7,8,10,11]

Assessment	Target
Blood pressure	• ≤ 130 mmHg/80 mmHg
Lipids	• See Dyslipidaemia, page 317 • Routine follow-up is not required
Blood glucose	• BGL 6–8 mmol/L fasting **OR** 8–10 mmol/L postprandial • HbA1c ≤ 7.0% **OR** < 53 mmol/mol (based on the needs of the patient)
Parathyroid hormone (PTH)	• 2–9 times upper limit of normal
Albuminuria	• 50% reduction in baseline urine ACR
Serum albumin	• ≥ 35 g/L
Vitamin D (25–hydroxyvitamin D)	• > 75 nmol/L
Bicarbonate level (HCO_3)	• > 20 mmol/L
Iron studies	• Hb 100–115 g/L • Serum ferritin > 100 micrograms/L • Transferrin saturation (TSAT%) > 20%
Phosphate (PO_4)	• 0.8–1.5 mmol/L
Potassium (K+)	• ≤ 6.0 mmol/L
Calcium (Ca)	• 2.2–2.6 mmol/L
Weight reduction	• BMI < 25 kg/m^2 • Waist circumference < 94 cm in men, < 80 cm in women
Lifestyle modification	• Smoking cessation, page 48, Alcohol reduction, page 24, Physical activity and sleep, page 34

3.1 Support patient self-management [2]

- In partnership with the patient and family assess the impact of CKD on:
  - activities of daily living
  - physical activity
  - employment
  - finances
  - family routines

  - social-emotional wellbeing
- Discuss what CKD is and how and why it progresses to end stage CKD. See 3.6 End stage CKD (Stage 5)
- Provide Resource 2.
- Consider referral to physiotherapist or occupational therapist to assess home for falls risk and support requirements. See Resource 3.
- Refer eligible aged care patients to My Aged Care. See Resource 4.
- Encourage the patient to identify barriers to adequate lifestyle modification and medical adherence, and create goals to overcome those barriers. See Engaging our patients, page 19

3.2 Social-emotional support [2]

- Depression can affect 1 in 5 people with CKD, and 1 in 3 individuals on dialysis
- Depression in people with CKD has detrimental affects on mortality, hospitalisation rates, medicine and treatment adherence, nutrition and overall quality of life
- Cognitive impairment is common in people with CKD and prevalence increases with CKD severity and end stage CKD. Manage as per Dementia, page 271
- See Social-emotional wellbeing, page 58

3.3 Diet and nutrition [1,2,10,11]

- All people with CKD should be encouraged to eat a balanced diet according to national recommendations. See Diet and nutrition, page 29
- Refer all patients with eGFR < 30mL/min/1.73m^2 to a dietitian for an individualised dietary plan
- Patients with eGFR > 30mL/min/1.73m^2 should:
  - consume a normal protein diet. Avoid high or low protein intake
  - avoid salt and salt substitute intake to reduce blood pressure and albuminuria
  - drink fluids to satisfy thirst. Avoid soft drinks
- Refer patients with a BMI > 25kg/m^2 to a dietitian or exercise physiologist for an individualised dietary and exercise plan
- Do not restrict dietary phosphate in kidney function stage 1–3
- Provide CKD dietary information. See Resource 5.

3.4 Vitamin D [2,22]

- As GFR falls, activation of vitamin D is impaired
- It is difficult to obtain sufficient vitamin D from diet alone
- Those with early CKD should expose their face, hands and arms to the sun for:
  - 6–7 minutes before 10am and after 3pm in summer and 7–40 minutes at midday in winter (at UV index < 3) for most days of the week for fair-skinned people
  - 10–15 minutes on most days of the week for naturally dark skinned people
- Managing vitamin D levels in end stage CKD can be difficult. Consult a nephrologist

3.5 Obstructive sleep apnoea (OSA) [2]

- Affects up to 50% of people with eGFR <15 mL/min/1.73m^2
- Is a significant cause of refractory hypertension

- Manage by:
  - weight reduction. See Overweight and obesity (adult), page 366 and Lifestyle modifications, page 18
  - avoid central nervous system depressants e.g. opiates and alcohol
  - CPAP therapy
- Assess a patient's daytime sleepiness and OSA risk by using a validated tool. If they score highly refer to a sleep specialist. See Resource 6.

3.6 End stage CKD (Stage 5)

- Provide patient and carer support for:
  - adjustment to diagnosis
  - grief and loss support
  - access to kidney support services
  - family meetings to ensure patient and family awareness
  - confirmation that patient, family and carer wishes are compatible with care required
  - spiritual and cultural needs
- Discuss end of life decisions including:
  - dialysis options. See 3.7 Dialysis below
  - advance care directives (wills, guardianship etc.) to outline wishes for future health and personal care. See Advance Care Planning, page 141
  - no dialysis and palliative care arrangements. See Palliative care, page 376
- While in chronic kidney failure it is appropriate to:
  - avoid high-protein foods to limit the progression of uraemia
  - continue erythropoietin stimulating agent (ESA) to prevent anaemia and improve fatigue
  - correct calcium, phosphate and magnesium imbalances

3.7 Dialysis [2]

- Refer all patients with an eGFR > 15–29 mL/minute (Stage 4) to a nephrologist to consider dialysis
- Discuss with the patient:
  - dialysis is a choice that requires commitment
  - some comorbidities, especially cardiac disease, preclude dialysis
  - the burden of dialysis regimen and treatment of comorbidities. See Table 3.
  - health may deteriorate despite dialysis with few other treatment options i.e. transplantation or conservative care
  - dialysis is ceased when the quality of life without dialysis outweighs its benefits
  - what happens when dialysis is ceased, refused or ceases to be of benefit:
    - conservative kidney care. See Table 3.
    - deterioration depends on comorbidities and kidney function
    - mortality varies from weeks to years. Family and carers may expect a rapid death

Table 3. Treatment options for end stage CKD [2]

Treatment	Involves	Lifestyle impact
Conservative kidney care	• No dialysis or transplant • Medication and diet control • Advance care planning • Managing symptoms with non-dialysis therapies	• Life expectancy decreased compared with dialysis or transplant • Non-dialysis outweighs quality of life with dialysis • Managing symptoms may improve quality of life
Home peritoneal dialysis (PD)	• Four or more daytime bags changed manually **OR** • Overnight exchanges managed by a machine	• Peritoneal catheter insertion and care • Simple, gentle and portable • 1 week training • Freedom to work and travel • Good quality of life • Lasts 2-5 years
Home haemodialysis	• 3-5 daytime treatments per week 4-6 hrs duration **OR** • 3-5 night time treatments per week 8 hrs duration	• Surgery for fistula at least 3 months prior to use • Average of 3 months for training • Flexible routine
Centre based haemodialysis	• As above but at community health centre or hospital	• Strict timing of appointments • Strict diet • Transport to and from location • No training required

4. Medicines for those with CKD

4.1 Calculating CKD medicine dosage [2,16]

- Either eGFR or Creatinine Clearance (CrCl) can be used to estimate renal medicine clearance, however these values are not interchangeable or equivalent
- eGFR is the preferred measure of kidney function with appropriate adjustment of body surface area (BSA) for patient's with:
  - eGFR/CrCl < 30mL/min
  - body weight < 50kg
  - BMI > 30kg/m^2
- See Resource 7. for online calculators to estimate CrCl and ideal body weight

4.2 Special considerations [2,8–10,12,14–17,19,20]

- Medicines should be regularly reviewed by a nephrologist, MO/NP or pharmacist especially when CrCl is < 10 mL/min
- Use of uric acid lowering agents e.g. allopurinol, are not routinely recommended in people with early CKD (stage 1–3) who have asymptomatic hyperuricaemia

Combining an ACE inhibitor (or ARB) with a diuretic and NSAID or COX-2 inhibitor (except low-dose aspirin) in patients with CKD can result in an acute kidney injury; the “triple whammy”

- Refer to a clinically accepted renal medicines handbook, specialist or pharmacist where medicine dosage adjustment may be required for antibiotics or antivirals
- Educate patients to avoid over the counter NSAIDs without consultation
- Reduce maximum metformin dose when:
  - CrCl 60–90 mL/minute, 2 g PO daily
  - CrCl 30–60 mL/minute, 1 g PO daily
  - CrCl 15–30 mL/minute, 500 mg PO daily
- Radio-contrast can cause further renal damage
- For those with end stage CKD, medicines may need to be ceased or doses reduced to prevent accumulation of metabolites
- For the use of opioids see Persistent pain, page 387
- Flowchart 1. illustrates medicine management of hypertension in patients with CKD

4.3 Cholesterol-lowering treatment [6,7,14–16]

- Use statin or statin/ezetimibe combination in those:
  - ≥ 50 years with any stage of CKD
  - < 50 years with any stage of CKD in the presence of one or more of:
    - coronary disease
    - previous ischaemic stroke
    - diabetes **or**
    - estimated 5 year cardiovascular disease risk is high > 10%. See the Australian cardiovascular disease risk calculator, page 425
- No target lipid levels or follow-up is required

Flowchart 1. Management of hypertension in people with CKD [2]

Blood pressure ≥ 130/80

Address lifestyle risk factors

Comorbidities

- Diabetes, page 304
- Hypertension, page 345
- Coronary heart disease, page 264

Lifestyle modifications

- Physical activity program
- Low salt diet
- Healthy eating
- Smoking cessation

Start ACEi or ARB

- Monitor:
  - eGFR and K^+ (target < 6.0 mmol/L)
  - blood pressure and
  - address lifestyle risk factors

Blood pressure < 130/80

- Continue to monitor:
  - blood pressure and
  - address lifestyle risk factors

Blood pressure continues ≥ 130/80

- Increase ACEi or ARB to maximum recommended dose
- Consider adding:
  - calcium channel blocker or
  - thiazide diuretic or
  - beta blocker
- Continue to monitor
  - eGFR and K^+
  - blood pressure and
  - address lifestyle risk factors

If any of the following exists:

- Blood pressure is not consistently < 130/80 with at least 3 anti-hypertensive agents
- K^+ > 6.5 mmol/L
- eGFR falls by > 25% below baseline

Consult a nephrologist immediately

Table 4. Medicine management of CKD [6–10,12,14–16,20,21]

ACEi

- Used as first line agent for hypertension and CKD with persistent proteinuria
- Cautiously titrate upwards to target dose according to response
- Adverse effects include dry cough, hypotension, worsening renal function, hyperkalaemia, rarely angioedema (stop immediately)
- Monitor BP, UEC, K^+
- ACEi and ARB not to be used together
- Patients on high dose diuretics should reduce dose 24–48 hours before starting ACEi
- **Beware of first dose hypotension**

Table 4. Medicine management of CKD *(continued)* [6–10,12,14–16,20,21]

Ramipril
- If GFR 20–50 mL/min then 1.25–10 mg PO daily
- If GFR < 10–20 mL/min or dialysis then 1.25 mg PO daily. Titrate to response

Perindopril arginine (or equivalent erbumine dose)
- If GFR 15–60 mL/min then 2.5 mg PO daily. Adjust according to response
- If GFR < 15 mL/min then 2.5 mg PO alternate days. Adjust according to response

Captopril 6.25 mg PO bd then titrate according to response

ARB
- Use ARB when ACEi intolerant

Irbesartan To prevent renal disease progression, if haemodialysed or > 75 years start at 75–150 mg PO once a day and titrate to response

Candesartan (non-LAM)
- If GFR 20–50 mL/min then 4 mg PO daily and titrate to response (to max. 32 mg)
- If GFR <10–20 mL/min then 2 mg PO daily and titrate to response

Telmisartan
- If GFR 10–50 mL/min then 20–80 mg PO daily
- If GRF < 10 mL/min then 20 mg PO daily and adjust according to response

Sodium-glucose co-transporter 2 inhibitors (SGLT2i)
- For CKD with proteinuria, with or without diabetes despite maximum tolerated ACEi/ARB
- Do not initiate if eGFR < 25 mL/min
- Stop (temporarily) if patient unwell (e.g. vomiting, diarrhoea, fever), or not eating or drinking normally, to prevent risk of euglycaemic ketoacidosis

- **Dapaglilozin** 10 mg PO once a day
- **Empagliflozin** 10 mg PO once a day

Beta blockers
- May be useful for hypertension in CKD. For beta blockers in CKD with Heart failure, page 325
- Monitor BP and HR
- Contraindicated in severe or poorly controlled asthma

Atenolol 25–50 mg PO once a day and titrate to response (as in normal renal function)

Metoprolol
- If GFR 20–50 mL/min then 100–200 mg PO daily in divided doses (as in normal renal function)
- If GFR < 10–20 mL/min then start low and titrate according to response

Calcium channel blockers
- Second line therapy for hypertension in CKD
- Use with caution in patients with impaired liver function
- Combining diltiazem or verapamil with beta-blockers can cause severe bradycardia and heart block
- Cloudy peritoneal fluid during peritoneal dialysis (unrelated to infection) has been reported

Amlodipine 2.5 mg PO once a day and titrate to response (to a max. 10 mg)

Lercanidipine Hydrochloride 10 mg PO daily and increase as tolerated (to a max. 20 mg)

Diltiazem CR 180 mg PO once a day (to a max. 360 mg)

Verapamil CR 120–180 mg PO once a day and titrate to response (to a max. 240 mg bd)

Table 4. Medicine management of CKD *(continued)* [6–10,12,14–16,20,21]

Diuretics

- Thiazide diuretics are used as second line therapy for hypertension in CKD
- Individual dose range of frusemide is large, doses are determined by patient requirements
- Hydrochlorothiazide and indapamide are less effective as diuretics if eGFR < 25 ml/min, but they retain some antihypertensive effect in low doses
- Avoid diuretics in patients with gout as it may worsen the condition

Frusemide

- If GFR 20–50 mL/min then dose as in normal renal function; 20–40 mg PO once a day or bd (to max. 1 g daily)
- If GFR < 10–20 mL/min then dose as in normal renal function; may need dose increased

Hydrochlorothiazide

- If GFR 30–60 mL/min then 12.5–50 mg PO daily
- If GFR 10–30 mL/min then 12.5–25 mg PO daily
- If GFR < 10 mL/min or dialysis then 12.5–25 mg PO daily

Indapamide CR 1.5 mg PO once a day (as in normal renal function)

Cholesterol lowering treatments

- Recommended in CKD to reduce the risk of atherosclerotic events
- +/- ezetimibe as below

Atorvastatin 10–80 mg PO daily

Simvastatin 5–40 mg PO nocte

- If GFR < 10 mL/min doses > 10 mg should be used with caution

Pravastatin 10–40 mg PO nocte

Rosuvastatin

- If GFR 30–60 mL/min then 5–20 mg PO once a day
- If GFR 10–30 mL/min then 5–10 mg PO once a day. Use with caution
- If GFR < 10 mL/min then 5–10 mg PO once a day. Use with caution

Ezetimibe 10 mg PO daily (as in normal renal function)

Bone and mineralisation disorders

- In discussion with specialist nephrologist in CKD stage 3b, 4, 5 or dialysis or transplant

Calcitriol 0.25 mg PO once a day and titrate to response

- Contraindicated in hypercalcaemia
- Beware of hypercalcaemia when taken in conjunction with thiazides

Calcium carbonate 500–600 mg PO elemental calcium (given as 1250–1500 mg calcium carbonate) **chewable** tablet with each meal

- A phosphate binder given with meals to absorb dietary phosphate in the gut
- Calcium salts should be the initial choice when serum Ca^{2+} < 2.4 mmol/L and parathyroid hormone (PTH) is in the target range

Iron

- Oral ferrous sulphate or IV iron polymaltose is usually used with dialysis
- Nephrologist will initiate and determine adjustment to dosages accordingly
- Target Hb levels 100–115 g/L. Consult nephrologist for Levels > 130 g/L

Erythropoietin stimulating agent (ESA)

- Used to treat anaemia and improve Hb levels in CKD
- Usually darbepoetin alfa, epoetin alfa or methoxy pegepoetin beta
- Subcutaneous. IV in dialysis
- Nephrologist will initiate and determine adjustment to dosages accordingly

5. Cycle of care

Cycle of care summary for CKD

mg/mmol		eGFR (mL/min/1.73m²)		
normoalbuminuria (< 2.5 M; < 3.5 F)		45–59	30–44	All eGFR < 30 OR macroalbuminuria (> 25 M; > 35 F)
microalbuminuria (< 25 M; < 35 F)		≥ 60	30–59	
Risk of CKD progression if all items below not met and actioned		Low	Moderate	High
Action	**Dx**	**Review frequency**		
BMI	✓	12 mthly	3–6 mthly	1–3 mthly
Height	✓	Once		
Weight	✓	12 mthly	3–6 mthly	1–3 mthly
Waist circumference	✓	12 mthly	3–6 mthly	1–3 mthly
Blood pressure	✓	12 mthly	3–6 mthly	1–3 mthly
Calcium (Ca^{2+})	✓	-	3–6 mthly	1–3 mthly
Vitamin D	✓	As clinically indicated		
Aluminium salts		If taking aluminium hydroxide. Consult MO/NP		
Phosphate (PO4)	✓	-	3–6 mthly	1–3 mthly
Vitamin B12 and folate	✓	-	-	6 mthly
FBC	✓	-	3–6 mthly	1–3 mthly
Parathyroid hormone (PTH)		-	6–12 mthly if eGFR < 45 mL/min/1.73m²	
UEC	✓	12 mthly	3–6 mthly	1–3 mthly
HbA1c (those with diabetes)	✓	12 mthly	3–6 mthly	1–3 mthly
Fasting blood glucose	✓	-	-	-
eGFR	✓	12 mthly	3–6 mthly	1–3 mthly
Urine ACR	✓	12 mthly	3–6 mthly	1–3 mthly
Fasting lipids	✓	-	-	-
Iron studies	✓	12 mthly	mthly until target reached then 3 mthly	
Self management support	✓	Each visit		
Lifestyle modifications	✓	Each visit		
Diet modification	✓	Each visit		
Social-emotional wellbeing	✓	Each visit		
Assess falls risk	✓	As condition alters		
Influenza, pneumococcal and COVID-19 vaccines	✓	Recommended. See the *Australian Immunisation Handbook* for schedule		
Dietitian	✓	12 mthly	3–6 mthly	1–3 mthly
Dentist	✓	12 mthly	12 mthly	12 mthly
Medicine review	✓	At each visit to monitor stability in condition		
HW/RN/Diabetes educator review	✓	12 mthly	3–6 mthly	1–3 mthly
MO/NP review	✓	12 mthly	3–6 mthly	1–3 mthly
Nephrologist	✓	As per specialist recommendation		
Palliative care		-	-	when indicated

6. References

- All Chronic Conditions Manual references are available on the Office of Rural and Remote Health website

7. Resources

1. For further clinical prioritisation criteria for nephrology referral
2. Patient and professional resources from Kidney Health Australia
3. Individual falls risk screening
4. The Australian Government's My Aged Care portal for all national aged care support services
5. CKD dietary information handout and CKD and dialysis dietary information handout and Aboriginal and Torres Strait Islander specific handout
6. The Epworth Sleepiness Scale and STOP-Bang questionnaire
7. The Australian Medicines Handbook online calculators: The CrCl calculator, the ideal weight calculator, the Body surface area calculator and the Queensland Health Heart Failure Medicine Titration Plan

Chronic obstructive pulmonary disease

High risk groups [1–3]

- People exposed to occupational and environmental dusts, chemicals and airborne hazards
- Aboriginal and Torres Strait Islander people and those from culturally and linguistically diverse backgrounds
- Smokers and ex-smokers of tobacco and e-cigarette products

Considerations in pregnancy

- Pregnant women with airway disease should be seen by a specialist

Urgent referral

- For acute respiratory exacerbations refer to the *Primary Clinical Care Manual*

1. What is chronic obstructive pulmonary disease (COPD)? [1–3]

- A lung condition characterised by chronic respiratory symptoms (dyspnoea, cough, sputum production) due to abnormalities of the airways (bronchitis, bronchiolitis, emphysema) that cause persistent and progressive airflow obstruction
- The primary contributing factor is exposure to tobacco smoke. See Smoking cessation, page 48
- All comorbid chronic conditions increase the risk of poor lung function and death

2. Diagnosis of COPD [1–3]

- A diagnosis should be considered in any patient who has:
  - a history of recurrent lower respiratory tract infections
  - exposure to tobacco smoke or occupational or environmental dusts, vapours, fumes and gases
  - breathlessness that is persistent, progresses over time and worsens with exercise
  - chronic cough and sputum production +/- recurrent chest infections
  - forced expiratory post-bronchodilator FEV_1/FVC ratio < 0.70 (airflow limitation)
- Some people present with worsening breathlessness, a cough +/- sputum production or limitation to activity
- Identifying the airflow limitation and symptoms helps to classify COPD severity. See Table 1. to determine:
  - its impact on patient health
  - the risk of future exacerbations, hospital presentations or death
  - management and treatment

Table 1. Classification of COPD according to airflow obstruction[1,2]

Stages	Mild	Moderate	Severe
Symptoms	• Few symptoms • Breathless on moderate exertion • Cough and sputum production • Little or no effect on daily activities	• Breathless walking on level ground • Increasing limitation of daily activities • Recurrent chest infections • Exacerbations requiring oral corticosteroids and/or ABs	• Breathless on minimal exertion • Daily activities severely impacted • Increasing frequency and severity of exacerbations
Lung Function	FEV_1 ≈ 60-80% predicted	FEV_1 ≈ 40-59% predicted	FEV_1 < 40% predicted

3. Management of COPD [1,2]

- Management goals are to:
  - reduce symptoms to improve exercise tolerance and health status
  - reduce risk of exacerbations to prevent disease progression and mortality
  - encourage those who smoke to stop. See Smoking cessation, page 48
  - identifying and addressing comorbidities, in particular:
    - any respiratory conditions including Asthma (adults and children > 12), page 204 and Bronchiectasis, page 233 any cardiac conditions including Heart failure, page 325, Hypertension, page 345 and Rheumatic heart disease, page 406
    - Diabetes, page 304
    - Osteoporosis, page 360

3.1 Support patient self-management [1–3]

- Support the patient with lifestyle modification with particular attention to Smoking cessation, page 48 and pulmonary rehabilitation. See 3.13 Pulmonary rehabilitation program
- Provide COPD education (Resource 1.) and discuss:
  - airway clearance and breathing techniques. See Resource 2.
  - medicine usage, effects and compliance
  - develop a COPD action plan. See below
- Refer patient to SMoCC, a phone service that supports patients manage their condition. See Resource 3.
- Encourage the patient to identify barriers to adequate lifestyle modification and medical adherence and create goals to overcome those barriers. See Engaging our patients, page 19

3.2 Social-emotional support [2,3]

- See Social-emotional wellbeing, page 58

3.3 Action plan [1–3]

- Develop an action plan (Resource 4.) with the patient so they can:
  - recognise and monitor exacerbations and severity. See Table 2.
  - intervene early to prevent exacerbations

  - understand and feel comfortable using it
- Review and update action plan each visit, especially when changing medicines

3.4 Minimising occupational exposure [1–3]

- Discuss minimising exposure to occupational (particularly mining and quarry workers) risk factors including:
  - smoke, gases, vapours and fumes
  - biological and mineral dusts
  - diesel exhaust
  - indoor and outdoor pollutants and chemicals

3.5 Monitor health status [1–3]

- According to 5. Cycle of care, regularly monitor:
  - temperature, pulse, respiratory rate, blood pressure, pulse oximetry
  - weight and BMI
  - sputum colour and amount
  - lung function by spirometry before and 10–15 minutes after 4 puffs of salbutamol via a spacer. See Resources 5.
  - ECG for Coronary heart disease, page 264 changes and right ventricular strain pattern
  - chest x-ray for Bronchiectasis, page 233, emphysema, lung hyperinflation, heart failure
  - echocardiogram for pulmonary hypertension
  - swallowing difficulties. Refer to speech pathologist
- Use the COPD Assessment Test (CAT) to measure the impact of COPD on the patient and changes over time. See Resource 6.

3.6 Smoking cessation [1–3]

- Quitting smoking is the most effective means to prevent COPD from progressing
- Perform spirometry on past or present smokers with recurrent respiratory infections or frequent and unusual sputum production. See Resource 5. and 7.
- See Smoking cessation, page 48

3.7 Improve exercise tolerance [1–3]

- Encourage patient to keep as active as possible to maintain lung function
- Refer to a pulmonary rehabilitation program. See 3.12 Pulmonary rehabilitation program
- See Physical activity and sleep, page 34

3.8 Nutrition [1–3]

- Lung disease increases the risk of poor nutrition, weight loss and reduced muscle and bone strength due to:
  - increased energy needs
  - changes in appetite
  - lack of energy to shop, cook or eat meals
  - an increased need for essential vitamins, minerals and antioxidants
- Refer to dietitian if there is weight loss or weight gain
- For unintended weight loss, refer to exclude an alternate diagnosis e.g. cancer,

diabetes
- See Diet and nutrition, page 29

3.9 Sleep hygiene [1–3]

- Medicines, breathing difficulties, anxiety and depression in COPD can disrupt sleep
- Patients with COPD and OSA have:
  - a higher prevalence of pulmonary hypertension than those without OSA
  - improved survival outcomes and lower rates of hospital admission with CPAP use
- Assess a patient's daytime sleepiness and OSA risk by using a validated tool. If they score highly refer to a sleep specialist. See Resource 8.

3.10 Prevent respiratory infections [1–4]

- Respiratory illnesses contribute to COPD exacerbations and progression
- Provide Influenza, pneumococcal, pertussis and COVID-19 vaccines as per the *Australian Immunisation Handbook*

3.11 Home oxygen [1–3]

- Long term oxygen therapy (18 hours/day) reduces cardiac workload and prolongs survival in patients who have chronic resting arterial hypoxemia:
  - FEV_1 < 40% predicted
  - SpO_2 < 88%
  - those with pulmonary hypertension
  - PaO_2 ≤ 55 mmHg or SpO_2 ≤ 88%
  - PaO_2 55–59 mmHg or SpO_2 with evidence of right heart failure, pulmonary hypertension or high red cell count
- Home O_2 is evaluated by blood gases after 4–8 weeks when the person is stable, to ascertain effectiveness and whether to continue
- Medical Aids Subsidy Scheme (MASS) can supply home oxygen to eligible patients. See Resource 9.
- Provide a home visit for oxygen concentrator education

3.12 Prevention of complications [1]

- Identify risk factors for Osteoporosis, page 360 by assessing:
  - vitamin D levels
  - mobilisation
  - use of high dose corticosteroids
  - underlying decreased bone mineral density
  - bone densitometry where appropriate
- Assess Australian cardiovascular disease risk calculator, page 425
- Pulmonary hypertension:
  - is difficult to treat
  - manifests late due to poor lung ventilation from ongoing exacerbations
  - management relies on smoking cessation, improving diet and physical activity and medicine adherence to prevent right heart failure

3.13 Pulmonary rehabilitation program [2]

- Offered to all symptomatic patients with more than 2 exacerbations per year or with moderate to severe COPD to avoid hospitalisation
- Refer to the Pulmonary Rehabilitation Toolkit. See Resource 10.
- Refer to an exercise physiologist or the Lung Foundation for rehabilitation program details and/or training. See Resource 11.

3.14 Airway clearance technique

- An early intervention strategy to clear lung secretions and avoid hospitalisation:
  - start with 5 deep abdominal breaths. Expand chest fully, starting with the diaphragm and lower ribs. Avoid lifting or shrugging shoulders
  - do 30–60 seconds of relaxed breathing. Breathe from the diaphragm. With a hand feel the stomach rising and falling. Shoulders should be relaxed
  - do another 5 deep abdominal breaths
  - follow this with 30–60 seconds of relaxed breathing
  - take a medium sized breath in and huff the air out a little more forcefully
  - start with 3 cycles of gentle huffs. Finish with 2 cycles of more forceful huffs
  - finish with a cough to clear any secretions left in the main airways
  - repeat the cycle 2–3 times or until no more secretions can be removed
- Refer to a physiotherapist if patient is unable to clear lung secretions
- For airway clearance information see Resource 2.

3.15 Falls prevention

- Screen for individual falls risk. See Resource 12.
- Refer to a balance and strength group by a physiotherapist or exercise physiologist
- Refer to an occupational therapist to assess for home modification requirements to minimise trip and fall hazards

3.16 Palliative support [1–3]

- Consider discussing a palliative approach to care, advance care planning, and end-of-life issues when patient has:
  - predicted FEV_1 < 25%
  - dependence on oxygen
  - respiratory or heart failure or other comorbidities
  - weight loss or muscle wasting
  - decreased functional status with increased dependence on others
  - advanced age
  - See Palliative care, page 376 and Advance Care Planning, page 141
- Refer to physiotherapist or occupational therapist for a home support assessment e.g. wheel chair, bedding, rails etc
- Refer eligible patients to Home and Community Care (HACC) and MASS services. See Resource 9.

Table 2. Stepwise management of stable COPD [1–3,6]

	Mild	Moderate	Severe
Symptoms	• Few symptoms • Breathless on moderate exertion • Cough and sputum production • Little or no effect on daily activities	• Breathless walking on level ground • Increasing limitation of daily activities • Recurrent chest infections • Exacerbations requiring oral corticosteroids and/or antibiotics	• Breathless on minimal exertion • Daily activities severely impacted • Exacerbations of increasing frequency and severity
Lung function	**FEV_1 ≈ 60-80% predicted**	**FEV_1 ≈ 40-59% predicted**	**FEV_1 < 40% predicted**
Non-pharmacological Interventions	**REDUCE RISK FACTORS** Avoid exposure to tobacco smoke and air pollution, support smoking cessation, recommend influenza, pneumococcal, pertussis and COVID-19 vaccine according to the *Australian Immunisation Handbook*		
	OPTIMISE FUNCTION Encourage regular exercise and physical activity, review nutrition, provide education, develop a management plan and written COPD action plan (and initiate regular review)		
	OPTIMISE TREATMENT OF COMORBIDITIES especially cardiovascular disease, anxiety, depression, lung cancer and osteoporosis		
	REFER to pulmonary rehabilitation for symptomatic patients		
		INITIATE advance care planning	**MANAGE** with oxygen therapy, non-invasive ventilation, surgery and bronchoscopic interventions
Pharmacological Interventions (inhaled medicines)	**START** with short-acting relievers (used as needed): SABA OR SAMA		
		ADD long-acting bronchodilators: LAMA OR LABA Consider combination LAMA/LABA depending on symptomatic response	
			CONSIDER adding ICS: Single ICS/LABA/LABA inhaler may be suitable
	ASSESS AND OPTIMISE inhaler technique at each visit. Minimise inhaler polypharmacy		

4. Medicines for COPD

- Monitor medicine adherence and correct inhaler technique according to product instructions. See Resource 13.

Always use a spacer for metered dose inhalers (pMDI) to reduce local adverse effects and increase delivery of medicine to the airways

- See Table 2. for a guide to manage stable COPD

Table 3. Medicines for all stages of COPD [1–3,6]

SABA

- Always use with spacer
- Takes effect immediately

- **Salbutamol pMDI** 100 micrograms 2 puffs PRN **OR**
- **Terbutaline sulphate turbuhaler DPI** 500 micrograms 1 puff PRN

SAMA

- Ipratropium is not usually used for symptom relief in COPD, is contraindicated in patients taking a LAMA, is more expensive than a SABA, and may increase the risk of cardiovascular events
- Always use with spacer
- 20 minutes to take effect but longer lasting than above

- **Ipratropium bromide pMDI** 21 micrograms 1–2 puffs PRN

LAMA (Non-LAM)

- Cease ipratropium bromide to avoid double dosing
- May cause dry mouth, blurred vision, dizziness and urinary retention
- May rarely precipitate acute angle-closure glaucoma

- **Tiotropium bromide DPI** one 18 micrograms capsule 1 puff daily **OR**
- **Umeclidinium bromide DPI** 62.5 micrograms 1 puff daily **OR**
- **Glycopyrronium DPI** one 50 micrograms capsule 1 puff daily **OR**
- **Aclidinium DPI** 322 micrograms 1 puff bd

LABA

- **Formoterol DPI** 12 micrograms 1 puff bd
- **Salmeterol DPI** 50 micrograms 1 puff bd

Combination ICS/LABA*

- LAMA with combination ICS/LABA is tolerated
- To minimise the risk of oropharyngeal candidiasis rinse mouth with water after use
- Not all inhalers are TGA registered for use in COPD, or listed on the PBS or LAM

- **Salmeterol/Fluticasone DPI or pMDI**
  - 250/25 micrograms 2 puffs bd
  - 500/50 micrograms 1 puff bd
- **Vilanterol/Fluticasone furoate DPI** 100/25 micrograms 1 puff daily
- **Budesonide/Formoterol DPI**
  - 200/6 micrograms 2 puffs bd
  - 400/12 micrograms 1 puff bd

Oxygen therapy*

- See 3.10 Home oxygen
- Long-term low flow oxygen (> 18 hours per day, between 1–3 L/m via nasal prongs) with a target SpO_2 > 88%
- Caution in patients with $PaCO_2$ > 45 mmHg

Oral corticosteroids

- A 5 day course of 30–50 mg daily can reduce duration of exacerbations in stable COPD
- Long term monotherapy is not recommended in COPD

Antibiotics

- Antibiotic therapy should not be used unless the patient has clinical signs of infection

- **Amoxicillin** 500mg tds 5 days **OR**
- **Doxycycline** 100mg daily 5 days

***See LAM and PBS for medicine indications and restrictions**

Table 3. Medicines for all stages of COPD *(continued)* [1–3,6]

Symptom relief
• **Nebulised 0.9% sodium chloride** 5–10 mL qid prn

***See LAM and PBS for medicine indications and restrictions**

5. Cycle of care

Cycle of care summary for COPD

COPD severity		Mild	Moderate	Severe
Action	**Dx**	**Review frequency**		
Height	✓			
Blood pressure	✓	-	12 mthly	6 mthly
Weight	✓	-	12 mthly	6 mthly
BMI	✓	-	12 mthly	6 mthly
Pulse rate	✓	-	12 mthly	6 mthly
Respiratory rate	✓	-	12 mthly	6 mthly
Temperature	✓	-	12 mthly	6 mthly
Spirometry	✓	-	12 mthly	6 mthly
SpO_2	✓	-	12 mthly	6 mthly
PaO_2		For those on or being considered for home oxygen		
CAT score	✓	-	12 mthly	6 mthly
Lifestyle modifications education	✓	Every visit. Specifically smoking cessation, physical activity and diet and nutrition		
Social-emotional wellbeing	✓	-	12 mthly	6 mthly
Advance care planning	✓	-	12 mthly	6 mthly
End of life care	✓	-	-	6 mthly
Inhaler puffer technique	✓	Every visit		
COPD action plan	✓	Every visit		
Influenza, pneumococcal, pertussis and COVID-19 vaccines		See the *Australian Immunisation Handbook* for schedule		
ECG	✓	2 yrly	2 yrly	12 mthly
Chest x-ray	✓	-	If frequent infective exacerbations	
Self-monitoring	✓	-	12 mthly	6 mthly
HW/RN review	✓	-	6 mthly	2 mthly
MO/NP review	✓	-	12 mthly	6 mthly
Medicine review	✓	-	12 mthly	12 mthly
Pulmonary rehabilitation	✓	-	Attend	Attend
Physiotherapist	✓	-	12 mthly	12 mthly
Specialist review	✓	-	If frequent infective exacerbations	

6. References

- All Chronic Conditions Manual references are available at the Office of Rural and Remote Health website

7. Resources

1. Better living with Chronic Obstructive Pulmonary Disease A Patient Guide and The Lung Foundation resources
2. Airway clearance resource
3. Self-Management of Chronic Conditions (SMoCC) service
4. Lung foundation COPD action plan or for Aboriginal or Torres Strait Islander people
5. The spirometry handbook and training tools and the COPD and spirometry resources
6. The COPD Assessment Test (CAT)
7. COPD screening using spirometry
8. The Epworth Sleepiness Scale and STOP-Bang questionnaire
9. Access the Medical Aids Subsidy Scheme (MASS) and Queensland Community Support Scheme
10. The Australian Lung Foundation Pulmonary Rehabilitation Toolkit
11. The Lung Foundation training and education website
12. Individual falls risk screening and Queensland Government's Stay on Your Feet Toolkit
13. Lung Foundation inhaler use videos and printable instructions and the National Asthma Council

Coronary heart disease

High risk groups [1,2,3]

- Those who:
  - are overweight/obese and inactive
  - have poor diets
  - are smokers or drink excessive alcohol
  - are of Aboriginal and Torres Strait Islander or Pacific Islander descent
  - are socioeconomically disadvantaged
  - live in rural or remote locations
  - have pre-existing chronic conditions

Urgent referral

- For acute cardiovascular events (e.g. MI) or a sudden deterioration in condition refer to the *Primary Clinical Care Manual*

1. What is coronary heart disease (CHD)? [1,2,3]

- Leading cause of death in Australia
- Also called coronary artery disease or ischaemic heart disease
- Characterised by the slow deposit of fatty plaque on the inner walls of the coronary arteries of the heart
- Subsequent narrowing of the arteries prevents oxygenated blood from reaching heart muscles causing tissue death (ischaemia) and pain (angina)
- CHD is characterised as:
  - **chronic coronary syndrome (CCS)** – partial narrowing of the arteries that causes stable angina typically lasting several minutes and relieved with rest and medicine (glyceryl trinitrate). Intensive lifestyle modification and medicines are required to prevent progression to acute coronary syndrome (ACS)
  - **acute coronary syndrome (ACS)** – occurs when plaque ruptures or completely blocks blood flow to the heart muscle. This leads to unstable angina (angina occurring at lower levels of exertion or at rest, lasting > 15 minutes), MI or sudden death

2. Diagnosis of CHD [1,2,3]

- Based on clinical presentation, history and risk factors
- Patients typically present with chest discomfort or pain triggered by exertion; may occur with emotional stress or temperature extremes
- Chest pain occurring at rest may be from an ACS
- Associated symptoms include difficulty breathing, dizziness, nausea, sweating or fatigue. Associated symptoms can occur without chest pain in diabetes, renal failure, females, elderly or Aboriginal and Torres Strait Islander persons
- An ACS may be confirmed by new ischaemic changes to a resting 12 lead ECG, or elevation of the cardiac enzymes (blood results)
- CCS may be confirmed by evidence of ischaemia on cardiac stress tests

- Further assessment may include blood test, chest x-ray, coronary angiography and echocardiogram

3. Management of CHD [1]

- Management goals are to stabilise and prevent progression by:
  - behavioural Lifestyle modifications, page 18
  - use of medicines
  - identifying and addressing comorbidities, in particular:
    - Dyslipidaemia, page 317
    - Hypertension, page 345
    - Heart failure, page 325
    - Diabetes, page 304
    - Chronic kidney disease, page 242
    - peripheral vascular disease
    - anaemia
    - thyroid disease
- Manage according to estimated cardiovascular risk. See the Australian cardiovascular disease risk calculator, page 425
- See Table 2.

3.1 Patient self-management support [1,2]

- Provide culturally appropriate information to the patient about CHD:
  - addressing Lifestyle modifications, page 18
  - current or future cardiac events
  - attendance to a cardiac rehabilitation program instigated by the discharging facility. See 3.3 Cardiac rehabilitation
  - safe use and adherence to medicines regimen
  - how to manage CHD by developing an action plan. See 3.4 Action plan
  - the need for ongoing monitoring
  - see Resource 1.
- All patients discharged from an acute facility should have a discharge plan to ensure continuity of care
- Refer patient to SMoCC, a phone service that supports patients manage their condition. See Resource 2.
- Encourage the patient to identify barriers to adequate lifestyle modification and medical adherence and create goals to overcome those barriers. See Engaging our patients, page 19

Table 2. Target goals to manage CHD [1,2]

Risk factor	Target
Smoking	• Cease smoking completely and avoid secondhand smoke. See Smoking cessation, page 48
Diet and nutrition	• 2 serves of fruit and 5 serves of vegetables/day (1 serve = 1 handful) • Reduce salt, sugar or takeaway food. See Diet and nutrition, page 29
Alcohol	• ≤ 2 standard alcoholic drinks per day. No alcohol is best. See Alcohol reduction, page 24
Physical activity	• At least 30 minutes of moderate intensity physical activity (that which causes huffing and puffing and increased heart rate) on most, if not all, days. See Physical activity and sleep, page 34
Weight	• Waist circumference for men < 94 cm • Waist circumference for women < 80cm • BMI of 18.5–24.9 kg/m^2. See Overweight and obesity (adult), page 366
Lipids	• See Dyslipidaemia, page 317
Blood pressure	• < 130/80 mmHg. See Hypertension, page 345
Diabetes	• Fasting blood glucose level between 4.0 and 6.0 mmol/L • HbA1c ≤ 7% (53 mmol/mol). See Diabetes, page 304

3.2 Social-emotional support [1,2,3,4,5]

- Depression is three times more common in patients after an MI than the rest of the population and:
  - results in a worse prognosis for those with CHD
  - decreases adherence to medicines
  - reduces successful lifestyle behaviours modification
  - reduces participation in cardiac rehabilitation
- See Depression, page 286 and Social-emotional wellbeing, page 58

3.3 Cardiac rehabilitation [1,2,6,7]

- A written plan of staged exercise and activity resumption; developed and commenced by the referring hospital and continued in the community
- All patients are encouraged to attend cardiac rehabilitation once medically stable, especially Aboriginal and Torres Strait Islander people who:
  - are at higher risk of heart disease and repeat cardiac events
  - have specific cultural needs
  - participate in cardiac rehabilitation at lower rates than non-Indigenous patients
- Rehabilitation program eligibility are for those:
  - after a MI
  - with unstable or exertional angina
  - with controlled Heart failure, page 325
  - after revascularisation or any other cardiac surgical procedures
- Discuss the benefits of cardiac rehabilitation:
  - improves physical and mental health and quality of life
  - motivates and improves lifestyle behaviours modification and outcomes

  - reduces hospitalisation by up to 56%
  - reduces risk of death by up to 36% within the first year
  - accelerates recovery
  - improves clinical management targets i.e. cholesterol levels, blood pressure etc
  - improves adherence to medicine
- For cardiac rehabilitation programs see Resource 3.

Flowchart 1. CHD action plan

3.4 Action plan

- Develop a written CHD action plan (Resource 4.) with the patient to monitor and action:
  - chest pain, when they get it, how often they get it
  - pattern of pain e.g. frequency, intensity and duration
  - what to do e.g. take certain medicines
  - when to seek help
- See Flowchart 1. CHD action plan

4. Medicines for CHD [1,2,3,4,5,8]

- Medicines reduce the risk of MI or death and provide relief from symptoms
- All patients with CHD should be on a statin irrespective of their lipid levels
- A SSRI is safe and effective to manage depression in people with comorbid CHD
- SSRI has potential interaction with warfarin. See Safe use of warfarin, page 439
- Oestrogen and progestin agents should not be prescribed for primary or secondary prevention of CHD
- If hormone replacement therapy is prescribed for other conditions, the risks and benefits must be considered

Table 2. Long-term medicine management of CHD [1,2,3,4,5,8]

Glyceryl trinitrate (GTN) • For continuing infrequent episodes of chest pain • Advise patient to stop activities and sit before taking medicine • Contraindicated with phosphodiesterase 5 inhibitors commonly used for e.g. pulmonary hypertension or erectile dysfunction. May cause profound hypotension. Do not give unless: – > 12 hours since last dose of avanafil – > 24 hours for sildenafil or vardenafil – > 48 hours for tadalafil – monitor closely
Glyceryl trinitrate spray 400 microgs subling, repeat every 5 minutes if pain persists, (to a max. of 3 doses) **OR** **Glyceryl trinitrate** tab 300–600 microgs subling, repeat every 5 minutes if pain persists, (to a max. of 3 doses)
Antiplatelet therapy • Mono or dual antiplatelet therapy is usually recommended for 12 months after an acute coronary syndrome incident but may vary depending on risk factors as per the cardiologist: – < 12 months may be appropriate for patients at high risk of bleeding – > 12 months may be appropriate for patients at high risk of recurrent ischaemic events • Consult cardiologist for any variation
Aspirin 100–150 mg PO daily **plus one of the following** • **Clopidogrel** 75 mg PO daily **OR** • **Ticagrelor** 90 mg PO bd
Statin • Statin therapy is recommended for all people with CHD and as primary prevention in those at high risk of CHD irrespective of their lipid levels • See Dyslipidaemia, page 317
***See LAM and PBS for medicine indications and restrictions**

Table 2. Long-term medicine management of CHD *(continued)* [1,2,3,4,5,8]

Beta-blockers • For haemodynamically stable patients • For patients with LV dysfunction (LVEF < 40%), use one of the beta-blockers recommended for heart failure (carvedilol, bisoprolol or metoprolol succinate) • Continue beta-blocker therapy indefinitely in high-risk patients with ongoing ischaemia or LV dysfunction
Atenolol 25–100 mg PO daily
Metoprolol tartrate 25–100 mg PO bd
Carvedilol < 85 kg: 3.125 mg PO bd (to max. 25 mg bd). > 85 kg: 3.125 mg PO bd (to max. 50 mg bd)
Bisoprolol 1.25 mg PO daily (to max. 10 mg daily)
Metoprolol succinate MR 23.75 mg PO daily (to max. 190 mg daily)
Angiotensin converting enzyme inhibitors (ACEi) • Aim to titrate the ACEi to the maximum daily dose tolerated • Monitor for hypotension, kidney impairment and hyperkalaemia • Continue long term in patients with heart failure, LV systolic dysfunction, diabetes, anterior MI or coexisting elevated blood pressure
Perindopril arginine (or equivalent erbumine dose) 2.5 mg PO daily (to a max. 10 mg daily)
Ramipril 1.25 mg PO daily (to a max. 10 mg daily)
Captopril 6.25 mg PO bd (to a max. 150 mg daily in divided doses)
Angiotensin II receptor blockers (ARBs) • An ARB may be considered for patients who are intolerant of ACEi • Contraindications to early ARB use include haemodynamic instability and hypotension (SBP < 90 mmHg) • Continue the ARB long term, especially for patients with heart failure, LV systolic dysfunction, diabetes, anterior MI or coexisting hypertension
Irbesartan 75 mg PO daily (to a max. 300 mg daily)
Telmisartan 40 mg PO daily (to a max. 80 mg daily)
Valsartan (non-LAM)* 20 mg PO bd (to a max. 320 mg daily)
Anticoagulant Anticoagulants are recommended in those with Atrial fibrillation, page 226 and in patients who have had a large MI to prevent emboli from left ventricular thrombus
Calcium channel blockers • Reserved for patients with post-MI angina and/or elevated blood pressure not well controlled by other drugs • Avoid diltiazem and verapamil in patients with left ventricular failure, significant dysfunction (LVEF < 40%) or in combination with beta-blocker
Mineralocorticoid receptor antagonists (or Aldosterone antagonists) • Recommended post MI for patients with left ventricular dysfunction (LVEF < 40%), Heart failure, page 325 or Diabetes, page 304 • Examples include eplerenone or spironolactone
***See LAM and PBS for medicine indications and restrictions**

5. Cycle of care

Cycle of care summary for coronary heart disease

Action	Dx	Frequency
Height	✓	Once
BMI	✓	3 mthly
Weight	✓	3 mthly
Waist circumference	✓	3 mthly
Heart rate	✓	3 mthly
BP	✓	3 mthly
FBC	✓	12 mthly
UEC	✓	12 mthly
Fasting lipids	✓	12 mthly
Fasting blood glucose	✓	12 mthly or more frequently if not on target or if medicines recently altered
Urinalysis	✓	12 mthly
ACR	✓	12 mthly
ECG	✓	12 mthly
Risk factor education	✓	3 mthly
Lifestyle modifications	✓	3 mthly
Social-emotional wellbeing	✓	Each visit
Medicine review	✓	12 mthly
Influenza, pneumococcal and COVID-19 vaccines	Recommended. See the *Australian Immunisation Handbook* for schedule	
MO/NP review	✓	6 mthly
Dentist	✓	12 mthly
HW/RN review	✓	3 mthly
Dietitian	✓	Referral as required
Cardiologist	✓	6–8 weeks post cardiac event/surgery and as required
Cardiac rehabilitation	✓	After cardiac event and anyone (with CHD) who would benefit from lifestyle modification should be referred
CV risk assessment	✓	3 mthly

6. References

- All Chronic Conditions Manual references are available on the Office of Rural and Remote Health website

7. Resources

1. Aboriginal and Torres Strait Islander heart disease resources
2. Self-Management of Chronic Conditions (SMoCC) service
3. The National Cardiac Rehabilitation Program Directory and Heart Foundation cardiac rehabilitation resources for healthcare providers
4. A coronary heart disease action plan: Heart attack warning signs

Dementia

High risk groups [1–4]

- Risk increases with age
- Aboriginal and Torres Strait Islander people > 50 years
- Non-Indigenous Australians > 65 years

Urgent referral

- Delirium requires urgent investigation. See the *Primary Clinical Care Manual* for:
  - sudden change in behaviour
  - acute behaviour changes that puts patient or carer at risk of harm

1. What is dementia? [1,2,4]

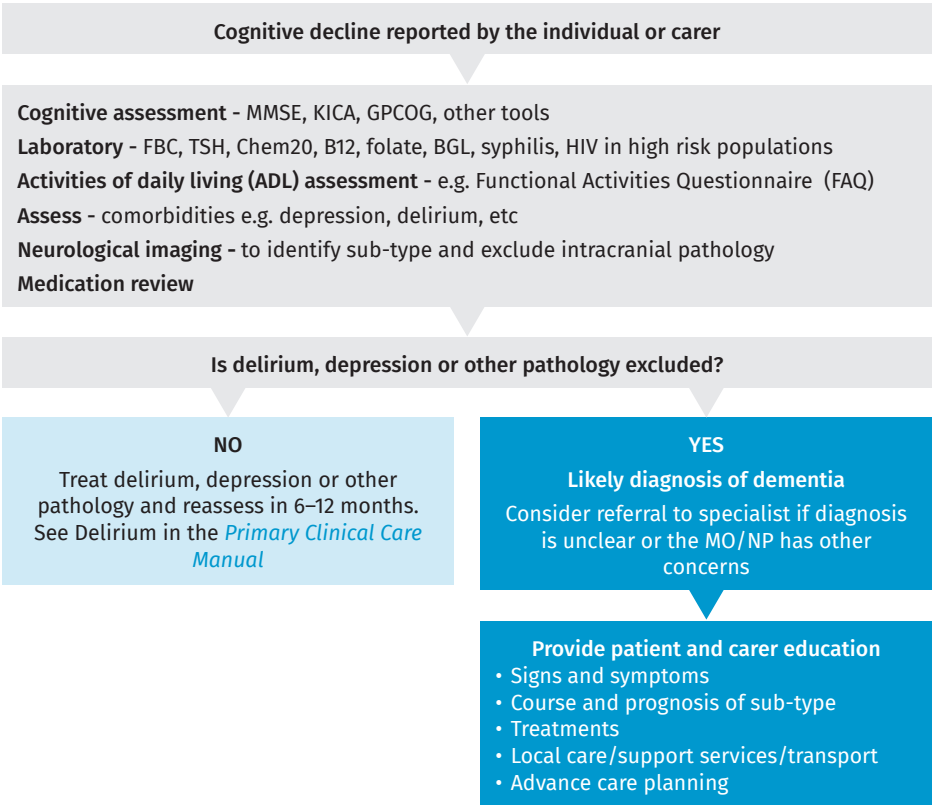
- Dementia:
  - is Australia's second leading cause of death
  - is not a normal part of ageing
  - increases the risk of dying prematurely
  - is up to 5 times higher in Aboriginal and Torres Strait Islander people
- A clinical syndrome characterised by progressive deterioration in cognition and overall function from a previous baseline. Presenting symptoms which may include:
  - memory loss, especially recent events
  - difficulty performing familiar tasks
  - confusion about time and place
  - language problems
  - problems with abstract thinking
  - poor or decreased judgement
  - personality change
  - loss of initiative and motivation
  - altered emotional control and social behaviour
- Consciousness is not impaired
- Dementia progresses in 3 stages:
  - **mild or early –** deficits in tasks requiring complex thinking and organisational skills. See Table 2.
  - **moderate or middle –** the above deficits become obvious, requiring assistance to maintain function
  - **severe or late –** characterised by high dependence
- Lifestyle modifications, page 18 reduces the risk of developing dementia

2. Diagnosis of dementia [1,2]

- Dementia is primarily a clinical diagnosis based on clinical assessment and a carer reported history. See Flowchart 1.
- Symptoms are often reported by a family member or carer
- A comprehensive assessment may confirm the diagnosis and dementia sub-type
- Cognitive screening tools (Resource 1.) include:
  - the Kimberley Indigenous Cognitive Assessment (KICA) Screen or KICA Carer used for Aboriginal and Torres Strait Islander people > 45 years of age and followed

by cognitive assessment with the KICA-Cog tool
- the General Practitioner assessment of cognition (GPCOG) used by GPs for the general population
- the Mini Mental State Examination (MMSE) and the Rowland Universal Dementia Assessment Scale (RUDAS)
- the Functional Activities Questionnaire or the Barthel Index to assess a person's activity of daily living function and level of disability

Flowchart 1. Recognition, assessment and diagnosis care pathway [2,5]



- Laboratory investigations are undertaken to exclude reversible causes:
  - drug or alcohol factors
  - thyroid disease
  - vitamin deficiency
  - medicine side effects
  - mental conditions such as depression
  - neurosyphilis in high risk populations
- Neurological imaging is undertaken to help with diagnostic certainty and to excluded other intracranial pathology e.g. stroke
- Differential diagnosis of delirium or depression can be excluded using validated scales such as the Geriatric Depression Scale or the Cornell Scale for Depression in

Dementia. See Resource 1.

- See Table 1.

Table 1. Distinguishing dementia from delirium and depression [2,5,6,7]

	Dementia	Delirium See Delirium in the *Primary Clinical Care Manual*	Depression See Depression, page 286
Onset	• Chronic, • Progressive	• Acute illness • Medical emergency	• Rapid over weeks to months • Episodic
Course	• Stable during day • Progresses	• Fluctuates hourly	• Can be self-limiting, recurrent, or chronic • Worse in morning, improves during day
Duration	• Progressive, irreversible	• Hours to weeks • Resolves with treatment	• Months or years • Resolves with treatment
Orientation	• Impairment progressively worse • Loss of ability to recognise function of everyday objects	• Disoriented to time and place	• Selective disorientation
Memory	• Impaired short-term • Unconcerned about memory loss	• Impaired short-term	• May be impaired • Concerned about memory loss
Speech	• Repetitive • Trouble finding words • Confabulates	• Incoherent, loud, belligerent	• Quiet and minimal • Can be belligerent, aggressive • Language skills intact
Sleep	• Poor or interrupted sleep	• Disturbed • Changes hourly	• Disturbed • Early morning wakening, sleepy during day
Contributing factors	• Advancing age • Cardiovascular deficits • Substance dependence or • Unknown cause	• Infection • Medicine side-effect • Renal failure • Head trauma • Substance use	• Recent or cumulative • Loss and grieving • Medicine toxicity

3. Management of dementia [2,5,7,8]

- The goal of managing dementia is to build therapeutic partnerships with the individual and carers to support a dignified, productive and active life, being mindful that:
  - a diagnosis of dementia is stigmatising
  - people with dementia have a life history and are often aware when they are not consulted or valued as experts in their own health and lifestyle
  - inclusive language is a key element to reduce stigma and facilitate best care
  - respect and support maximises a persons involvement in their own care

- see Engaging our patients, page 19

3.1 Support patient self-management [1,2,5,7,8]

- Individuals are often aware of their declining abilities and a diagnosis may provide some relief
- Consider early Advance Care Planning, page 141 when diagnosis is made so the patient can plan and retain control over their care and personal life as the condition progresses
- Refer patient to dementia support services after a diagnosis. See Resource 2.
- Provide the patient with dementia resources. See Resource 3.
- Refer to services that support the person to stay in their home. See Resource 4.
- Encourage Lifestyle modifications, page 18 to maximise independent living
- Encourage the patient, family and carers to identify barriers to adequate lifestyle modification and medical adherence and create goals to overcome those barriers. See Engaging our patients, page 19

3.2 Social-emotional support [1,2,5,7,8]

- Major depression may be difficult to detect in people with dementia. Screen for Anxiety disorders, page 197 and Depression, page 286 regularly
- Be mindful that Aboriginal and Torres Strait Islander people:
  - with long-term memory retention might maintain elder roles e.g. to story tell
  - their position of respect may mean the community is reluctant to acknowledge a diagnosis of dementia and associated problems
  - may first present to health services with another concern
- See Social-emotional wellbeing, page 58

3.3 Behavioural changes [1,2,5,7,8]

- Quality of life can be affected by concerning behaviours including:
  - verbal or physical aggression
  - repetitive actions or questions
  - resistance or refusal of personal care or services
  - socially or sexually inappropriate behaviour
  - problems associated with eating
  - intrusive thought, disorientation or agitation
  - sleep disturbance
- Discuss distressing behaviour changes with both the individual and the carer:
  - identify triggers that can alter behaviour e.g. medication toxicity, infections
  - being tolerant of inappropriate dementia related behaviours
  - using behaviour modification, music therapy or medicine to manage behaviours
  - avoiding conflict by listening to the person's perspective
  - using distraction after listening and addressing concerns
  - maintaining regular routines, activities and tasks
  - engaging in activities that soothe and calm the person
  - communicating quietly and calmly
- See Resource 2. and 5. for behaviour support

- Refer to social worker, psychologist or specialist support if needed

3.4 Functional capacity [1,2,5,7,8]

- Refer to an occupational therapist or physiotherapist to assess:
  - activities of daily living (ADLs) and instrumental activities of daily living (IADLs) to ensure individual and carer health and safety. See Table 2.
  - for home supports e.g. wheel chair, bedding, rails, trip hazard review
- Refer eligible people to community support services. See Resource 4. and 6.

3.5 Carer support [1,2,5,7,8]

- Dementia is a source of carer burden, stress, isolation and fatigue, especially with problematic behaviours. 80% of care is provided informally by family members
- Assess and address the needs of the carer. See Engaging our patients, page 19
- Provide emotional and practical support services for carers to address their own needs. See Resources 3. and 7.
- Involve carers in all service co-ordination and interventions including education, visiting specialist, and telehealth, telephone or online service provision
- Referral to respite allows carers to have a break and for the person with dementia to stay in their home longer. See Resource 8.
- See Table 3. for tips when providing care to a person with dementia

Table 2. ADL versus iADL [2]

Activities of Daily Living	Instrumental Activities of Daily Living
Basic self-care tasks: • Getting in and out of bed • Eating meals • Going to the toilet • Showering or bathing • Dressing	**Tasks requiring complex thinking and organisational skills:** • Household cleaning and maintenance • Shopping • Preparing meals • Managing finances • Arranging appointments • Taking medicines

3.6 Physical activity [1,2,5,7,8]

- Be mindful of the risk of falling during exercise, especially in combination with medicines. Assess for home falls risk. See Resource 9.
- Avoid long periods of sitting as much as possible
- Assess for and manage pressure ulcer risk in those who are sedentary. See Resource 10.
- See Physical activity and sleep, page 34

Table 3. Tips when providing care to a person with dementia [1,2,5,7,8]

Tips	Outcomes for patient
• Calmly explain who you are, what you want to do and why. May require repeating	• Provides understanding, clarity and expectation
• Relaxed body language and tone of voice	• Person will mirror your cues
• Move slowly	• Hurried movements convey agitation
• Remove self from aggressive behaviour	• Provides time for person to settle down
• Discuss topics patient enjoyed in the past • Provide familiar items or environment e.g. a face washer, music	• Provides distraction when providing care
• Avoid trivial disagreements or arguing	• Avoids escalation in poor behaviour
• Maintain a coherent environment when providing care e.g. turn radio or television down or off	• Avoids confusion and reduces risk of agitation or aggression
• Provide visual cues e.g. clocks, calendars, labelling of common items	• Provides orienting cues
• Consider personal safety e.g. provide care from the side to avoid being hit or kicked	• Less confronting and provoking
• Monitor food and fluid intake and elimination	• Reduces exacerbating dehydration or constipation and further confusion
• Engage the person in safe physical activity	• Overall health, increases balance and muscle mass and reduces falls risk
• Monitor medicine use and physical health	• Maximises management of condition

3.7 Diet and nutrition [2,5,7,8]

- Ensure the person has the ability to access food and fluids
- For swallowing or eating problems refer to a dietitian or speech pathologist
- Eating and drinking may require prompting or assistance
- See Diet and nutrition, page 29

3.8 Palliative support [1,2,5,7,8]

- Feelings of grief and loss need to be anticipated from the time of diagnosis. Refer for counselling as required
- Provide opportunities with the family to discuss end-of-life issues
- Discuss contents of any advance care planning documents with family
- See Palliative care, page 376

3.9 Pain [1,2,5,7,8]

- Up to 68% of older adults with dementia report persistent pain, heightened sensations and lower pain thresholds due to brain changes
- Recognition and treatment of pain in those with dementia is often overlooked
- While self-reporting is the accepted standard for assessment of pain, those with dementia progressively lose cognitive capacity to communicate their pain
- Use validated tools to determine pain in those with dementia. See Resource 11.
- See Persistent pain, page 387

4. Medicines for dementia

- Regularly review medicines and the person's response to them
- Provide Home Medicines Review (HMR) services to rationalise safe patient medicines use
- Blister and webster packs simplify medicine regimens and improves safety
- Prompting of medicine use by carer may be required
- See Resource 12. for quality use of medicines in those with cognitive impairment

4.1 Cognition [1,2,5,7,8]

- Medicines may slow cognitive decline but do not halt progression
- Minimise or eliminate medicines that contribute to cognitive impairment. See Table 3.

4.2 Altered behaviour [1,2,5,7,8]

- Only consider anti-psychotics for behavioural or psychological symptoms where psychosocial interventions have been unsuccessful. See 3.3 Behavioural changes and 3.5 Carer support

Table 4. Medicines for dementia treatment [1,2,5,8,9]

Acetylcholinesterase inhibitors

- May improve or stabilise cognition, alertness and function
- Requires specialist approval, a baseline MMSE and ECG, falls risk assessment and weight before commencing
- Side effects: gastrointestinal symptoms, insomnia, lethargy, depression, drowsiness, vivid dreams, weight loss
- Use with caution in asthma, COPD, eGFR < 10mL/min, peptic ulcer disease and cardiac conduction abnormalities

- **Donepezil (non-LAM)** 5 mg PO nocte for 4 weeks up to 10 mg PO nocte if tolerated **OR**
- **Galantamine (non-LAM)** 8 mg PO mane for 4 weeks up to 16 mg (if patient deteriorates after initial good response increase dose to 24 mg PO daily if tolerated) **OR**
- **Rivastigmine (non-LAM)** 4.6 mg/24 hours patch, applied daily for 4 weeks. If tolerated and needed increase to 9.5 mg/24 hours patch, applied daily for 4 weeks **OR**
- **Rivastigmine (non-LAM)** 1.5 mg PO bd for 2 weeks up to 3 mg PO bd. Further increases to 4.5 mg and 6 mg PO bd may be considered every 4 weeks as tolerated

Glutamate blocker

- Requires specialist approval for advanced dementia
- May be used in conjunction with a cholinesterase inhibitor
- Side effects: confusion, dizziness, drowsiness, headache, insomnia, agitation, hallucinations
- Use with care in patients with renal impairment

- **Memantine (non-LAM)** 5 mg PO mane increasing by 5 mg wkly (to max. 20 mg)

Antidepressants (SSRIs preferred)

- To manage and adjust depression medicines see Depression, page 286

- **Citalopram**
  - 20 mg PO mane up to 40 mg
  - in elderly 10 mg PO daily. If needed slowly increase after 2–4 weeks (to max. 20 mg)
- **Escitalopram**
  - 10 mg PO mane up to 20 mg
  - in elderly 5 mg PO daily. If needed slowly increase after 2–4 weeks (to max. 10 mg)
- **Mirtazapine** 15 mg PO nocte. If needed slowly increase to 30–45 mg PO nocte (to max. 60 mg)

Table 4. Medicines for dementia treatment *(continued)* [1,2,5,8,9]

Antipsychotics

- Use the lowest effective dose for the shortest period of time for agitation, aggression or psychosis only. Review at 12 weeks and consider dose reduction
- Avoid in those with Parkinson's disease and those with dementia with Lewy bodies
- Favour medicines with sedating qualities
- Use of antipsychotics may increase the risk of stroke

- **Risperidone** 0.25 mg PO bd. If needed slowly increase by 0.25 mg PO bd every 2 or more days (to max. 2 mg daily in 1 or 2 doses)
- **Olanzapine** 2.5 mg PO daily. If needed increase by 2.5 mg PO daily every 2 or more days (to max. 10 mg daily in 1 or 2 doses)

Benzodiazepines

- Avoid for treatment of agitation, aggression and psychosis in dementia
- Associated with cognitive decline, urinary incontinence, falls, hip fractures, dependence and all-cause mortality

5. Cycle of care

Cycle of care summary for dementia

Action	Dx	Review frequency
Height	✓	-
Weight	✓	6 mthly
BMI	✓	6 mthly
Waist circumference	✓	-
BP	✓	6 mthly
ECG	✓	-
FBC, TSH, Chem20 (E/LFT's), B12, Folate	✓	12 mthly
Continence	✓	Each visit
Carer education and support	✓	3 mthly
Nutrition	✓	3 mthly
Social-emotional wellbeing	✓	Each visit
Influenza, pneumococcal and COVID-19 vaccines	Recommended. See the *Australian Immunisation Handbook* for schedule	
Lifestyle modifications	✓	Each visit
Medicine review	✓	6 mthly
HW/RN review	✓	3 mthly
MO/NP review	✓	6 mthly
Occupational therapist	✓	As required
Dentist	✓	12 mthly
Dietitian	✓	As required
Specialist review	✓	As required
HACC and MASS	✓	As required
Falls risk assessment	✓	As required
Advance care planning	✓	12 mthly
Palliative care	✓	As required

6. References

- All Chronic Conditions Manual references are available on the Office of Rural and Remote Health website

7. Resources

1. Queensland Health Cognitive screening assessment tools
2. Dementia Australia support services and Forward with dementia
3. The Statewide Dementia Clinical Network for all dementia resources or the National Dementia Helpline (1800 100 500)
4. All aged care services via myagedcare
5. The Dementia Behaviour Management Advisory Service (1800 699 799)
6. Medical Aids Subsidy Scheme (MASS)
7. Carers Queensland and Carer Gateway
8. Respite services
9. Individual falls risk screening
10. The Waterlow Pressure Ulcer Risk Assessment Tool
11. the Pain Assessment in Advanced Dementia Scale (PAINAD) for those with dementia or the Abbey pain scale for non-verbalising people
12. Quality use of medicines in those with cognitive impairment

Dental caries and periodontal disease

High risk groups [–3]

- People with poor diets
- People with diabetes, cardiovascular disease and other chronic conditions
- Pregnant women
- People with intellectual or physical impairment
- Dependent older people
- People living in areas without fluoridated tap water
- People living in rural and remote locations
- Aboriginal and Torres Strait Islander peoples
- socioeconomically disadvantaged

Considerations in pregnancy [2]

- Periodontal disease is a risk factor for preterm and low birth weight babies

Urgent referral

- Refer to the *Primary Clinical Care Manual* for facial swelling, knocked out (avulsed) teeth, substantial facial trauma, acute periodontal disease or toothache

1. What is dental caries and periodontal disease? [1,4–6]

- The two main oral conditions experienced by most Australians
- **Dental caries** (decay) results from destruction of tooth tissue:
  - begins with acids originating from plaque bacteria metabolising carbohydrate (from sugary foods and drinks)
  - in the presence of acid, calcium and phosphate ions that make up the tooth surface, diffuse out of the tooth enamel (demineralisation)
  - tooth enamel eventually breaks down to form a hole or cavity
- Saliva plays an important role in the remineralisation (repair) of the tooth surface
- The risk of dental caries increases with certain chronic conditions, medicines, diets and behaviours that cause a dry mouth
- **Periodontal (gum) disease** is chronic inflammation of the gums and structures that support the teeth:
  - caused by plaque bacteria resulting in deep gum inflammation
  - progresses slowly and is often painless
  - the teeth loosen and may eventually be lost
  - bacteria can collect in the space that attaches the tooth to the jaw leading to permanent bone loss
- These oral conditions impact other chronic conditions e.g. diabetes and heart disease

2. Diagnosis of dental caries and periodontal disease [2,3,6]

- Identification is a simple case of gaining a brief history and examining the mouth
- Dental caries are identified by:
  - early white or frosty non-cavitated lesions
  - brown (active) or black (inactive) cavities or structural damage
  - pain and sensitivity
  - bad breath or a bad taste in the mouth
  - dental x-rays
- Periodontal disease is identified by:
  - gums that spontaneously bleed or bleed during brushing
  - painful, tender, inflamed, swollen or receding gums
  - bad breath or a bad taste in the mouth
  - sensitive, loose or lost teeth

3. Management of dental caries or periodontal disease [1–8]

- Management goals are to promote and maintain optimal oral health by:
  - practising good oral hygiene:
    - Smoking cessation, page 48
    - brushing and flossing twice daily with fluoride containing toothpastes
    - wearing a mouthguard when playing contact sports
  - healthy dietary intake:
    - breastfeeding
    - choosing healthy snacks like fruit, cheese and vegetables
    - limiting sugary foods and drinks
    - drink plenty of tap water
    - avoiding alcohol
  - seeking regular dental visits:
    - arrange for children to have a dental assessment by 2 years of age. See Oral health (child), page 120

3.1 Support patient self-management [1–3]

- Support the patient with lifestyle modification with particular focus on Smoking cessation, page 48 and Alcohol reduction, page 24
- Provide dental caries and periodontal disease resources. See Resource 1.
- Encourage the patient to identify barriers to adequate lifestyle modification and medical adherence and create goals to overcome those barriers. See Engaging our patients, page 19

3.2 Social-emotional support

- See Social-emotional wellbeing, page 58

3.3 Diet and nutrition [1–5]

- Frequent exposure to dietary sugars and acids is the primary cause of dental caries
- Sticky foods e.g. dried fruit and lollies are a higher risk for decay than foods easily

washed away e.g. cheese and fruit
- Frequent snacking increases tooth surface exposure to acids
- Less snacking reduces acid exposure and increases remineralisation time
- Avoid sugary and diet soft drinks, sports and energy drinks and juice
- If bottlefeeding, only use breastmilk, infant formula or water in the bottle
- Continuous breast or formula feeding in children > 12 months can cause decay
- During interrupted sleep avoid sipping drinks, other than water
- Avoid chewing or sucking acidic vitamin tablets
- Encourage a healthy well balanced diet. See Diet and nutrition, page 29

3.4 Fluorides and fluoride varnish [6,9,10]

- Water fluoridation is the most efficient and well established method for reducing dental caries in a community. In communities where there is no fluoridated drinking water:
  - provide advice about alternate fluoride sources e.g. mouth rinses, high fluoride toothpastes, fluoride varnish
  - advocate on behalf of their community for water supplies to be fluoridated. See Resource 3.
  - promote healthy oral hygiene behaviours
- Fluoride varnish:
  - is applied by dental practitioners and those authorised to do so. See Table 1.
  - is used to prevent dental caries in those at risk e.g. those in rural and remote locations
  - releases fluoride over 24 hours to increase calcium fluoride reserves and long term fluoride release
  - can be applied to individual teeth or spot application to localised areas
- Fluoride supplements (tablets or drops) are not recommended for use in Australia as a public health measure

Table 1. Topical applications to reduce dental caries [6]

Application	Use in patients at high risk of dental caries
Fluorides	
Fluoride varnish • 22,600 ppm (22.6 mg/mL)	• Applied to all dental surfaces by a dental practitioner or other authorised persons only • 2–4 times annually if high risk

3.5 Smoking cessation [1–8,11]

- Smoking:
  - reduces blood oxygen supply to gums and increases risk of periodontal disease
  - increases rates of bad breath (halitosis), tooth staining and loss and acute ulcerative gingivitis than those who don't smoke
  - is a significant risk factor for oral cancers
- Refer patient to a smoking cessation program. See Smoking cessation, page 48

3.6 Toothpastes and gels [1–6]

- Encourage brushing with toothpaste or gel as they:
  - provide a source of fluoride and promote remineralisation of the tooth surface
  - can reduce tooth sensitivity
  - reduce the build up of acid producing bacteria and plaque
  - assist in tooth surface stain removal
- From the age that teeth first erupt to 18 months of age:
  - teeth should be cleaned without toothpaste by a responsible adult
  - in areas with unfluoridated water supplies, teeth should be cleaned twice a day with a pea-sized amount of low fluoride toothpaste 400 to 550ppm (0.4 to 0.55 mg/g) by a responsible adult
- Between 18 months and 5 years of age:
  - teeth should be cleaned twice a day with a pea-sized amount of low fluoride children's toothpaste by or under the supervision of a responsible adult
  - when finished children should spit out. Do not rinse or swallow
  - children should avoid licking or eating toothpaste
- For over 6 years of age:
  - teeth should be cleaned twice a day or more with standard fluoride 1000ppm (1mg/g) toothpaste
  - when finished spit out. Do not rinse or swallow
- Children should not dispense toothpaste without supervision
- Keep toothpaste out of reach of young children

3.7 Toothbrush and denture brush [2,4,6]

- Electric toothbrushes are a superior plaque removal tool and useful where a persons manual dexterity is limited
- Grip, head size, shape and bristle flexibility are matched to individual needs
- Effectiveness depends on technique and physical ability of the individual
- Hard brushes and abrasive toothpastes can result in tooth wear, ulcerations and gum recession
- Replace toothbrushes after 3–4 months or sooner if bristles become frayed

3.8 Interdental cleaning [2,4,6]

- Toothbrushes do not remove plaque from between teeth
- Use dental floss, ribbon or tape to effectively remove plaque from between teeth
- Pre-threaded flossing tools and interdental brushes are available and useful where there is significant spacing between the teeth

3.9 Reduce a dry mouth (xerostomia) [2,3,6–8,11]

- Saliva is the bodys natural defence against tooth decay that:
  - clears food debris and bacteria from around teeth
  - neutralises harmful acids produced by plaque, foods and drinks
  - protects the soft tissues of the mouth
  - prevents fungal infections
  - acts as a vehicle for minerals such as fluoride, calcium and phosphate to help

strengthen tooth enamel
- Saliva flow is reduced with:
  - smoking cigarettes and drinking alcohol or caffeinated beverages
  - snoring or breathing through the mouth
  - dehydration from fever, vomiting, diarrhoea, exercise or low fluid intake
  - Depression, page 286 and Anxiety disorders, page 197
  - increasing age
  - Diabetes, page 304, Dementia, page 271 and Stroke and transient ischaemic attack, page 413
  - many medicines e.g. methylphenidate for the treatment of ADHD, antidepressants, antihistamines, decongestants and antihypertensives
  - chemotherapy and radiotherapy
- Actions to improve saliva production to assist with tooth remineralisation and relieve a dry mouth include:
  - chewing sugar-free gum
  - using 'saliva substitutes' (available from pharmacies)
  - taking frequent sips of water
  - avoiding lollies and soft drinks
  - Smoking cessation, page 48 and Alcohol reduction, page 24
  - limiting caffeinated drinks e.g. tea, coffee, sports and soft drinks
  - using gravies and sauces to make food softer and easier to chew and swallow

3.10 Mouth rinses [2,6,9]

- Agents in mouth rinses may be effective in reducing plaque and gingivitis
- Fluoride containing mouth rinses have caries-inhibiting effects and should only be prescribed by a dental practitioner
- Avoid mouth rinses containing alcohol

4. Medicines for dental caries or periodontal disease

4.1 Antibiotic prophylaxis [12,13]

- Is only required to prevent infective endocarditis before some dental procedures (see below) in patients with:
  - Rheumatic heart disease, page 406
  - prosthetic cardiac valve and material used for repair
  - previous infective endocarditis
  - congenital heart disease (under certain circumstances)
- Anticoagulants may need to be ceased prior to dental procedures

4.2 Dental procedures requiring antibiotic prophylaxis [13,14]

- Unless otherwise determined between the dentist and specialist, the only dental procedures requiring antibiotic prophylaxis involving:
  - extraction
  - implant placement
  - biopsy
  - removal of soft tissue or bone
  - subgingival scaling and root planing
  - replanting avulsed teeth

Table 2. Antibiotic prophylaxis for prevention of endocarditis [8,12,13]
Standard prophylaxis
Amoxicillin 2 g (child: 50 mg/kg up to 2 g) PO, 1 hour before the procedure **OR** If oral administration not possible then: **Amoxicillin or ampicillin** • 2 g (child: 50 mg/kg up to 2 g) IM, 30 mins before procedure **OR** • 2 g (child: 50 mg/kg up to 2 g) IV, 1 hour before procedure
For delayed hypersensitivity to penicillin
Cefalexin 2 g (child: 50 mg/kg up to 2 g) PO, 1 hour before procedure **OR** If oral administration not possible then: **Cefazolin** • 2 g (child 30 mg/kg up to 2 g) IM, 30 minutes before procedure **OR** • 2 g (child 30 mg/kg up to 2 g) IV, 1 hour before the procedure
For immediate severe/non-severe or delayed severe hypersensitivity to penicillin
Clindamycin • 600 mg (child 20 mg/kg up to 600 mg) PO, 1 hour before procedure **OR** If oral administration not possible then: • 600 mg (child 20 mg/kg up to 600 mg) IV, within 120 minutes before the procedure

5. Cycle of care

Cycle of care summary for dental caries and periodontal disease

Action	Dx	Review frequency
Oral health education	✓	Each visit
Lifestyle modifications	✓	Each visit
Social-emotional wellbeing	✓	12 mthly
Self manage education	✓	12 mthly
Dentist or therapist review	✓	12 mthly
MO/NP review	✓	As required
RN/IHW review	✓	Each visit
Dental specialist	✓	As per MO/NP or dentist referral

6. References

- All Chronic Conditions Manual references are available on the Office of Rural and Remote Health website

7. Resources

1. Healthy Teeth For Life–Fact Sheets and Dental prevention and promotion information
2. The NHMRC Public Statement on Water fluoridation and human health in Australia and fluoride information
3. Queensland Government Quitline

Depression

High risk groups [1–6]

- Permanent aged care facility residents
- Physically inactive
- Overweight and obese
- Harmful levels of alcohol consumption
- Aboriginal, Torres Strait Islander and culturally and linguistically diverse groups
- Sexual minorities and gender diverse groups
- Socioeconomically disadvantaged and homelessness
- Prolonged grief and emotional pain
- Exposure to emotional neglect, or sexual and physical abuse
- Childhood trauma
- People with disabilities and life-limiting injuries
- Post-partum women until child is 3 years of age

Considerations in pregnancy [7–9]

- Suspect depression in both the antenatal and postnatal periods
- Assess risks and benefits of antidepressants while pregnant and breastfeeding
- Offer to screen using the Edinburgh Postnatal Depression Scale (EPDS) or Kimberley Mum's Mood Scale (KMMS) (Resource 1.):
  - early in pregnancy and at least once in later pregnancy
  - 6–12 weeks after birth and as required over the following months
  - monitor those who score 10–12 every 2–4 weeks
  - refer all patients to mental health services who answer 'yes' to question 10 or score > 13

Urgent referral

- Refer to Mental health services or to the *Primary Clinical Care Manual* for:
  - protracted or severe depression
  - atypical features
  - psychotic episodes
  - high risk of suicide or self-harm
- Lifeline 1300 131 114 (local call)
- Kids Helpline 1800 55 1800 (free call)

1. What is depression? [1–9]

- A low or irritable mood, resulting in a loss of enjoyment or pleasure and impairing a person's ability to function. See Table 1.
- Can be long lasting or recurrent
- Common and treatable but can result in disability or death if left untreated
- Recurrence is common even when treated appropriately. Each episode increases

the risk of future episodes
- Depression varies for each person and may change over time
- Table 1. outlines key signs and symptoms of depression
- Types of depression include:
  - **Major depression** – occurs in episodes. Must meet the criteria in Table 1. for a diagnosis to be considered
  - **Dysthymia** – a milder version with fewer physical symptoms than major depression but often lasts longer. It is defined by emotional symptoms such as dark or gloomy thoughts
  - **Psychotic depression** – extreme thoughts of profound despair, guilt and self-loathing, strongly-held false beliefs, agitation, hallucinations and severe social withdrawal
  - **Bipolar disorder** – symptoms of depression and mania at different times. Mania is a period of elevated mood with symptoms such as rapid speech, reduced need for sleep and excessive behaviours like gambling, promiscuity and shopping sprees
  - **Perinatal depression** – experienced by 10% of prenatal and 16% of postnatal women. Most prevalent 6 months postnatally. Depression before baby's 3rd birthday is considered postnatal depression

2. Diagnosis of depression [1,6,8]

- Diagnosis of depression involves 2 clinical processes:
  - **initial assessment:**
    - identifying a patient's strengths to guide management e.g. their place in the family, school or employment and their local environment
    - psychosocial assessment with validated screening tools. See Resource 1.
    - identifying distress e.g. grief, conflict or stress from developmental, familial or sociocultural events
    - reports from family, carers or others of changes to symptoms over time
  - **exploration of depressive symptoms:**
    - symptoms consistent with depression diagnostic criteria. See Table 1.
    - exclusion of other depressive symptom causes e.g. other mental health conditions, substance use or comorbidities
    - suicidal and self-harm ideation when symptoms are present
    - categorise severity of depression as:
      - **mild** – symptoms cause distress with some difficulty carrying out usual activities
      - **moderate** – several symptoms may be present to a marked degree with considerable difficulty carrying out usual activities
      - **severe** – symptoms cause considerable distress, agitation or psychomotor retardation with an inability to continue usual activities beyond a minimal extent. Somatic symptoms are prominent and suicide is a particular risk

Table 1. Diagnostic criteria for major depressive disorder [10]

- **Any or all** observed or reported by self or others
- **Five or more of the following** symptoms have been **present during the same 2 week period** and represent a change from previous functioning **and at least one** of the symptoms **is either dysphoria or anhedonia** and:
  - the symptoms cause clinically significant distress or impairment in social, occupational or other important areas of functioning
  - the episode is not attributable to the physiological effects of a substance or another medical condition
  - at least one episode is not explained by schizophrenia or a schizoaffective disorder, a delusional disorder, or another psychotic disorder
  - there has never been a manic episode or a hypomanic episode

Symptoms	Manifestation
Depressed mood (dysphoria)	• Feels sad, empty, hopeless • Most of the day, nearly every day • Can be irritable mood in children and adolescents
Loss of interest or pleasure (anhedonia)	• Markedly reduced interest or pleasure in all, or almost all, activities • most of the day, nearly every day
Weight loss or gain	• Significant weight loss or gain (> 5% change in 1 month) or decrease or increase in appetite nearly every day • Failure to make expected weight gains in children
Insomnia or hypersomnia	• Nearly every day
Psychomotor agitation or retardation	• Feelings of restlessness or being slowed down • Nearly every day
Fatigue or loss of energy	• Nearly every day
Feelings of worthlessness or excessive or inappropriate guilt (may be delusional)	• Not merely self-reproach or guilt about being sick • Nearly every day
Diminished ability to think or concentrate, or indecisiveness	• Nearly every day
Recurrent thoughts of death or suicide	• Not just fear of dying • Suicidal ideation with or without a specific plan or a suicide attempt

3. Management of depression [2,9]

- The goal of managing depression is to avoid relapse or recurrent episodes by:
  - building therapeutic partnerships with the individual and carers by involving them in communication, co-ordination and treatment
  - supporting a dignified, productive and active life
  - identifying and addressing coexisting Anxiety disorders, page 197
  - Identifying and addressing suicidal or self-harm ideation. See 3.1 Suicide risk
  - promoting Lifestyle modifications, page 18 and psychological therapies as first line treatment for mild to moderate depression

3.1 Self-harm risk [2,6,7]

- Assessment of self-harm risk is crucial, but can be difficult
- Table 2. provides a guide to assess self-harm risk at each visit
- Patients who have the following features should be assessed for suicidal ideation:
  - male
  - Aboriginal and Torres Strait Islander people
  - age < 20 years and > 45 years of age
  - past major depressive episodes
  - previous suicidal attempts
  - drug or substance use
  - loss of rational thinking e.g. psychosis or severe depression
  - loss of a partner, social isolation or community separation (shame)
  - loss of supports, isolation or lack of community connection
  - a suicide plan
  - resources and ability to carry out suicide plan
  - chronic or terminal illnesses
- Refer to Life Promotion Officers and crisis counselling services. See Resource 2.
- Provide resources to those who have attempted suicide and their support person. See Resource 3.

3.2 Support patient self-management [2,8]

- Provide depression information related resources. See Resource 4. and 5.
- Discuss the role lifestyle modification, particularly physical activity, has in improving self-esteem and mood
- Develop a management plan for the course of treatment
- Encourage women during and after pregnancy to regularly perform a self administered EPDS or KMMS. See Resource 1.
- Encourage the patient to identify barriers to adequate lifestyle modification and medical adherence and create goals to overcome those barriers. See Engaging our patients, page 19

3.3 Social-emotional support [1,2]

- Anxiety disorders, page 197 coexists in up to 50% of those with depression
- See Social-emotional wellbeing, page 58

3.4 Carer support [10]

- The burden of caring for someone with depression is a source of depression and stress in its own right
- Carers may experience isolation and abuse if patient is violent or agitated
- Ensure carer is supported and engaged in service coordination
- Provide resources and refer carers to support services to assist with their own needs. See Resource 7.
- Referral to respite allows carers to have a break and enables patients to stay in their home longer. See Resource 8.

Table 2. Questions to assess self-harm risk [7]

Assessment of self-harm risk
• People who feel like you, sometimes think life is not worth living; have you thought that? • Have you been thinking of harming yourself? • Are you thinking of suicide? • If yes, how often are you having these thoughts? • Have you thought about how you would act on these? • Is there a plan? (explore the plan; is it feasible? available to the patient? will it succeed?) • Have you thought about when you might act on this plan? • Are there any things/reasons that stop you from acting on these thoughts? • Have you tried to harm yourself in the past? • If yes, how many times? • When was the most recent time? • Do you know anyone who has tried to harm themselves? • Have you had a friend who has suicided? • Has there been an anniversary of an incident that effected you emotionally? e.g. death of friend or loved one • Do you feel safe at the moment?
If a suicide attempt has been made
• What did you hope would happen as a result of your attempt? (die, end their pain, other?) • Do you regret that you did not succeed? • Do you still have access to the method used? • Did you use alcohol or drugs before the attempt? What did you use? • Do you have easy access to a weapon?
Assessment of risk of harm to others
• Have you thought of hurting anyone else? • If yes, have you acted on these thoughts? • Have you been involved in any fights recently? • If yes, were you using drugs or alcohol at the time?
Added alerts to consider for Aboriginal or Torres Strait Islander people
• Recent social group bereavement? Suicide? Imprisonment? Conflict? • Previous or current trouble with legal issues?
If you suspect your patient is at risk of harm to themselves or others, refer immediately to the *Primary Clinical Care Manual*

3.5 Substance use

- Identify and manage co-occuring substance use to treat depression effectively
- Refer patients with co-occurring mental illness and substance use disorder to MHAODs
- See Alcohol reduction, page 24 and Smoking cessation, page 48

3.6 Psychotherapy [2,6,7]

- Psychotherapy is associated with lower relapse rates after two to three years
- Cognitive behaviour therapy (CBT) and interpersonal psychotherapy (IPT) are considered first line treatment
- Psychotherapy:
  - can be as effective as antidepressants for mild to moderate depression
  - may provide skills that reduce risk of relapse

  - requires commitment by the person with depression
  - requires referral to an appropriately trained clinician e.g. social worker, mental health worker or psychologist
- General principles of psychotherapy are to:
  - problem-solve stressors at the time they occur
  - resist thoughts of pessimism and self-criticism and replace them with realistic thoughts
  - practise behavioural activity tasks to improve mood

3.7 Relapse and recurrent depression [2,6,7]

- Most presentations will be for a second or subsequent episode of depression
- Check diagnosis and consider a second opinion
- Identify barriers to medicine adherence (e.g. nausea or sexual dysfunction) and discuss solutions (e.g. medicine change or counselling)
- Monitor adequacy of medicines dosage and treatment period
- Consider second line treatments
- Reassess the patient's knowledge, participation and adherence to their treatment regimen for at least 1 year for a first episode and 3 years for recurrent episodes

4. Medicines for depression [2,6,7,9]

- Lifestyle modifications and psychological therapies are first line treatment for mild to moderate depression
- For patients who benefit from initial antidepressant treatment, continue treatment for 6–12 months to prevent relapse
- Monitor medicines regularly with special attention to adherence
- **Do not use tricyclic antidepressants** to treat major depressive disorder in adolescents
- Seek specialist advice before initiating medicines in children

Suicide risk is high for young people < 25 years of age on antidepressants. Monitor closely

- Flowchart 1. illustrates medicine management of depression

4.1 Antidepressant choice [2,7,9]

- When choosing an antidepressant start with any first line medicine. See Table 3.
- Monitor patient every 2–4 weeks once therapy has been commenced until satisfactory response has been achieved
- An alternate antidepressant is indicated where there is good adherence but the therapeutic response is poor despite uptitration to maximum dose over 4–8 weeks
- To reduce the risk of interactions when changing or commencing antidepressants consider their class and an adequate washout period. See Resource 8
- Inform patients:
  - SSRIs and SNRIs are well tolerated, however side effects are worse initially e.g. nausea, sedation

- improvement to symptoms should occur 2 weeks after medicine initiation
- provide Resource 9. to those taking psychotropic medicines

Flowchart 1. Medicine management of depression [7,8,9]

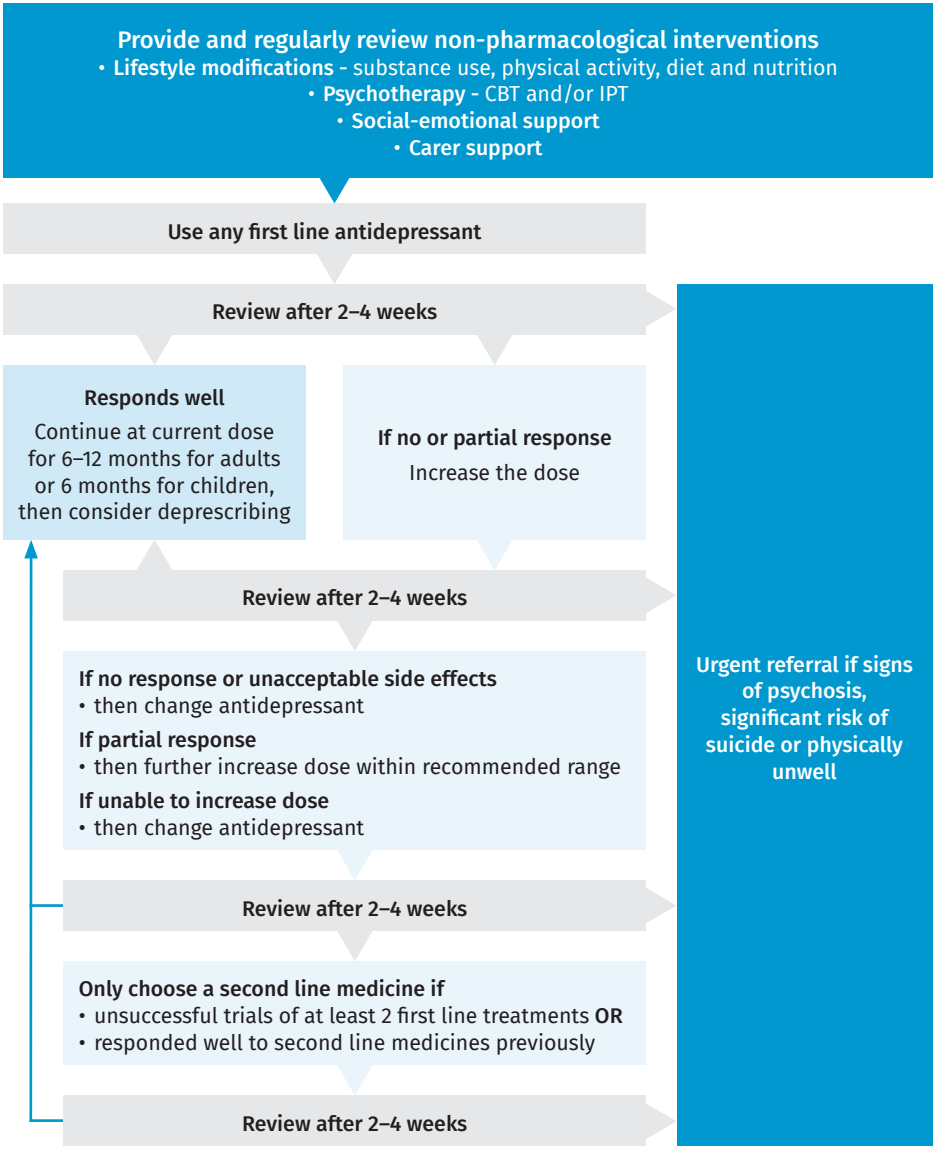


Table 3. Medicines for depression [6,9,11,12]

First line medicines
Selective serotonin reuptake inhibitors (SSRIs) • Side effects include: nausea, diarrhoea, sleep disturbance, orthostatic hypotension, dizziness, hyponatraemia, increased risk of GI bleeding, sedation and weight gain • Sexual dysfunction may occur e.g. loss of libido, orgasm and ejaculatory disturbance • Sertraline most commonly used in pregnancy • Compatible with breastfeeding • If drowsiness occurs give in the evening • **Montior closely in children and adolescents**
Fluoxetine 20 mg PO mane up to 60 mg
Fluvoxamine 50 mg PO mane up to 300 mg in divided doses
Escitalopram 10 mg PO mane up to 20 mg. If > 65 years commence 5 mg PO daily up to 10 mg
Paroxetine 20 mg PO mane up to 50 mg. If > 65 years commence 10 mg PO daily up to 40 mg
Sertraline 50 mg PO mane up to 200 mg
Citalopram < 65 years old 20 mg PO mane up to 40 mg; > 65 years old 10 mg PO mane up to 20 mg
Mirtazapine • Side effects include increased appetite, weight gain, sedation, weakness, peripheral oedema • **Not used in children and adolescents**
Mirtazapine 15–30 mg PO nocte up to 60 mg
Second line medicines
Serotonin and noradrenaline reuptake inhibitors (SNRIs) • Side effects as for SSRIs, plus tachycardia, hypertension • Compatible with breastfeeding • **Not used in children and adolescents**
Venlafaxine CR 75 mg PO mane up to 375 mg
Duloxetine 60 mg PO mane up to 120 mg. Reduce dose in renal impairment
Desvenlafaxine CR 50 mg PO mane up to 200 mg. Reduce dose in renal impairment
Third line medicines • Under supervision of a psychiatrist for patients with treatment-resistant major depression or those who have previously responded to them well
SSRI/SNRI + Mirtazapine (combination as above)
Tricyclic antidepressants (TCAs) • Side effects include: sedation, dry mouth, blurred vision, pupil dilation, decreased lacrimation, constipation, weight gain, orthostatic hypotension, sinus tachycardia, urinary hesitancy or retention, reduced GI motility, anticholinergic delirium (in the elderly and in Parkinson's disease), impotence, loss of libido, tremor, dizziness, sweating, agitation, insomnia, anxiety, confusion • Below has high risk of fatality in overdose. **Not used in children or adolescence**
Amitriptyline 25–75 mg PO nocte, to target dose of 150 mg (max. 300 mg)
Doxepin 25–75 mg PO nocte, to target dose of 150 mg (max. 300 mg)
Clomipramine 25–75 mg PO nocte, to target dose of 150 mg (max. 300 mg)
Selective, reversible MAO-A inhibitors • **Not used in children and adolescence**

5. Cycle of care

Cycle of care summary for depression

Action	Dx	Frequency
Full physical health check	✓	12 mthly
TFT, FBC, LFTs, UEC, glucose, syphilis serology, fasting lipids	✓	Dependent on any underlying medical condition and medicine use
BP	✓	At 1 mth, then every 3–6 mths based on medicines
Height, weight and BMI	✓	At 1 mth, then every 6 mths
Waist circumference	✓	
Electrocardiogram	✓	Perform if condition changes
Self harm risk	✓	At each review
Substance use	✓	Screen every 6 months
Medicine review	✓	Wkly for 6 wks then at 6 mths and 12 mths. May need to be more often based on clinical presentation
Mental state examination (MSE)	✓	
Lifestyle modifications	✓	
Mental Health Worker review	✓	Wkly until stable
Mental health team (MHAODs)	✓	As required
MO/NP	✓	Wkly until stable then with medicine review
Psychiatrist	✓	For moderate/severe/unresponsive depression or immediately if self-harm is identified

6. References

- All Chronic Conditions Manual references are available on the Office of Rural and Remote Health website

7. Resources

1. The Edinburgh Postnatal Depression Scale – Kimberley Mum's Mood Scale (KMMS)
2. Life promotion and counselling support is available from: Suicide Call Back Service or BluePage or beyondblue or the Black Dog Institute or Lifeline 1300 131 114 (local call) or Kids Helpline 1800 55 1800 (free call) or Head to Health or e-mental health in practice
3. Finding your way back – resources for support after a suicide attempt
4. Depression related resources are available from BluePage or beyondblue or the Black Dog Institute
5. For perinatal depression related resources see PANDA or PANDA'S national perinatal mental health helpline 1300 726 306 or Queensland Centre for Perinatal and Infant Mental Health's promotion and prevention resources
6. Carers Queensland
7. Respite care service via myagedcare
8. For antidepressant washout periods see the Australian Medicines Handbook or the Therapeutic Guidelines
9. Mental health medicine information for consumers and carers

Developmental delay or disability (child)

High risk groups [1–4]

- Children of women with substance dependency during pregnancy
- Children of women who give birth > 35 years of age
- Family history of developmental delay or disability
- Aboriginal and Torres Strait Islander or culturally and linguistically diverse backgrounds
- Living in rural and remote communities
- In out-of-home care
- Medical and/or mental health comorbidities
- Adverse events as neonates

Considerations in pregnancy [1–3]

- Inherited or persistent environmental causes of developmental delay or disability and implications for future children
- Consider future reproductive choices and offer contraception if desired
- Provide harm minimisation family planning information before and during pregnancy:
  - See Alcohol reduction, page 24
  - See Smoking cessation, page 48
  - See Sexual and reproductive health, page 39
  - See Diet and nutrition, page 29
  - provide pregnancy multivitamins including higher doses of folate with diabetes

Urgent referral [2]

- Refer to specialist Child Developmental Services, MO/NP or paediatrician for:
  - any parental concerns
  - significant loss of developmental skills
  - lack of response to sound or visual stimuli
  - poor interaction with adults or other children
  - right and left sided differences in strength, movement and tone
  - loose and floppy (low tone) or stiff and tense (high tone) movements
  - failure to meet Developmental milestones, page 90
  - Poor growth (child), page 398
  - any suspicion of developmental delay or disability

Child safety notification

- Refer to Child safety reporting, page 428 if:
  - psychosocial factors during the presentation suggest risk of harm to child
  - substance use during pregnancy is likely to impact on a parent's ability to meet a child's needs

1. What is a developmental delay or disability in children? [1–8]

- Development is influenced from pre-conception by the environment and postnatally by relationships with primary caregivers
- Development describes the child's ability to adapt over time to achieve increasing complexity of function (milestones) across domains including:
  - fine and gross motor skills
  - speech and language
  - cognitive skills
  - social and emotional skills
- Skills develop incrementally within these domains
- Rates of development will vary within a child's age range. See Developmental milestones, page 90
- Developmental delay is a lag in the acquisition of milestones expected at a particular age
- Types of developmental delay include:
  - **Global** – when children have delays in at least two domains
  - **Transient** – due to prolonged illness, hospitalisation or family stress, prematurity or lack of opportunities to learn e.g. a premature baby who shows a delay in sitting or a child whose speech is affected by frequent ear infections, then progresses at a normal rate after intervention
  - **Persistent** (developmental disability) – conditions that cause impairment in physical, learning, language, or behavioural domains. They can:
    - be events that occur before, during or after birth. See Table 1.
    - impact on a child's optimal functional ability over their life. See Table 1.
    - result in complex and pervasive developmental difficulties
- Early detection can minimise long term complications and improve outcomes
- Children will require a variety of supports at critical periods during their lives

2. Diagnosis of developmental delay or disability in a child [2–8]

- Diagnosis is made by regular history and examination Developmental milestones, page 90
- History features include:
  - skills that are not acquired
  - skills that do not progress
  - regression in skills or unusual behaviours
  - medical risk factors e.g. prenatal exposures (e.g. alcohol), prematurity, disability, genetic factors and syndromes, prolonged illnesses, temperament, behaviour, abuse and neglect and stressful life events. See Table 1.
  - family risk factors e.g. parental psychopathology, family dysfunction, domestic violence, poverty, substance use, family structure
  - community risk factors e.g. rural and remote, access to regular healthy food
- Physical examination may reveal birth defects, weakness, poor co-ordination, poor growth, and hearing and vision problems. See Table 1.
- Screening is undertaken using validated tools, such as the 'Red Flag' guide, to

identify developmental delay or disability. See Resource 1.

- A diagnosis will be a stressful time for families. Build a partnership and provide support. See Engaging our patients, page 19

Table 1. Causes and effects of developmental delay or disability [1,2,4,6–8]

Causal factors		
Prenatal	**Chromosomal**	• Trisomy 21 (Down Syndrome) • Fragile X Syndrome • 22q11 deletion (velocardiofacial syndrome)
	Genetic	• Tuberous Sclerosis • Metabolic disorder e.g. phenylketonuria
	Syndromes	• Rare syndromes such as Williams Syndrome, Prader-Willi Syndrome or Cornelia de Lange Syndrome
	Infections	• Rubella virus, Cytomegalovirus
	Drugs and toxins	• Excessive alcohol (FASD) • Inhalants • Medicines
	Major structural anomalies of the brain	
Perinatal	**Low birth weight children**	• Lack of oxygen (hypoxia) • Trauma • Infections • Biochemical abnormalities such as low blood glucose levels
Postnatal	**Head injuries**	• Motor car accidents • Near drowning accidents
	Infections	• Meningitis • Encephalitis
	Poisons	
	Social-emotional	• Exposure to violence, abuse and neglect • Living in a remote location • Children in care • Parental mental and physical health concerns
Effect on ability		
Executive functioning		• Compromised ability to plan, predict, organise, prioritise, sequence, initiate, follow through, set goals, comply with agreements, be on time, and adhere to a schedule
Memory		• Information input, integration, forming associations, retrieval, learning from past experiences • Will repeat mistakes in spite of punishment
Abstract concepts		• Time, maths or money
Judgement		• Difficulty making sound decisions • Difficulty differentiating safety from danger, friend from stranger or fantasy from reality
Information processing		• Difficulty forming links and associations • Unable to apply a learned rule in new setting

Table 1. Causes and effects of developmental delay or disability *(continued)* [2,4,6–8]

Communication and language	• Difficulty comprehending the meaning of language • Difficulty answering questions accurately • Agrees, make things up, or fill in the blanks to appear understood • Talks excessively, but unable to engage in a meaningful conversation • Appears to understand instructions, but does not, and fails to apply them • Disengaged socially • Lack of eye contact
Cognitive pace	• Thinks more slowly • Requires minutes to generate an answer rather than seconds
Perseveration	• Gets stuck on an activity, has difficulty stopping or starting a new one • Reacts strongly to changes in setting, routine or personnel
Maturity	• Functions socially, emotionally and cognitively at a younger level of development than chronological age
Impulsivity	• Acts first and then sees the problem after the fact
Auditory pace	• Language is processed more slowly, requiring more time to comprehend • Processes every third word of normally paced speech

3. Management of a developmental delay or disability in children [1–3,9,10]

- Management involves building a therapeutic partnership with parents to support the child to live a healthy productive life by:
  - supporting their emotional needs so they feel secure and loved
  - providing a safe, engaging environment where they can explore, experiment and develop their skills
  - being available to them when they need help, care or attention
  - dealing consistently with inappropriate behaviour
- Identifying the strengths of the child and parent early assists with goal setting, monitoring development and achieving best outcomes

3.1 Support child and family self-management [1,2,3,8,9]

- Provide resources and support service information. See Resource 3–10.
- Practical social supports may include:
  - therapy interventions
  - community supports
  - services available from education department
  - respite
  - carer allowance financial assistance
- Provide practical strategies to support children. See Table 2.
- Anticipate the long-term impact of developmental delays or disabilities at different ages to help families plan support over time. Discuss:

  - expected challenges at birth, early childhood, school entry, puberty and transition to adulthood
  - a progressive lifelong picture of childhood strengths and difficulties
- See Resource 3. for characteristics and strategies for specific developmental disabilities
- Encourage the child and family to identify barriers to adequate lifestyle modification and medical adherence and create goals to overcome those barriers. See Engaging our patients, page 19

3.2 Social-emotional support [1–3,8,9]

- Great stress can be placed on parents and carers who may be unaware of the needs of children with a developmental delay or disability. See Table 2.
- Assess their Social-emotional wellbeing, page 58

Table 2. Strategies to support a child with a developmental delay or disability [2,3,8,11,12]

Social-emotional development
• Assist the child to separate from the parent e.g. a routine in saying goodbye • Value and acknowledge the child's efforts • Provide opportunities for the child to play in proximity to, and with, others • Expand the child's reciprocal play skills e.g. tickling, peek-a-boo, chase • Encourage independent play • Ask the child to visualise how their behaviour might affect others • Use clear, calm instructions when dealing with problem behaviour • Follow through with consequences for poor behaviour • Ask the child to identify appropriate behaviour • Encourage the child to use language to describe feelings • Provide praise for desirable behaviour
Speech and language development
• Use pictures to reinforce language • Speak slowly, deliberately and directly to the child • Paraphrase what the child has said • Establish alternative communication means for non-verbal children. See Resource 4. • Label objects with words • Model clear speech • Actively listen to the child • Use book reading as a basis for talking, learning and turn taking
Motor development
• Plan physical activities for times when the child has the most energy • Provide simple, fun obstacle courses that the child is capable of completing • Provide opportunities and activities for the child to use handheld tools and objects • Incorporate singing and dancing into many activities • Place objects in the child's hand to hold and feel • Give the child blocks, clay, paper, pencils, crayons, safety scissors and play dough, to manipulate and use (cutting, pasting, drawing and writing) • Take the child outside to run, climb and jump around • Have the child practise buttoning, unbuttoning and zipping clothes, and opening and closing doors and items in their immediate environment • Get the child involved in meal preparation

Table 2. Strategies to support a child with a developmental delay or disability *(continued)* [2,3,8,11,12]

Adaptive behaviour development
• Model and allow the child to practise feeding, dressing and toileting themselves • Break skills into steps (use visual cues if appropriate) • Plan experiences that are relevant to the child's world • Teach how to apply skills to other settings e.g. at the park • Minimise distractions and the possibility for over stimulation • Teach and model personal hygiene habits such as hand washing • Discuss and model rules and practices for playground safety, staying with a group, and safety in a classroom • Teach the child to provide personal identification information when asked • Teach procedures to deal with dangerous situations e.g. in the event of a fire or stranger danger
Cognitive development
• Provide teachers with the child's preferences and interests to facilitate structured education • Allow the child time to complete tasks and practise skills • Demonstrate concepts rather than giving directions verbally • Provide visual information to complement verbal i.e. show as well as tell • Demonstrate how things work • Be consistent with routines • Use age appropriate learning materials • Use short, simple sentences to facilitate understanding • Repeat instructions/directions frequently to check whether further clarification is necessary • Minimise distractions and transitions • Provide a positive learning environment • Avoid overwhelming the child with multiple or complex instructions • Encourage participation in school activities • Use visual discrimination games such as "I spy"

3.3 Exposure to violence, abuse or neglect [1,2,10]

- Rural and remote clinicians should be mindful that:
  - the nature of permanent brain changes affecting child development from exposure to sustained:
    - witnessing or experiencing domestic violence
    - inconsistent parenting due to mental health, drug or alcohol use
    - emotional, sexual or physical abuse or neglect
    - racism, colonisation, sexism, homophobia, displacement or war
  - these children are more likely to experience lifelong:
    - poor growth, oral health, hearing, vision and eating problems
    - bullying, peer assault, harm and further abuse
    - persistent fear (even when removed from harm), hyper-arousal, internalising emotions and diminished ability to function
    - judicial contact, poor lifestyle behaviours (higher rates of diabetes and cardiovascular disease), socioeconomic inequality, compromised productivity and mental health problems
    - emotional and behavioural disturbances and an inability to develop trusting relationships

- Actively engage with local service partners to advance the child's health and welfare e.g. consent, information sharing, court orders, changes of carer or case worker and communication

3.4 Children in out of home care (OOHC) [1,2,10,13]

- Two main factors influence whether these children will enter OOHC:
  - evidence of abuse, neglect or harm and
  - risks to growth and development, including failure to thrive. See Poor growth (child), page 398
- Children living in OOHC often experience:
  - domestic violence, parental substance use, socioeconomic disadvantage, homelessness and parental imprisonment
  - repeated attempts at reunification with birth or extended family
  - family access that may be planned or unplanned
  - placement breakdown
  - multiple placements prior to long-term placements being identified
  - multiple changes in childcare or school
  - changes to culture, language and location
- Assess and address impacts on a child in OOHC:
  - stress and Anxiety disorders, page 197
  - behaviour and ability to cope with change
  - see Resource 1.
- Refer to child health nurse, social worker or psychologist as necessary

3.5 Education [2,3,8,10–12]

- Children with developmental delays or disabilities or those living in OOHC are educationally disadvantaged and are more likely to:
  - be over represented in special education
  - miss school, repeat year levels, be suspended and excluded
  - leave school early and less likely to enrol in tertiary education
  - be older than other children in their grade
  - attend more schools than other children
  - struggle with the stimulating, demanding and complicated classroom environment and homework
- Ensure family are engaged with education services such as early childhood development programs and school guidance officers. See Resource 7.

3.6 Early intervention support services [1–4,8,11,12]

- Refer to multidisciplinary child development services for assessments, interventions and management for delays in multiple developmental domains:
  - speech pathologist
  - occupational therapist
  - physiotherapist
  - psychologist
  - child health nurse
  - paediatrician
  - mental health team
  - social worker
- Assist the parent or carer to access services. See Resources 8–10. Consider:

  - the Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships
  - National Disability Insurance Scheme (NDIS)
  - Children's Health Queensland Hospital and Health Service and Ellen Barron Family Centre
- Consider practical local social supports such as:
  - daycare
  - mums and bubs groups
  - playgroup
  - local community services
- Encourage parents to attend a behaviour or attachment-based parenting program that promotes strategies and skills to deal with challenging child behaviours. See Resource 11.

3.7 Carer support [1–4,10,11,13]

- Caring for a child with a developmental delay or disability can:
  - be time consuming and difficult
  - be resource intensive
  - require intensive care and supervision
  - require high-level health service co-ordination
- Many carers of children with developmental delay or disability are foster carers, grandparents or other kin, rather than biological parents
- Prepare, encourage and empower parents and carers to:
  - engage in service coordination and intervention
  - actively participate in educational interventions
  - navigate the 'system' over time, particularly at key developmental stages
  - understand future outcomes and if any impacts are likely to be ongoing
  - understand the steps that can be taken to optimise outcomes
- Refer to visiting carer support services, social worker and psychologist
- Referral to respite allows parents and carers to have a break and address their own needs. See Resource 5–6

3.8 Monitoring [1–4,9,13]

- Regularly monitor child's physical health, growth and nutrition. See Section 3. Child health checks
- Refer any irregularities to MO/NP or paediatrician who may order further investigations

4. Medicines for a child with a developmental delay or disability [2]

- No medicines are recommended for the broad treatment of developmental delay or disability
- Medicines may be required to help with certain symptom complexes at the discretion of the treating specialist

5. Cycle of care

Cycle of care summary for children with a developmental delay or disability

Action	Dx	Frequency
Height	✓	At every routine child health check. Refer for formal testing if concerns about delay persists
Weight	✓	
Head circumference	✓	
Hearing	✓	
Vision	✓	
Neuro-behavioural assessment and testing	✓	Guided by clinical need. Refer for formal testing at time of school entry if significant concerns
Developmental assessment	✓	PEDS or ASQ undertaken at key milestone times by suitably trained clinician
Patient self management support	✓	Each visit
Social-emotional wellbeing	✓	Each visit
All childhood immunisations	See *Australian Immunisation Handbook* for schedule	
RN/IHW/CHN review	✓	Each visit
MO/NP review	✓	As required
Dietitian	✓	As required
Speech pathologist	✓	As required
Physiotherapist	✓	As required
Occupational therapist	✓	As required
Paediatrician	✓	As required
Psychologist	✓	As required
Social worker	✓	As required

6. References

- All Chronic Conditions Manual references are available at the Office of Rural and Remote Health website

7. Resources

1. Children's Health Queensland Hospital and Health Service provides information for the PEDS screening tool or the Ages and Stages Questionnaires (ASQ) or the Eyberg Child Behavior Inventory (ECBI) or the "Red Flag" Early Intervention Referral Guide for children 0–5 years
2. Do2Learn a resource for individuals with special needs
3. Makaton: alternative communication methods
4. Carers Australia or Queensland
5. Carer Gateway respite information
6. Queensland Government Education Department support for students with disability
7. The Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships
8. National Disability Insurance Scheme (NDIS) and NDIS requirements and application
9. Children's Health Queensland Hospital and Health Service and Ellen Barron Family Centre and
10. Raising Children Network
11. The Positive Parenting Program (PPP) and the Circle of Security (COS) parenting program

Diabetes

High risk groups [1–4]

- Those who score ≥ 12 on the Australian cardiovascular disease risk calculator, page 425
- Aboriginal and Torres Strait Islander, middle eastern, Asian and Māori people
- Those who smoke, are physically inactive, overweight or obese
- Those who collectively have hypertension, dyslipidaemia, central obesity and hyperglycaemia (the Metabolic Syndrome)
- Low birth weight or large for gestational age babies
- Women with a history of gestational diabetes mellitus (GDM)
- Women with a history of polycystic ovary syndrome
- Those with a history of a cardiovascular and cerebrovascular disease
- Psychosocial stress, depression or those on anti-psychotic medicines
- Personal or family history of diabetes or autoimmune conditions

Considerations in pregnancy [5,6]

- Refer early to multidisciplinary team
- Those with one or more risk factors above should be screened for GDM (or undiagnosed Type 2 diabetes) when pregnancy confirmed i.e. at 6–12 weeks then if normal, repeat at 24–28 weeks
- Due to high risk of retinopathy, perform baseline eye exam in 1st trimester. If abnormal repeat in 2nd trimester. If not repeat in 3rd trimester
- BP and urinalysis each visit
- Early and frequent fetal monitoring due to increased risk of miscarriage and congenital malformations. Advise mothers to report reduced fetal movements
- Strive for target HbA1c ≤ 6.5% (48 mmol/mol) without severe hypoglycaemia prior to conception and during pregnancy
- Provide preconception lifestyle behaviour counselling and offer contraception until target HbA1c reached

Urgent referral

- Refer to the *Primary Clinical Care Manual* for:
  - diabetic ketoacidosis (DKA) or a hyperosmolar hyperglycaemic state (HHS)
  - high risk foot complications i.e. infection +/- osteomyelitis, charcot foot or gangrene
  - hypoglycaemia i.e. BGL of < 4.0 mmol/L

1. What is diabetes? [1–4]

- Characterised by elevated blood glucose due to insulin deficiency, damaging blood vessels and nerves, leading to complications such as vision and dental loss, cardiovascular and kidney disease, sexual dysfunction and limb amputation

- Common diabetes types are:
  - **Type 1 diabetes mellitus**
    - due to an autoimmune process leading to total insulin deficiency usually with rapid onset of symptoms requiring lifelong treatment
    - typically considered a disease of children and the young, however can occur at any age e.g. latent autoimmune diabetes in adults (LADA)
  - **Type 2 diabetes mellitus**
    - Four times higher in Aboriginal and Torres Strait Islander populations than non-Indigenous Australians, increases with remoteness
    - characterised by insulin deficiency and insulin resistance. In time, insulin production decreases, contributing to hyperglycaemia
    - the most common type, predominantly seen in adults, but also seen in young people due to genetics or in utero exposure to diabetes
  - **Other causes of impaired insulin metabolism**
    - insulin deficiency due to a disease process affecting the pancreas's function e.g. pancreatitis, pancreatic cancer, cystic fibrosis. Treated with insulin

1.1 Pre-diabetes

- Also known as impaired glucose tolerance or impaired fasting glucose
- Occurs when BGLs are elevated above targets but does not meet diagnostic criteria. See Table 1.
- People with pre-diabetes
  - risk progression to Type 2 diabetes and its complications
  - should actively address Lifestyle modifications, page 18

2. Diagnosis of diabetes [1–4,7]

- Routine scheduled health checks or opportunistic screening identifies people at high risk of diabetes. See Adult health checks, page 140, Child health checks, page 64
- Those who score ≥ 12 (or other high risk category) against the The Australian type 2 diabetes risk assessment tool, page 433 will have a diagnosis confirmed with a blood test. See Table 1.
- Signs and symptoms of Type 1 diabetes are sudden onset of:
  - excessive thirst (polydipsia), hunger (polyphagia), urination (polyuria)
  - unintentional weight loss, abdominal pain or vomiting
  - elevated ketones, rapid breathing, acetone or sweet smelling breath,
- People who develop Type 2 diabetes may be asymptomatic but can present with above and:
  - tiredness and lethargy
  - numbness/tingling in feet or legs
  - blurred vision
  - skin signs e.g. infections, itching, skin tags or dark patches of skin usually in the armpits, neck or groin (acanthrosis nigricans)

Table 1. Standard diagnostic criteria for Type 2 diabetes [1–4,7]

Test	Diabetes unlikely	Pre-diabetes	Diabetes (likely)
Random blood glucose	4.0–7.8 mmol/L	7.9–11.0 mmol/L	≥ 11.1 mmol/L
OR HbA1c	< 6% (42 mmol/mol)	6.0–6.4 % (42–46 mmol/mol)	≥ 6.5% (≥ 48 mmol/mol)
OR fasting blood glucose	< 5.5 mmol/L	5.5–6.9 mmol/L	≥ 7.0 mmol/L
OR oral glucose tolerance test (OGTT) 2 hour result	< 7.8 mmol/L	7.8–11.0 mmol/L	≥ 11.1 mmol/L

If patient is asymptomatic and result is close to normal, confirm diagnosis with a second test

3. Management of diabetes [1–4,7,8]

- The goals of managing diabetes are to improve quality of life and prevent complications or premature death by:
  - Lifestyle modifications, page 18
  - identifying and addressing comorbidities in conjunction with the Australian cardiovascular disease risk calculator, page 425, such as:
    - Dyslipidaemia, page 317
    - Chronic kidney disease, page 242
    - Hypertension, page 345
    - Eyes and vision (child), page 105
    - Eyes and vision (adult), page 168
    - Coronary heart disease, page 264
  - frequent foot screening for peripheral neuropathy and vascular disease
  - maintaining target goals. See Table 2.
- For further principles of clinical management of diabetes in adults see Resource 1.

Table 2. Target goals for management of diabetes [1–4,8,9]

Assessment	Target
In-clinic or self-monitoring of blood glucose levels	• **Type 1:** – 4–6 mmol/L fasting – 4–8 mmol/L two hrs postprandial • **Type 2:** – 4–7 mmol/L fasting – 5–10 mmol/L two hrs postprandial – for young adults 18–30 years – 4–6 mmol/L fasting – 4–8 mmol/L two hrs postprandial • **Type 1 or 2 in elderly or those living alone with comorbidities** – 6–8 mmol/L fasting – 6–12 mmol/L two hrs postprandial

Table 2. Target goals for management of diabetes *(continued)* [1–4,8,9]

HbA1c (without significant hypoglycaemia)	• < 6.5% if planning pregnancy or pregnant • < 6.5% young adults 18–30 years • < 6.5–7% adult • < 8.5% for elderly or living with comorbidities
Total cholesterol (TC)	• < 4.0 mmol/L
LDL-C	• < 2.0 mmol/L or < 1.8 mmol/L if established CVD
HDL-C	• > 1.0 mmol/L
Non-HDL-C	• < 2.5 mmol/L
Triglycerides (TG)	• < 2.0 mmol/L
Blood pressure (BP)	• < 130/80
Body mass index (BMI)	• 5–10% loss for people overweight or obese with Type 2 diabetes • People with BMI > 40 or BMI 35–39 with comorbidities, pharmacological or surgical options should be considered
Urinary albumin excretion (ACR)	• < 3.5 mg/mmol: women • < 2.5 mg/mmol: men • < 20 mg/L (spot collection) • See Chronic kidney disease, page 242
eGFR	• > 60mL/min
Cigarette consumption	• See Smoking cessation, page 48
Alcohol intake	• See Alcohol reduction, page 24
Physical activity	• See Physical activity and sleep, page 34

3.1 Supporting patient self-management [1–4,8,10]

- Provide patient education and resources including:
  - adjustment to diabetes diagnosis
  - knowledge, understanding, attitudes and beliefs of diabetes
  - the benefits of reducing body weight
  - improving foot care behaviours
  - BGL self-monitoring and improving glycaemic control as measured by HbA1c
  - reducing risk of cardiovascular events and microvascular complications, such as retinopathy and end stage nephropathy by Lifestyle modifications, page 18
  - see Resources 2–5
- Refer to diabetes educator and to SMoCC, a phone service that supports patients manage their condition. See Resource 6.
- Encourage the patient to identify barriers to adequate lifestyle modification and medical adherence and create goals to overcome those barriers. See Engaging our patients, page 19

3.2 Social-emotional support [1–4,8,10]

- Regularly assess a patients level of distress from living with diabetes and refer as necessary. See Resource 5.
- See Social-emotional wellbeing, page 58

3.3 Sick day management plan [1,4,11]

- Sick days are periods of acute illness lasting 1–14 days that require changes to usual diabetes self-management practices
- Develop a written sick day management plan at diagnosis and review or update at each visit. The plan empowers patients to:
  - recognise the signs and symptoms of illness
  - understand the impact illness can have on blood glucose and ketone levels
  - understand self-management interventions to minimise these impacts
  - recognise when, who and how to seek medical assistance and when to present to emergency
- For sick day management plans (including during pregnancy) see Resource 7.

3.4 Diet modification and weight control [1–4,8,10,12]

- Diabetes magnifies the effects of dyslipidaemia increasing acute MI risk
- Encourage patient to maintain a healthy BMI. See
  - Diet and nutrition, page 29
  - Overweight and obesity (child), page 372 and Overweight and obesity (adult), page 366
  - Dyslipidaemia, page 317
- Consider a persons food security as inconsistent intake can result in hypoglycaemia with some sulphonyuareas and insulins
- Refer to a dietitian

3.5 Alcohol reduction [1–4,8–10]

- Drinking alcohol decreases blood glucose and masks symptoms of hypoglycaemia
- Patients should avoid binge drinking and eat something when drinking alcohol
- See Alcohol reduction, page 24

3.6 Physical activity [1–4,8,10,12]

- Improves glucose tolerance (by increasing insulin sensitivity), blood pressure and lipid levels
- Refer to exercise physiologist
- See Physical activity and sleep, page 34

3.7 Infections [1–4,8,10]

- Poorly controlled diabetes:
  - causes damage to blood vessels leading to poor wound healing and increases risk of infection
  - reduces white cell ability to combat infection
  - increases risk of chest, urinary tract, skin, dental, genital and kidney infections
- Patients to be alert to any wounds; to cover and seek treatment immediately

- Patients with cloudy, bloody or painful urination to seek immediate treatment
- Vaccinate against common respiratory diseases. See the *Australian Immunisation Handbook* for recommendations

3.8 Neuropathy [1–4,8,10,12]

- Peripheral nerve damage (neuropathy) results in pins-and-needles, pain or burning sensation in the feet, legs and fingers, which can lead to loss of sensation increasing the risk of ulceration and amputation
- Central neuropathy results in positional hypotension, stomach paralysis and faecal or urinary incontinence, which reduces quality of life and life expectancy
- Refer early to the MO/NP/podiatrist or diabetes educator for evaluation

3.9 Foot care [1–4,8,10]

- Perform a foot check every visit for cuts, blisters, ulcers, calluses or foot deformity
- Treat any identified problems the same day
- Apply moisturising cream to dry/tough/thickened skin (not between the toes)
- Patient education:
  - inspect feet daily for redness, calloused skin, blisters and between the toes for infections
  - use palm of hand to check sole of feet for stones, glass, bindi's, etc
  - soak feet in warm water and use a pumice stone to remove old dry skin to prevent the heels from cracking
  - wear well-fitting footwear with clean soft socks inside and outside the house
  - prior to putting on shoes check inside for stones etc.
  - trim toenails frequently. If unable then seek help
- Refer to the *Primary Clinical Care Manual* for an active or complicated foot wound

3.10 Teeth and gums [1–4,8,10]

- Poorly controlled diabetes increases the risk of dry mouth, dental abscess, loose teeth and tooth decay
- Refer for dental review every 6 months
- See Dental caries and periodontal disease, page 280

3.11 Eyes and vision [1–4,8,10]

- Poorly controlled diabetes increases the risk of eye sight damage including:
  - **cataract** (cloudiness of the lens): results in blurred vision, glare intolerance, poor night vision and difficulty interpreting colours. Surgery is required if lifestyle affected
  - **Retinopathy**: results from damage to small retinal blood vessels causing permanent visual distortion
  - **Maculopathy** (macula degeneration): results in central vision loss
- Refer all newly diagnosed patients to an ophthalmologist or optometrist
- Correction glasses are prescribed once BGLs are stabilised. See Resource 8.
- Screen Eyes and vision (child), page 105 or Eyes and vision (adult), page 168 at routine health checks

3.12 Sexual function [4]

- Poorly controlled diabetes causes:
  - damage to the autonomic nervous system responsible for sexual responses
  - deterioration in blood vessel and nerve function and sensation
- Can lead to penile erection difficulties or vaginal dryness, atrophy and infections
- See Sexual and reproductive health, page 39

3.13 Pre-diabetes [1–4,10]

- Manage as above but with intensive lifestyle modification aiming for 5–10% reduction in body weight if overweight or obese
- Perform annual HbA1c or OGTT. Reduce frequency if no deterioration in results and patient's lifestyle behaviours have improved

4. Medicines for diabetes [1–4,12–14]

- Reinforce the importance of taking medicines to assist maintaining BGLs
- Medicines are reviewed and adjusted in conjunction with the MO/NP/pharmacist
- See Figure 1. Management algorithm for blood glucose control in Type 2 diabetes

4.1 Hypoglycaemics [1–4,12–14]

- Type 1 diabetes is managed with insulin adjusted for meals and activity. Refer to diabetes educator or MO/NP if patient is unable to self-adjust
- Oral medicines are usually continued when using insulins as:
  - early cessation before BGL targets are achieved can result in hyperglycaemia
  - ongoing use can reduce weight gain
  - allows for smaller insulin doses and reduces hypoglycaemia or hyperglycaemia
- Closely monitor for hypoglycaemia, especially with sulphonylureas and insulins
- See Table 3. Medicines for diabetes and Table 4. Insulins
- To calculate medicine dosage in CKD see Chronic kidney disease, page 242

4.2 Insulin self-management education

- Rotation of injection sites
- Store insulin in refrigerator
- Dispose of sharps. Provide and renew sharps container as required
- Register with the National Diabetes Services Scheme (NDSS) to access needles, BGL monitors and other resources. See Resource 3.
- Check BGL is > 5 mmol/L before driving. Notify road traffic authority of fitness to drive
- Routine BGL monitoring to understand the impacts of daily routines, medicines, diet, exercise etc.
- What to do if hypoglycaemic i.e. BGL < 4.0 mmol/L, shaking, sweating, racing pulse, confused, irritable, hungry or tired
- Provide Resource 2.

Figure 1. Management algorithm for blood glucose control in Type 2 diabetes [12–14]

Regularly address and review Lifestyle modifications, page 18
Weight loss of ≥ 10% will likely allow a reduction or cessation of glucose lowering medicine
If HbA1c > 7% (53 mmol/mol) move down the algorithm

Monotherapy: Usually **metformin** unless contraindicated or not tolerated

Metformin	SU	Insulin	Or less commonly use acarbose, DPP-4i, SGLT2i, GLP-1RA, or TZD

If HbA1c target not achieved in 3 months check interventions #

Dual therapy: Add an oral or injectable agent
Choice should be guided by presence or high risk of, cardiovascular disease, heart failure, chronic kidney disease, hypoglycaemia risk, obesity, side effects or contraindications

SGLT2i	DPP-4i	GLP-1RA	SU	Insulin	Or less commonly use acarbose or TZD

If HbA1c target not achieved in 3 months check interventions #

Multiple therapies: Include additional oral therapy **or** GLP-1RA **or** insulin
Choice guided by clinical considerations above. Consider stopping previous medicine that has not reduced HbA1c by ≥ 0.5% after 3 months, **unless indicated for non-glycaemic benefits**

SGLT2i	DPP-4i	GLP-1RA	SU	Insulin	Or less commonly use acarbose or TZD

If HbA1c target not achieved in 3 months check current interventions #

To intensify treatment to meet glycaemic targets consider specialist endocrinology consultation

- If on metformin+SU+DPP-4i, consider adding SGLT2i, or switching DPP-4i to a GLP-1RA, or an SGLT2i
- If on metformin+DPP-4i+SGLT2i consider adding SU or adding insulin
- If on GLP-1RA consider adding basal or premixed/coformulated insulin (#)
- If on basal insulin, consider adding SGLT2i or GLP-1RA# or bolus insulin with meals, or change to premixed/coformulated insulin
- Consider stopping medicine if HbA1c not reduced by ≥ 0.5% after 3 months unless indicated for non-glycaemic benefits

For patients with high risk/established CVD. Studies suggest improved all cause and CV death and non-fatal MI when used with usual care

For patients with high risk/established HF and HF hospitalisation. Studies suggest improved outcomes when used with usual care

For patients with CKD as defined by albuminuria and/or eGFR >30 ml/min/1.73m^2. Studies suggest reductions in major renal endpoints when used with usual care

Usual therapeutic strategy (order does not denote any specific preference); usual refers to commonly available, evidence based, cost effective therapy

Alternate approach (order not meant to denote any specific preference)

Less commonly used approach

Table 3. Medicines in diabetes [1,7–9,12,15–17]

Preferred medicines

Metformin

- Usually first line therapy unless contraindicated
- Measure eGFR at initiation, fasting BGL at 2 weeks, and HbA1c and eGFR at 3 months
- Caution in the elderly
- If changing from conventional tablets to XR, start with the patient's usual daily dose
- If > 2 g daily is required, use conventional tablets
- XR tablets are preferred given with evening meal
- Gastrointestinal intolerance is common and may be dose limiting. Give with food to minimise upset

Metformin

- Initially 500 mg PO 1–3 tds, increasing to response (to a max. 3 g)
  - eGFR 30–60 mL/min then 25–50% of dose (to a max. 1 g daily)
  - eGFR 15–29 mL/min then 25% of dose (to a max. 500 mg daily). Contraindicated if GFR < 30 mL/min (seek specialist advice)
  - eGFR < 10 mL/min then avoid

Metformin XR

- Initially 500 mg PO once a day (to a max. 2 g)

Dipeptidyl peptidase-4 inhibitors (DPP-4i)

- Fasting and post prandial glucose
- HbA1c 3 mthly
- Hypoglycaemia risk when combined with sulphonylureas
- These medicines are also available in combination with metformin

Alogliptin*

- eGFR > 50 mL/min then 25 mg PO daily
- eGFR 30–50 mL/min then 12.5 mg PO daily
- eGFR < 30 mL/min then 6.25 mg PO daily

Linagliptin*

- 5 mg PO once a day

Sitagliptin

- eGFR > 50 mL/min then 100 mg PO daily
- eGFR 30–45 mL/min then 50 mg PO daily
- eGFR < 30 mL/min then 25 mg PO daily

Glucagon-like peptide-1 receptor agonists (GLP-1RA)

- Fasting and post prandial glucose
- HbA1c 3 mthly
- Not effective in combination with DPP-4i; both incretin mimetics

Dulaglutide

- 1.5 mg subcut once wkly

Semaglutide

- if eGFR ≥ 30 mL/min then 0.25 mg subcut, wkly for 4 weeks, increasing to 0.5 mg wkly. After another 4 weeks, increase dose further if required (to max. 1 mg wkly)

Liraglutide*

- if eGFR ≥ 15 mL/min then 0.6 mg subcut, daily for 1 week, increasing to 1.2 mg daily. After another 1 week, increase dose further if required (to max. 1.8 mg daily)

Tirzepatide*

- 2.5 mg subcut, wkly for 4 weeks, increasing to 5 mg/0.5 ml wkly. If target not met increase in 2.5 mg increments every 4 weeks (to max. 15 mg wkly)

***Check LAM and PBS for medicine indications and restrictions**

Table 3. Medicines in diabetes *(continued)* [11,7–9,12,15–17]

Sodium-glucose co-transporter 2 inhibitors (SGLT2i)

- eGFR at initiation and yearly thereafter
- eGFR 6 mthly when 60–90 mL/min
- eGFR when starting other medicines that reduce renal function
- AST and ALT at baseline
- UEC at baseline and 6 mthly thereafter
- Associated with weight loss and urogenital infections
- Cease at least 48 hrs prior to fasting for surgery/procedures due to risk of euglycaemic DKA
- Co-prescribing in heart failure may allow for dosing at a lower eGFR
- Not recommended if volume depleted or taking diuretics
- Stop (temporarily) if patient unwell (e.g. vomiting, diarrhoea, fever), or not eating or drinking normally, to prevent risk of euglycaemic ketoacidosis

Dapagliflozin

- eGFR ≥ 45 mL/min then 10 mg PO daily
- eGFR 25–45mL/min 10mg daily
- eGFR < 25 mL/min avoid

Empagliflozin

- eGFR > 30 mL/min then 10 mg PO daily initially (to a max. 25 mg)

Poorly tolerated or potential for adverse reactions

Sulphonylureas (SU)

- Fasting plasma glucose 2 weeks post initiation
- HbA1c at 3 months
- May cause weight gain
- May cause hypoglycaemia in the elderly and the presence of renal impairment

Gliclazide IR

- 40 mg PO once a day or bd (to a max. 320 mg daily in divided doses)
- eGFR < 50 mL/min use with caution and monitor closely

Gliclazide MR

- 30 mg PO mane (to a max. 120 mg daily)
- eGFR < 50 mL/min use with caution and monitor closely

Glimepiride

- 1 mg PO daily before or with first meal (to a max. 4 mg daily)

Acarbose

- At initiation perform postprandial glucose, HbA1c at 3 months and hepatic enzymes for hepatotoxicity
- Flatulence, diarrhoea, abdominal pain and distension are common
- Rarely used. Seek expert advice to help the patient weigh up the potential treatment harms and benefits

Thiazolidinediones (TZDs)

- International diabetes management guidelines include thiazolidinediones as an option but favour other choices because of safety concerns
- Seek expert advice to help the patient weigh up the potential treatment harms and benefits

***Check LAM and PBS for medicine indications and restrictions**

4.3 Guide to insulin treatment [1,2,4]

- **Step 1.** Ensure Lifestyle modifications, page 18 and comorbidities are managed
- **Step 2.** Decide the time and type of insulin. Usually daily basal insulin (glargine) before meal or premixed insulin twice daily before meals. See Table 4.
- **Step 3.** Identify target range. See Table 2.
- **Step 4.** Decide the dose, 'start low and go slow'
  - single basal dose, morning or evening, usually 10 units (0.2 units/kg)
  - less in an elderly, active or thin patient and more in overweight, inactive patient
- **Step 4.** Adjust doses:
  - titrate once or twice weekly at 1–2 units each time to achieve identified target

Table 4. Insulins [1,9,16]

Insulin Type	Insulin name	Activity			Comments
		Onset	Peak	Duration	
Long acting (analogues)	Detemir (Levemir)	90 mins	6–8 hrs	16 to 24 hrs	• Subcut • Provides a constant basal insulin level • Do not mix with other insulins; inject separately
	Glargine (Optisulin)	1–2 hrs	None	24 hrs	
	Glargine (Toujeo)	1–6 hrs	None	24–36 hrs	
Ultra long acting combination	Ryzodeg 70/30	15 mins	1 hour	> 24 hrs	• Subcut once a day or bd, immediately before largest daily carbohydrate meal(s)
Long acting premixed (analogues)	NovoMix 30 Humalog Mix 25 Humalog Mix 50	15 mins	1 hour	16–18 hrs	• Subcut once a day or bd • Give immediately before meal(s)
Ultra short acting (analogues)	NovoRapid Humalog Apidra	15 mins	1 hour	4–5 hrs	• Subcut immediately before food
Ultra short acting (analogues)	Faster-acting insulin aspart (Fiasp)	5–15 mins	0.5–1.5 hrs	3–5 hrs	• Subcut at start of meal, or up to 20 mins after
Short acting (human)	Actrapid	30 mins	2–3 hrs	6–8 hrs	• Subcut within 30 mins before meal

***Check LAM and PBS for medicine indications and restrictions**

5. Cycle of care

Cycle of care summary for diabetes

Action	Dx	Frequency
Height	✓	Regularly until stops growing
BP	✓	12 mthly
Weight	✓	3 mthly
Waist circumference	✓	3 mthly
BMI	✓	12 mthly
BGL	✓	At each visit
Lifestyle modifications	✓	3 mthly
Social-emotional wellbeing	✓	12 mthly
Foot/amputation check	✓	Every visit or more frequently if high risk i.e. current wound or ulcer history
Visual acuity	✓	12 mthly
FBC	✓	12 mthly
Liver function test (LFT)	✓	12 mthly
UEC	✓	12 mthly
eGFR	✓	12 mthly; 3 mthly if abnormal
HbA1c	✓	6 mthly; more frequent if target not met
Fasting lipids	✓	12 mthly if stable on hypolipidaemics
Urinalysis	✓	12 mthly
ACR	✓	12 mthly; 3 mthly if abnormal
ECG	✓	12 mthly
Influenza, pneumococcal and COVID-19 vaccines	✓	Recommended. See the *Australian Immunisation Handbook* for schedule
HW/RN review	✓	3 mthly plus prn foot checks
MO/NP review	✓	12 mthly; wkly for active wound
Medicine review	✓	3 mthly or as per MO/NP recommendation
Diabetes educator	✓	6 mthly
Dietitian	✓	12 mthly
Dentist	✓	6 mthly
High risk foot service team	✓	PRN i.e. if non-healing foot wound or if PVD or neuropathy or history of previous ulcer/amputation
Podiatrist	✓	12 mthly; 2 mthly if previous ulcer/amputation
Physician/ Endocrinologist	✓	On referral by MO/NP plus annually for those with a drivers licence on hypoglycaemic agents
Ophthalmologist	✓	Retinal examination 12 mthly

Cycle of care summary for pre-diabetes

Action	Dx	Frequency
Height	✓	Regularly until stops growing
BP	✓	12 mthly
Weight	✓	Measure every 3 mths and encourage 5–10% weight loss
Waist circumference	✓	
BMI	✓	
Fasting lipids	✓	12 mthly if stable on hypolipidaemics
Random BGL	✓	3 mthly
Fasting BGL	✓	12 mthly
OGTT or HbA1c	✓	12 mthly
Dietitian	✓	3 mthly
ACVDR calculator	✓	12 mthly
Lifestyle modifications	✓	Each visit
MO/NP/RN review	✓	12 mthly

6. References

- All Chronic Conditions Manual references are available on the Office of Rural and Remote Health website

7. Resources

1. Clinical Guiding Principles for Sick Day Management of Adults with Type 1 and Type 2 Diabetes
2. Diabetes Australia Resources and National Diabetes Services Scheme information for people with diabetes
3. National diabetes services scheme (NDSS)
4. Statewide Diabetes Clinical Network resources
5. The Diabetes Distress Screening Scale
6. Self-Management of Chronic Conditions (SMoCC) service and The health support service "My health for life"
7. National Diabetes Services Scheme Sick day management plans
8. Diabetes Australia Keep Sight to make it easier for people with diabetes to get their eyes checked

Dyslipidaemia

High-risk groups [1–4]

- Those overweight, obese or with diets high in saturated fat
- Aboriginal and Torres Strait Islander people > 18 years of age
- Those with a history of CHD, diabetes, CKD or familial dyslipidaemia
- Those with SBP ≥ 180 mmHg or DBP ≥ 110 mmHg
- Sedentary lifestyle
- Smokers and those who consume alcohol above recommended limits
- Women with Polycystic Ovarian Syndrome (PCOS)

Considerations in pregnancy [2]

- Encourage lifestyle modification for pregnant women
- Discuss medicine use with women contemplating pregnancy already on statins
- Pharmacotherapy should be avoided outside of specialist care

Referral

- Refer patients with comorbidities and resistant high cholesterol levels (triglyceride level > 8 mmol/L or total cholesterol > 9 mmol/L) despite treatment to:
  - a specialist related to their comorbidity and
  - a dietitian

1. What is dyslipidaemia? [3]

- Abnormalities of lipids (fats) or lipoproteins in the blood
- Ingested fats are processed by the liver and returned to the bloodstream as cholesterol
- Cholesterol is produced for many metabolic processes including:
  - building cell membranes
  - making hormones e.g. oestrogen and testosterone
  - the production of vitamin D and bile acids
- High blood cholesterol can build up fatty deposits in blood vessel walls
- Arteries can narrow and block completely, leading to heart disease or stroke
- Lipoproteins carry the following cholesterols in the blood:
  - high density lipoprotein cholesterol (HDL-C) is considered beneficial
  - low density lipoprotein cholesterol (LDL-C) is considered harmful
  - very low density lipoprotein cholesterol (VLDL-C) carry triglycerides (TG) in the bloodstream

1.1 Primary dyslipidaemia

- Genetic or hereditary high cholesterol i.e. familial dyslipidaemia

1.2 Secondary dyslipidaemia

- Caused by lifestyle factors, chronic conditions or medicines. See Table 1.

Table 1. Common causes of secondary dyslipidaemia [2]

Cause	Effect on lipid profile
Hypothyroidism, nephrotic syndrome, cholestasis, anorexia nervosa	• ↑ LDL-C
Type 2 diabetes, obesity, renal impairment, smoking, drug therapy	• ↑ TG • ↓ HDL-C
Diet high in saturated fat	• ↑ LDL-C
Alcohol misuse, oestrogen use	• ↑ TG
Sedentary lifestyle	• ↑ LDL-C • ↓ HDL-C
ß-blockers	• ↑ TC • ↓ HDL-C
Diuretics	• ↑ TC • ↓ TG

2. Diagnosis of dyslipidaemia [2–6]

- Dyslipidaemia is identified by a venous lipid result outside of target values. See Table 2.

3. Management of dyslipidaemia

- Management goals are to reduce or eliminate the risk of Coronary heart disease, page 264 or stroke by:
  - Lifestyle modifications, page 18
  - addressing the cause. See Table 1.
  - meeting target goals. See Table 2.
  - identifying and addressing comorbidities in relation to estimate CVD risk using the Australian cardiovascular disease risk calculator, page 425:
    - Heart failure, page 325
    - Chronic kidney disease, page 242
    - Coronary heart disease, page 264
    - Diabetes, page 304
    - Hypertension, page 345
    - Overweight and obesity (adult), page 366
    - Overweight and obesity (child), page 372
    - Stroke and transient ischaemic attack, page 413

Table 2. Target goals to manage dyslipidaemia [1,2,4,7]

Test	Target	
TC	• < 4.0 mmol/L*	
TG	• < 2.0 mmol/L*	
HDL-C	• ≥ 1.0 mmol/L*	
LDL-C	• < 2.0 mmol/L for primary prevention* • < 1.8 mmol/L for secondary prevention with coronary stent* and post stroke/TIA	
Non-HDL-cholesterol (N-HDL-C)	• < 2.5 mmol/L	
TC:HDL-C	• ≤ 4.5 mmol/L	
Blood pressure (BP)	• < 130/80	
Alcohol intake	• Zero or ≤ 2 standard drinks per day	
Physical activity	• At least 30 minutes of moderate physical activity on most/all days of the week (total ≥ 150 minutes/week)	
Body mass index (kg/m²)	**Waist circumference (cm)**	
	Women	**Men**
• Normal weight 18.5–24.9	< 80	< 90
• Overweight 25–29.9	< 90	< 100
• Obese 30–34.9	< 105	< 110
• Morbidly obese ≥ 35	< 115	< 125

* For patients on lipid lowering therapy

Each 1.0 mmol/L reduction in LDL-C is associated to a 22% reduction in cardiovascular disease mortality and morbidity

3.1 Support patient self-management [3,4,6]

- Discuss:
  - the positive effects of Lifestyle modifications, page 18 on lipid levels with particular regard to Diet and nutrition, page 29. See Table 3–4.
  - dyslipidaemia and its association with heart disease, stroke and pancreatitis
- Provide dyslipidaemia resources. See Resources 1.
- Encourage the patient to identify barriers to adequate lifestyle modification and medical adherence and create goals to overcome those barriers. See Engaging our patients, page 19

3.2 Social-emotional support

- See Social-emotional wellbeing, page 58

Table 3. Lifestyle modification effect on lipid levels[1–3]

Lifestyle intervention	To reduce TC and LDL-C levels	To reduce TG levels	To increase HDL-C levels
Reduce excessive body weight	♥	♥ ♥ ♥	♥ ♥
Increase physical activity	♥	♥ ♥	♥ ♥ ♥
Reduce dietary trans fat	♥ ♥ ♥		♥ ♥ ♥
Reduce intake of sugar products		♥ ♥ ♥	♥
Reduce dietary saturated fat	♥ ♥ ♥		
Consume foods high in phytosterol	♥ ♥ ♥		
Alcohol in moderation only		♥ ♥ ♥	♥ ♥
Reduce total amount of dietary carbohydrates		♥ ♥	
Consume polyunsaturated fat		♥ ♥	
Increase dietary fibre	♥ ♥		
Reduce dietary cholesterol	♥ ♥		
Reduce dietary carbohydrates and replace with unsaturated fat			♥ ♥
Smoking cessation			♥
Consume soy protein products	♥		
Replace saturated fat with mono- or polyunsaturated fat		♥	

♥ ♥ ♥ **Great effect** ♥ ♥ **Good effect** ♥ **Adequate effect**

3.3 Diet and nutrition [1–4,6]

- Overweight and obesity (adult), page 366 contributes to dyslipidaemia by lowering HDL
- Provide the patient with nutrition and diet related resources. See Resource 3.
- Frequent consumption of:
  - saturated fats **raise** LDL-C levels e.g. takeaway and processed foods
  - food and drinks with added sugar including alcohol **raises** TG levels
  - polyunsaturated fats **reduce** LDL-C levels and cardiovascular risk e.g. oily fish, unsalted nuts, polyunsaturated margarines and oils
  - vegetable oils found in legumes, avocados, plain nuts, fruit, vegetables, whole grains and cereals, **reduces** blood cholesterol levels
- To lower lipid levels commence diet modification:
  - for 6 weeks for **low-risk** groups
  - if lipid levels remain high, commence medicines
  - start medicine concurrently for **high-risk** groups
- See Tables 3 and 4.
- See Diet and nutrition, page 29

3.4 Physical activity

- Encourage any form of Physical activity and sleep, page 34 that encourages the benefits of exercise and interaction e.g. walking groups, ball sports, mens shed

Table 4. Dietary options to lower TC and LDL-C [2–4]

Types	Examples
Cereals	• Whole grains, oats
Vegetables	• Raw, cooked, frozen or tinned
Legumes	• Beans, lentils, including soy and soy protein
Fruit	• Fresh, frozen or tinned
Eggs, meat and fish	• Lean meat, oily fish, skinless chicken and egg white
Dairy foods	• Skimmed milk and yoghurt
Cooking methods	• Grilling, boiling, steaming, oven bake and microwave

4. Medicines for dyslipidaemia [1,3,6]

- Commence and regularly review lipid lowering therapy according to estimated risk using the Australian cardiovascular disease risk calculator, page 425 to meet target lipid levels (Table 2.). If estimated 5 year CVD risk is:
  - high > 10 % then start immediately
  - intermediate 5–10 % and 3–6 months of inadequate lifestyle modification then start therapy
  - Low < 5 % then therapy usually not required

4.1 General lipid lowering therapy [3,6]

- Before commencing drug therapy:
  - address lifestyle behaviour causes of raised blood lipids
  - consider risks and benefits in treating those > 74 years with comorbidities
  - be alert to medicine interactions:
    - ß-blockers increase TC and decreases HDL
    - diuretics increase TC and TG
    - **caution:** only cease these medicines if they are not indicated e.g. ß-blockers for hypertension alone
- Use statins as first line therapy
  - if LDL-C levels not reduced with maximum tolerated dose or intolerant of statins, add ezetimibe

4.2 For raised triglycerides [3,5]

- Consider treatment with one of the following:
  - fenofibrate (especially if HDL is below target)
  - fish oil

Table 5. Recommended medicines and combinations for dyslipidaemia [3,6]

Statin	
• **Rosuvastatin** 5–40 mg daily (40 mg cautiously). Caution in renal impairment • **Atorvastatin** 10–80 mg daily • **Simvastatin** 10–40 mg daily • **Pravastatin** 20–80 mg daily (80 mg cautiously)	• **First line treatment** • Reduces LDL-C up to 60% • Increases HDL-C by 5–10% • In order of decreasing potency • Adjust dose if renally impaired
Ezetimibe	
• When statin intolerant or lipid targets not reached with statin alone	
• **Ezetimibe** 10 mg daily	• **Second line treatment** • Reduces LDL-C by 15–22% • When intolerant of statin or as add-on when target not reached • Reduces LDL-C by a further 20–25% when used with statin
Bile acid binding resins	
• **Colestyramine** 4–8 g daily initially increasing to a max. 24 g in divided doses	• **Third line treatment** • Reduces LDL-C by 18–25% • GI adverse effects may limit maximum dose
Statin + bile acid binding resins	
• As above	• Reduces LDL-C by a further 10–20%
Fibrates (with statin)	
• When statin intolerant or lipid targets not reached with statin alone	
• **Fenofibrate** 145 mg daily – eGFR 20–60 mL/min 48 mg daily (to a max. 96 mg daily) – eGFR < 20 mL/min avoid	• Reduce dose in patients with renal impairment • Reduces TG levels • Modest HDL-C raising effects • Reduces LDL by > 25% • Preferred agent when used in combination
• **Gemfibrozil** 600 mg bd	• Contraindicated with simvastatin • Reduces TG levels • Modest HDL-C raising effects
PCSK9 inhibitor	
• May be considered after specialist consultation in patients at very-high risk not achieving target lipd levels on maximum tolerated dose of statin and ezetimibe	

5. Cycle of care

Cycle of care summary for dyslipidaemia

Action	Dx	Frequency
BMI	✓	12 mthly
Weight	✓	6 mthly
Waist circumference	✓	6 mthly
Pulse rate	✓	6 mthly
Blood pressure	✓	6 mthly
UEC and LFTs	✓	12 mthly. If LFTs increase and remain > 3 x ULN with optimal lifestyle modification then cease lipid therapy
Lipid profile	✓	• 8 weeks after starting or adjusting treatment • Annually once target levels reached. Inform patient
ALT	✓	• Before statin therapy • Routine control of ALT thereafter is not recommended unless on fibrate or evolving liver disease symptoms • If < 3 x ULN continue therapy and recheck in 4–6 wks • If ≥ 3 x ULN stop or reduce statin and recheck in 4–6 wks
Creatinine kinase (CK)	✓	• Before statin therapy. If > 4 x ULN do not start therapy • Routine monitoring not required • Check immediately if patient develops: – myalgia. Be alert to myopathy in high-risk patients i.e. the elderly, polypharmacy, liver or renal disease or athletes – muscle pain and weakness: – If > 10 x ULN; cease treatment; check ACR, eGFR; monitor every 2 wks – If < 10 x ULN and: – **no** symptoms; continue therapy; monitor every 2 wks – **with** symptoms; cease treatment; monitor and consider rechallenge with a lower statin dose – If < 4 x ULN and: – **no** symptoms; continue therapy – **with** symptoms; monitor symptoms and CK regularly – symptoms persist; cease treatment; check in 6 wks; re-evaluate indication for treatment
HbA1c	✓	• If at high-risk of developing Diabetes, page 304 and on high-dose statin treatment
Pt self-management	✓	Each visit
Lifestyle behaviours	✓	Each visit
Diet and nutrition	✓	Once a week for 6 wks
Social-emotional wellbeing	✓	Each visit
Influenza, pneumococcal and COVID-19 vaccines	Recommended. See the *Australian Immunisation Handbook* for schedule	
Medicine review	✓	Each visit
Dentist	✓	12 mthly
HW/RN review	✓	6 mthly
MO/NP review	✓	6 mthly
Dietitian review	✓	12 mthly
Specialist review		If resistant high cholesterol levels persist despite treatment

6. References

- All Chronic Conditions Manual references are available on the Office of Rural and Remote Health website

7. Resources

1. Heart Foundation Dietary Fat and Heart Healthy Eating information
2. Queensland Health nutrition and diet related resources
3. The Australian Dietary Guidelines

Heart failure

High risk groups [1–3]

- Diabetes, hypertension, CHD and dyslipidaemia
- Smokers and those who drink alcohol above recommended limits
- Sedentary lifestyle or obesity and overweight

Considerations in pregnancy [1–3]

- Heart failure (HF) increases maternal and neonatal morbidity and mortality risk
- HF may worsen as medicine is altered and fluid volume changes
- Discuss ceasing HF medicines in patients with known cardiomyopathy with specialist

Urgent referral [1–3]

- Refer to the *Primary Clinical Care Manual* for increased or sudden onset of breathlessness or weight gain ≥ 2 kg in 3 days
- Refer to the cardiologist for:
  - advanced HF or HFrEF not responding to optimal management therapies
  - HF with valvular heart disease, amyloidosis, CHD or cancer

1. What is HF? [1–5]

- The hearts inability to provide adequate circulation, commonly caused by CHD, hypertension and diabetes
- Most commonly characterised by myocardial dysfunction which impairs the left ventricle to fill with or eject blood, particularly during physical activity
- Manifests in congestive signs and symptoms during physical exertion or at rest as condition progresses. See Tables 1–2.

Table 1. Signs and symptoms of HF [3]

More typical symptoms	More typical signs
• Breathlessness (usually on exertion) • shortness of breath while lying flat or during sleep • Fatigue	• Elevated jugular venous pressure • Hepatojugular reflux • Third heart sound • Laterally displaced apex beat
Less typical symptoms	**Less specific signs**
• Nocturnal cough • Wheeze • Abdominal bloating • Anorexia • Confusion (elderly) • Depression • Palpitations • Dizziness • Fainting • Shortness of breath when leaning forward	• Weight gain > 2 kg/wk • Weight loss (advanced HF) • Peripheral oedema (ankle, sacrum) • Pulmonary crackles • Pleural effusions • Cardiac murmur • Tachycardia • Tachypnoea • Cheyne–Stokes respiration • Ascites

- HF is divided into 3 phenotypes based on left ventricular ejection fraction (LVEF):
  - **reduced** ejection fraction (HFrEF) ≤ 40% LVEF: the weakened ability of the left ventricle to contract and eject blood
  - **mildly reduced** ejection fraction (HFmrEF) 41–49% LVEF: the mildly weakened ability of the left ventricle to contract and eject blood
  - **preserved** ejection fraction (HFpEF) ≥ 50% LVEF: the left ventricle does not adequately fill due to structural or functional cardiac abnormalities resulting in poor stroke volume
- The distinction between the phenotypes is relevant to the therapeutic approach
- The simplest way to grade HF is based on severity of symptoms using the New York Heart Association (NYHA) Functional Classification system

Table 2. NYHA grading of symptoms in HF [1–3]

NYHA grading	Clinical features
Class I	• No limitations of ordinary physical activity
Class II	• Slight limitation of ordinary physical activity • No symptoms at rest
Class III	• Marked limitation of ordinary physical activity • No symptoms at rest
Class IV	• Symptoms on any physical activity or at rest

Ordinary physical activity is a patient's subjective opinion of their ability to exert themselves during activities of daily living

2. Diagnosis of HF [1–3]

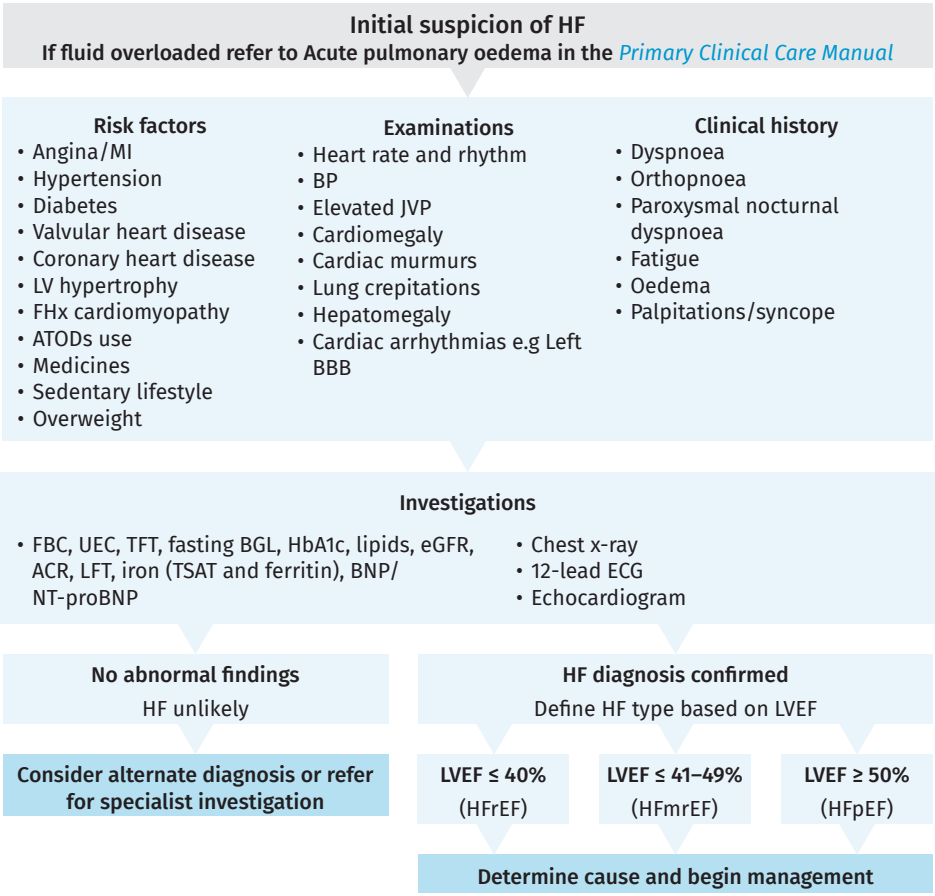
- Requires presence of:
  - signs and symptoms. See Table 1.
  - objective evidence of structural abnormality or cardiac dysfunction. See Flowchart 1.
    - ECG for AF, Q waves, LV hypertrophy and widened QRS complexes
    - echocardiogram to assess LVEF
    - venous B-type natriuretic peptide (BNP or NT-proBNP) non-Medicare rebateable i.e. BNP > 35 pg/mL and NT-proBNP > 125 pg/mL
    - chest x-ray to exclude alternative causes of breathlessness (e.g. COPD) or to support evidence of HF (pulmonary congestion or cardiomegaly)
    - routine blood tests for comorbidities
- Response to treatment helps determine diagnosis, prognosis and management
- Consider early Advance Care Planning, page 141 when diagnosis is made (class III–IV) so the patient can plan and retain control over their care and personal life as the condition progresses

3. Management of HF [1–3]

- Management goals are to reduce mortality, prevent recurrent hospitalisations and improve functional ability and quality of life by:
  - addressing Lifestyle modifications, page 18
  - identifying and addressing the following comorbidities in relation to Australian

cardiovascular disease risk calculator, page 425
  - Diabetes, page 304
  - Hypertension, page 345
  - Coronary heart disease, page 264
  - Dyslipidaemia, page 317
- optimal use of medicines

Flowchart 1. Diagnosing HF [1,2]



3.1 Support patient self-management [1–3]

- Effective HF self-care results in better quality of life, lower readmission rates, and reduced mortality
- Provide Resources 1–5 and discuss:
  - HF and its progression and prognosis, including death
  - fluid monitoring and dietary sodium intake
  - signs of worsening HF e.g. weight gain, breathlessness, lower extremity swelling

  - the need to seek timely access to health services
  - the need for patient involvement in management decisions
- Provide home visits to support transition from discharge to the community to decrease mortality and re-hospitalisation
- Encourage the patient to identify barriers to adequate lifestyle modification and medical adherence and create goals to overcome those barriers. See Engaging our patients, page 19

3.2 Social-emotional support [1–3]

- See Social-emotional wellbeing, page 58

3.3 Fluid management [1–3]

- Discuss symptoms of fluid overload including dyspnoea, oedema and bloating. See Resource 6.
- Determine the patient's **ideal weight** with no signs of overload after treatment with a diuretic (i.e. 'dry' or 'euvolaemic' weight)
- Encourage the patient to keep a daily weight and fluid intake diary targeting their ideal weight and develop an action plan (Resources 7–8.) with the following information:
  - measure weight first thing in the morning post void i.e. "wake, wee, weigh, write"
  - a steady weight gain over a number of days indicates an episode of fluid retention; limit fluids to 1.5–2 litres/day to relieve symptoms
  - weight loss below the ideal weight indicates dehydration
  - high dietary sodium intake contributes to fluid overload and hospitalisation. Limit sodium intake if overloaded and refer to a dietitian. See Resource 8.
  - avoid alcohol. It contributes to fluid intake, increases body weight, alters metabolism of some HF medicines and impairs cardiac function
  - caffeine increases HR and BP, contributes to fluid intake and alters electrolyte levels if taking diuretics. Limit to 1–2 cups/day
  - seek medical attention for a weight gain > 2 kg in 3 days. The MO/NP may consider a change in diuretic dose

3.4 Physical activity [1–3]

- Regular Physical activity and sleep, page 34 for patients with HF leads to overall:
  - reduction in mortality and hospitalisation
  - improvement of physical functioning and quality of life
  - improvement of symptoms and neurohormonal abnormalities

3.5 Cardiac rehabilitation [1–3,5]

- Cardiac rehabilitation:
  - is detailed in a discharge summary from the referring hospital
  - reduces hospitalisation by up to 56%
  - accelerates recovery
  - motivates lifestyle modification e.g. physical activity levels
  - improves adherence to medicines, social-emotional wellbeing and clinical management targets
- When stable, refer and encourage all patients to attend a cardiac rehabilitation program especially Aboriginal and Torres Strait Islander people who:

  - are at higher risk of heart disease and repeat heart events
  - have specific cultural needs
  - participate in cardiac rehabilitation at lower rates than non-Indigenous people
- An exercise program should be instigated by a physiotherapist or exercise physiologist for those with limited function according to clinical features:
  - NYHA class I or II symptoms–progress gradually to at least 30 minutes of physical activity (continuously or in 10 minute bouts) up to moderate intensity on most, if not all days of the week
  - NYHA class III symptoms–short intervals of low intensity activity, with frequent rest days
  - NYHA class IV symptoms–requires gentle mobilisation as symptoms allow
  - see Table 1.
- See the National Cardiac Rehabilitation Program Directory for cardiac rehabilitation services in your region. See Resource 9.

3.6 Diet and nutrition [1–3]

- Weight loss reduces HF symptoms and HF progression, and improves wellbeing
- Anorexia and unintentional weight loss are common consequences in NYHA class III or IV. **Intentional weight loss is not recommended in this class**
- Frequent small meals can reduce the risk of angina, dizziness, dyspnoea or bloating in severe HF
- Refer to dietitian for:
  - constipation; common in HF due to gastrointestinal hypoperfusion
  - malnutrition, wasting (cardiac cachexia) and anaemia contributing to debilitating weakness, fatigue and poor prognosis
  - fluid overload requiring sodium restriction
- See Diet and nutrition, page 29

3.7 Smoking cessation [1]

- Smoking cessation, page 48 decreases cardiovascular risks and HF progression

3.8 Obstructive sleep apnoea (OSA) [1–3]

- Obesity and OSA are common in patients with HF
- Accepted treatments for OSA in HF are:
  - weight loss in those with a BMI > 30. See Overweight and obesity (adult), page 366
  - Smoking cessation, page 48
  - Alcohol reduction, page 24
  - CPAP therapy
- Assess a patient's daytime sleepiness and OSA risk by using a validated tool. If they score highly refer to a sleep specialist. See Resource 10.

3.9 Palliative care [1,2]

- Perform Advance Care Planning, page 141 early and provide Palliative care, page 376 to patients with NYHA class III (advanced) or IV symptoms not responding to interventions and death likely within 12 months
- Assess impact of HF on activities of daily living, physical activity, employment, finances, family routines and emotional wellbeing

4. Medicines for HF

4.1 Practice points [1–4,6]

- Support patients to continue taking medicines to avoid exacerbations
- A pharmacist/MO/NP will review a patient on multiple or over the counter medicines
- All patients whose LVEF improves after optimal medicine doses should continue regimen to prevent relapse of HF and LV dysfunction, even if asymptomatic
- The following medicines have no benefit or are harmful in HFrEF:
  - diltiazem and verapamil
  - vitamins, nutritional supplements, and hormonal therapy
  - some antiarrhythmics
  - thiazolidinediones
  - NSAIDs
  - saxagliptin and alogliptin in those with type 2 diabetes or high CVD risk
- Titration of medicines decreases mortality and hospitalisation when patient is:
  - diagnosed with HFrEF
  - stable and euvolaemic
  - supported by a specialist heart failure nurse/MO/NP
  - see Resource 11. for a medicine HF titration plan
- See Flowchart 2. for pharmacological management of HF

Flowchart 2. Pharmacological management of HF [1–4]

Identify and actively manage risk factors

Comorbidities
- Diabetes, page 304
- Hypertension, page 345
- Coronary heart disease, page 264
- Atrial fibrillation, page 226
- Dyslipidaemia, page 317

Lifestyle modification
- Physical activity
- Limited dietary sodium
- Manage fluid intake
- Weight loss
- Smoking cessation
- Sleep apnoea
- Alcohol reduction

Exacerbations
- Avoid medicines that worsen HF
- Address adherence
- Manage cardiac ischaemia

Manage congestion with diuretics

HFrEF: LVEF ≤ 40%	HFmrEF: LVEF 41–49%	HFpEF: LVEF ≥ 50%
Commence ARNI or ACEi or ARB* (ARNI preferred)	**Consider commencing** an **ACEi, ARNI or ARB***	**Aggressively address** risk factors above
Add beta blocker if euvolaemic	**Consider commencing** a **beta blocker**	**Consider** SGLT2 inhibitor
Add MRA if: • K^+ < 5 mmol/L • eGFR > 30 mL/min/1.73m^2	**Consider commencing** an **MRA**	
Add SGLT2 inhibitor	**Consider SGLT2 inhibitor**	
Switch ACE/ARB or ARNI if no improvement at 3 months	**Consider switching ACE/ARB or ARNI**	
Up-titrate medicines doses to max. tolerated		
Repeat echocardiogram in 3 to 6 months		
If HFrEF with LVEF ≤ 40% persists refer to specialist		

*** ARNI** requires a 36 hour washout period after **ARB** or **ACEi** use

* **ARB** as a replacement for **ARNI** or **ACEi** if contraindicated or not tolerated

Table 3. Medicines for comorbidities in HF [1–4]

Hypertension

- Most prevalent modifiable risk factor in two thirds of all HF patients
- Avoid diltiazem, verapamil, and moxonidine in patients with HFrEF
- ACEi, ARBs, ARNIs, some beta blockers, and MRAs all have blood pressure lowering effects, decreasing mortality and hospitalisation in those with HFrEF
- Optimally treated HFrEF is rarely associated with Hypertension, page 345

Coronary heart disease and angina

- Coronary heart disease, page 264 is present in up to 50% of all HF patients, leading to increased functional limitation and risk of coronary events
- For patients with HFrEF:
  - target maximally tolerated dose of beta blocker (unless contraindicated) and
  - ivabradine should be prescribed if HR is ≥ 70 bpm and LVEF ≤ 35%

Atrial fibrillation (AF)

- All patients with Atrial fibrillation, page 226 and HF (in particular HFrEF) should receive long term anticoagulation unless contraindicated. See CHA2DS2-VA, page 435
- Digoxin may be useful to treat patients with HFrEF and AF with rapid ventricular rate where other medicines cannot be pursued

Diabetes

- Metformin is safe at all stages of HF with preserved or stable moderately reduced renal function (eGFR > 30 mL/min)
- SGLT2i (e.g. empagliflozin, dapagliflozin) recommended in HFrEF in addition to optimal doses of all other HF medicines regardless of diabetes status
- Not recommended in patients with Diabetes, page 304 and symptomatic HF:
  - thiazolidinediones (glitazones)
  - saxagliptin and alogliptin (DPP-4)

Chronic kidney disease (CKD)

- Present in up to 60% of patients
- Improvement in HF (reduction in renal venous hypertension and improvement in stroke volume) may improve renal function
- Potassium binders can decrease the risk of recurrent hyperkalaemia in HF
- See Chronic kidney disease, page 242

Hyponatraemia

- Present in ≈ 20% HF patients and a predictor of recurrent hospitalisations and mortality
- Two processes can result in hyponatremia requiring different therapeutic approaches:
  - volume overload with dilutional hyponatremia from congestion requiring fluid restriction and loop diuretics
  - hypovolemic hyponatremia from excessive use of natriuretics. Reconsider the need for diuretics

Table 4. Medicines for HF [1–4,6,7]

Angiotensin converting enzyme inhibitors (ACEi)

- **Do not use with ARB or ARNI**
- First line agent for HFrEF
- Side effects include dry cough, hypotension, impaired renal function, hyperkalaemia, rarely angioedema (stop immediately). Initial asymptomatic hypotension or a rise in creatinine or K+ can occur. Monitor BP, UE, eGFR
- Reduce high dose diuretics 24–48 hrs before starting ACEi

Ramipril start at 2.5 mg PO bd (to a max. 5 mg bd) consider lower starting dose if hypo/normotensive

Enalapril 2.5 mg PO daily (to max. 20 mg daily)

Lisinopril 2.5 mg PO daily (to max. 40 mg daily)

Perindopril arginine (or equivalent erbumine dose) start at 2.5 mg PO daily (to a max. 10 mg daily)

Angiotensin II receptor blockers (ARB)

- For ACEi or ARNI intolerant patients. **Do not use with ACEi or ARNI**
- All else as per ACEi above

***Candesartan** 4 mg PO daily (to max. 32 mg daily)

***Valsartan** 40 mg PO bd (to max. 160 mg bd)

Irbesartan 75 mg PO daily (to a max. 300mg daily)

Telmisartan 40 mg PO daily (to a max. 80mg daily)

Beta blockers

- Start low, go slow. Double dose every 2–4 weeks if stable
- Ensure sitting systolic BP > 85 mm/Hg before starting
- Begin only when the patient is clinically stable
- Monitor BP and HR

Carvedilol start at 3.125 mg PO bd (< 85 kg to a max. 25 mg bd; > 85 kg to a max. 50 mg bd)

Metoprolol MR start at 23.75 mg PO daily (to a max. 190 mg daily)

Bisoprolol start at 1.25 mg PO daily (to a max. 10 mg daily)

***Nebivolol** > 70 years age (limited data for < 70 years age) 1.25 mg PO daily. If tolerated, double dose every 1–2 weeks (to a max. 10 mg daily)

Mineralocorticoid receptor antagonists (MRA)

- **Life threatening hyperkalemia if used with ACEi or ARB** in patient with renal impairment
- For patients with sitting systolic BP > 85 mmHg
- Avoid in patients with stage 4–5 CKD or K+ > 5 mmol/L
- Monitor BP, UE, eGFR during initiation and up titration according to 5. Cycle of care

Spironolactone 25 mg PO daily (to a max. 50 mg daily after 8 weeks)

Angiotensin-receptor neprilysin inhibitor (ARNI)

- **Do not use with ARB or ACEi**
- Replace ACEi with an ARNI after a 36-hour washout period, in ambulatory patients with HFrEF, who remain symptomatic despite optimal doses of all other HF medicines, adequate BP and an eGFR > 30 mL/min/1.73m^2
- Ensure patient not on ARB monotherapy prior to commencing

Sacubitril with valsartan start at 24/26 mg PO bd (doubling dose every 2–4 weeks to a max. 97/103 mg bd)

***See LAM and PBS for medicine indications and restrictions**

Table 4. Medicines for HF *(continued)* [1–4,6,7]

Sodium-glucose co-transporter 2 inhibitors (SGLT2i)

- In addition to optimal doses of all other HF medicines regardless of diabetes status:
  - SGLT2i is **recommended** with HFrEF
  - **consider** SGLT2i with HFmrEF and HFpEF
- Stop (temporarily) if patient unwell (e.g. vomiting, diarrhoea, fever), or not eating or drinking normally, to prevent risk of euglycaemic ketoacidosis

- **Dapaglilozin** 10 mg PO once a day
- **Empagliflozin** 10 mg PO once a day

Diuretics

- First line treatment of congestion to maintain euvolaemia
- Monitor Wt, BP, UEC according to 5. Cycle of care
- Avoid close to bed time to avoid sleep disruption

Furosemide 20–40 mg PO once a day or bd (to a max. 1 g in divided daily dose)

Bumetanide 0.5–1 mg PO once a day or bd (to a max. 4 g bd)

Digoxin

- Consider for HFrEF with ongoing symptoms despite optimal doses of all other HF medicines
- Monitor levels according to 5. Cycle of care
- Therapeutic range is 0.5–0.8 microgs/L in HF. Levels > 1.2 microgs/L are toxic
- Not recommended in advanced renal failure

Digoxin according to age, body weight and CrCl

- CrCl 30–60 mL/min then 62.5–250 microgs PO daily
- Avoid in CrCl < 30 mL/min. Consult specialist

Ivabradine

- For HFrEF with LVEF ≤ 35% if in sinus rhythm and HR ≥ 70 bpm at rest despite optimal doses of all other HF medicines
- Up-titrate beta-blocker to maximum tolerated doses before considering ivabradine

Ivabradine 5 mg PO bd. Adjust dose after 2–4 weeks according to heart rate. Therapeutic range 2.5–7.5 mg PO bd

Hydralazine + isosorbide dinitrate combination

- Consider in patients with HFrEF intolerant to ACEi/ARNI or Aboriginal and Torres Strait Islander or African-American people

Hydralazine 25 mg PO tds (to a max. 50–75 mg tds)

Isosorbide mononitrate SR 60mg daily (to max. 120mg daily)

***See LAM and PBS for medicine indications and restrictions**

5. Cycle of care

Cycle of care summary for HF

Action	Dx	Review frequency
Height	✓	Once only
BMI	✓	6 mthly
Weight	✓	Daily for 2 wks then as clinically required
Waist circumference	✓	3 mthly
Heart rate and rhythm	✓	Each visit
Blood pressure	✓	Each visit
Urinalysis	✓	12 mthly
Fasting blood glucose	✓	12 mthly
Chest x-ray	✓	At diagnosis and as clinically indicated
Thyroid function	✓	12 mthly
ECG	✓	Annually for QRS prolongation, conduction changes and AF
UEC and FBC	✓	1 wk after starting or changing medicine. If significant fluid loss occurs check the next day. Otherwise 6 mthly
Iron studies (ferritin, TSAT)	✓	6 mthly
eGFR	✓	6 mthly
Digoxin level	✓	If on high doses, elderly, female or renally impaired; 2 wks after starting or changing dose then 6 mthly
ECG	✓	12 mthly
Social-emotional wellbeing	✓	Each visit
Lifestyle modification	✓	Each visit
Self management education	✓	Each visit
Self-weight and fluid monitoring	✓	Daily
Fluid management	✓	Each visit
Physiotherapist, exercise physiologist	✓	For cardiac rehabilitation, exercise program or home assessment for supports
Influenza, pneumococcal and COVID-19 vaccines	Recommended. See the *Australian Immunisation Handbook* for schedule	
Dietitian	✓	3 mthly
Medicine review	✓	2 wks, mthly for 3 months then 6 mthly Whenever there is a significant change to condition or medicine regime, refer for home medicine review
Dentist	✓	12 mthly
MO/NP review	✓	3 - 6 mthly
RN/IHW review	✓	3 mthly
Cardiologist	✓	As required
Palliation support		As required
Assess falls risk	✓	As condition alters

6. References

- All Chronic Conditions Manual references are available on the Office of Rural and Remote Health website

7. Resources

1. National Heart Foundation Heart Failure resources and Queensland Heart Failure Services
2. Heart Support Australia resources
3. Heart Foundation support
4. Heartonline education and toolkits
5. Understanding Heart Failure: A Practical Guide for all Australians (Information sheet) and Understanding Heart Failure: A Practical Guide for all Australians
6. Information for fluid intake
7. Living with Heart Failure diary
8. Reducing salt and nutrition with Heart Failure
9. The National Cardiac Rehabilitation Program Directory and Queensland Heart Failure Services referrals and location
10. The Epworth Sleepiness Scale and STOP-Bang questionnaire
11. Heart failure medication optimisation plan

Hepatitis B

High risk groups [1,2]

- Aboriginal and Torres Strait Islander people
- People born in Central America, Africa, Eastern Europe, Russia, Middle East, South East Asia, the Indian subcontinent or China (CALD back grounds)
- Children born to mothers who have hepatitis B (HBV)
- Partners or household and intimate contacts of people with acute or chronic hepatitis B (CHB) infection
- Injectable drug users
- People who had tattoos or body piercings performed in unsterile conditions
- People in, or previously in, custodial settings
- People with HIV or hepatitis C
- Patients undergoing dialysis, chemotherapy or immunosuppressive therapy
- Sex workers or men who have sex with men
- Health professionals who perform exposure-prone procedures
- People with liver disease or elevated alanine transaminase (ALT) / alpha fetoprotein (AFP) of unknown aetiology

Considerations in pregnancy [2,3,4,5]

- Screen all women for HBV as part of routine antenatal care. See the *Primary Clinical Care Manual*
- Treat HBV early in pregnancy in discussion with a specialist
- Perform HBeAg and HBV DNA to determine risk of transmission to infant
- Infants born to women who are HBsAg positive must be:
  - given hepatitis B immunoglobulin (HBIG) and first dose of monovalent hepatitis B vaccine within 12 hours of birth
  - tested for HBsAg and Anti-HBs at 9–12 months of age; > 3 months after completing primary hep B vaccinations
  - followed-up by a paediatrician

Referral

- Refer to MO/NP and seek specialist advice for those with:
  - severe exacerbation (or acute HBV)
  - co-infection with HIV, HCV or HDV
  - pregnant
  - immunosuppressed
  - hepatocellular carcinoma (HCC)
  - previous treatment with a different hepatitis B medication
  - cirrhosis is present or is likely

1. What is hepatitis B? [1,2,5]

- A highly infectious virus that damages the liver leading to:
  - abdominal pain
  - dark urine
  - fever
  - joint pain
  - loss of appetite
  - nausea and vomiting
  - weakness and fatigue
  - jaundice of eyes and skin
  - CHB (often asymptomatic)
  - HCC
- The virus is transmitted by blood and body fluids from:
  - mother to infant at birth
  - sexual contact
  - contaminated intravenous injecting equipment
  - close household contact e.g. sharing toothbrushes or razors
  - person to person transmission by contact with open sores or wounds
- CHB is highest amongst Aboriginal and Torres Strait Islander people (11%) and those from CALD backgrounds (61%), mostly acquired at birth or in early childhood
- Acquiring HBV as a neonate or child carries a higher risk of developing CHB (90% and 30% respectively), than if acquired as an adult (< 10%)
- Antiretroviral treatment is available
- Acute HBV is less commonly seen than CHB infections

2. Diagnosis of hepatitis B [2,3,5]

- See Flowchart 1.

2.1 Acute hepatitis B

- Confirmed by testing for anti-HBc IgM if suspected through recent risk or presentation

2.2 Chronic hepatitis B (CHB) [2]

- Is identified by venous blood serology for HBsAg, anti-HBs and anti-HBc (triple test) to determine:
  - susceptibility
  - immunity through vaccination or past infection
  - current infection (acute or chronic)
- All high risk groups (above) should be considered for testing or if there is suspicion of an acute HBV infection through recent risk or presentation
- If CHB confirmed see Flowchart 2. to determine phase of virus and treatment

Flowchart 1. Determining hepatitis B status [2,3]

To determine hepatitis status order following tests:
- HBsAg
- anti-HBs
- anti-HBc
- anti-HBc IgM (if acute HBV suspected)

- HBsAg positive
- anti-HBc positive
- anti-HBc IgM positive
- anti-HBs negative

Acute infection
- Assess and monitor severity. Manage as per CHB
- Exclude CHB in 6 months
- Refer to specialist as required

- HBsAg negative
- anti-HBs negative
- anti-HBc negative

Susceptible to infection
- Vaccinate. See *Australian Immunisation Handbook* for details

- HBsAg negative
- anti-HBs positive
- anti-HBc positive

Immune due to past resolved infection
No further action required

- HBsAg negative
- anti-HBs positive
- anti-HBc negative

Immune due to vaccination
No further action required

- HBsAg positive
- anti-HBs negative
- anti-HBc positive

Chronic HBV infection (CHB)
See Flowchart 2.

- HBsAg negative
- anti-HBs negative
- anti-HBc positive

Waning immunity
- Consider HBV DNA testing
- Consider repeat serology if recent infection
- Consider single vaccination and retest anti-HBs in 1 month

Flowchart 2. Assessment of CHB to determine pharmacological treatment [2–5]

Baseline screening to assess phase of CHB
- HBeAg and anti-HBe, HBV DNA, FBC, LFT, AFP, ALT and liver U/S
- **Also test for** HAV, HCV, HDV and HIV for co-infections
- Assess for liver fibrosis i.e. signs of cirrhosis and fibroscan

HBeAg-**positive** chronic **infection (immune tolerance)**	HBeAg-**positive** chronic **hepatitis (immune clearance)**	HBeAg-**negative** chronic **infection (immune control)**	HBeAg-**negative** chronic **hepatitis (immune escape)**
• HBV DNA high* • ALT normal # • HBeAg positive	• HBV DNA high* • ALT elevated # • HBeAg positive	• HBV DNA low • ALT normal # • HBeAg negative • anti-HBeAg positive	• HBV DNA high* • ALT elevated # • HBeAg negative • anti-HBeAg positive
Antiviral treatment not required	Risk of progression to cirrhosis and HCC **Consult specialist and consider antiviral treatment**	**Antiviral treatment not required**	Risk of progression to cirrhosis and HCC **Consult specialist and consider antiviral treatment**

Manage comorbid conditions, encourage lifestyle modifications and monitor as per Cycle of care

- *HBV DNA level is considered high if:
  – > 2,000 IU/ml (104 copies/ml) in people who are hepBeAg -ve or
  – > 20,000 IU/ml (105 copies/ml) in people who are hepBeAg +ve
- # elevated ALT is > 19 IU/L women and > 30 IU/L men and a review fails to identify other causes of liver dysfunction (medicines, fatty liver, alcohol)
- Patients with CHB being considered for immunosuppressive treatment or with symptoms of chronic liver disease require specialist review

3. Management of hepatitis B [2,4,5]

- Managing acute HBV is the same as CHB, except patients are monitored to see if the virus clears, or virus is acquired (10% of adults)
- The goals of managing people living with hepatitis B infection is to improve quality of life and survival by:
  - being adequately informed and counselled
  - linking to timely care and treatment
  - preventing ongoing transmission
  - regularly monitoring serology
  - reducing risk of progression to cirrhosis or HCC
  - identifying and addressing comorbidities:
    - Overweight and obesity (adult), page 366
    - Diabetes, page 304

- Hypertension, page 345
- Dyslipidaemia, page 317

3.1 Support patient self-management [1,3]

- Discuss HBV and:
  - how it progresses
  - how adherence to treatment can improve liver function
  - provide support service details and material. See Resource 1.
- Avoiding alcohol and kava use. See Alcohol reduction, page 24
- Advocate safe Sexual and reproductive health, page 39 and harm minimisation for injecting drug users to avoid HIV or hepatitis C co-infection
- Encourage the patient to identify barriers to adequate lifestyle modification and medical adherence and create goals to overcome those barriers. See Engaging our patients, page 19

3.2 Social-emotional support

- See Social-emotional wellbeing, page 58

3.3 Alcohol and tobacco use [5]

- Heavy alcohol consumption, smoking tobacco and HBsAg positivity are independently associated with increased risk of mortality from HCC
- Alcohol can cause rapid liver disease progression and reduced HBV clearance
- Those with HBV should cease drinking alcohol. See Alcohol reduction, page 24
- Smoking can cause alterations to antiviral immunity and enhanced viral replication leading to advanced hepatic disease states
- Smoking cessation, page 48 can normalise liver enzymes

3.4 Reduce the risk of developing complications [1]

- People with active HBV can be effectively treated with antiviral agents to reduce the risk of long term liver damage. See 4. Medicines
- Provide ongoing monitoring as per 5. Cycle of care
- Vaccinate for hepatitis A and other vaccine preventable diseases

3.5 Minimise risk of spreading the virus [1–5]

- Test regular sexual partners and close family and household members for HBV and offer vaccination if there is:
  - no evidence of having received 3 doses of HBV vaccine **and**
  - no evidence of prior infection
- Use condoms to protect sexual contacts. See Sexual and reproductive health, page 39
- Avoid sharing toothbrushes or razors and cover wounds or cuts
- Clean up spilt blood with gloves and bleach

3.6 Liver cancer (HCC) surveillance [4–6]

- Up to 25% of untreated patients with CHB will die as a result of cirrhosis or HCC
- Assess the patient for HCC surveillance eligibility if they:
  - have cirrhosis **or**

  - are at increased risk of HCC without cirrhosis:
    - Aboriginal and Torres Strait Islander > 50 years
    - Māori and Pacific Islander men > 40 years or women > 50 years
    - Asian men > 40 years or women > 50 years
    - Sub-Saharan African > 20 years
    - observed HBsAg loss i.e. at least two consecutive negative HBsAg results and at least one negative HBsAg result ≥1 week after treatment discontinuation
    - coinfected with hepatitis D
    - a family history of HCC (first-degree relative)
  - **and** have been actively modifying their risk factors and adhering to treatment:
    - smoking cessation
    - alcohol cessation
    - weight loss
    - diabetes management
    - antiviral therapy
  - **and** understand surveillance involves 6 monthly ultrasounds, AFP blood tests and may include liver biopsies
- Refer to specialist if the patient is eligible for HCC surveillance

3.7 Monitoring

- Monitor CHB serology as per 5. Cycle of care while managing comorbid conditions
- Refer patient to MO/NP if monitoring detects:
  - evidence of chronic liver disease
  - suspicion of immunosuppression
  - pregnancy
  - < 16 years of age
  - possible HCC

4. Medicines for hepatitis B [4,5]

- Antivirals are prescribed by a specialist in those with:
  - immune clearance. See Flowchart 2.
  - immune escape. See Flowchart 2.
  - cirrhosis and any detectable HBV DNA, regardless of ALT levels
- Entecavir or tenofovir are the antivirals of choice
- Interferon-based treatment is contraindicated in decompensated cirrhosis
- Pregnant women with high viral load (> 200,000 or 5.3 log10 IU/mL) should be offered tenofovir from the 28th week of pregnancy to reduce the risk of perinatal transmission of hepatitis B
- Adherence to antivirals is crucial to avoid the risk of a liver flare-up
- Consider ceasing oral antiviral therapy in those without cirrhosis following HBeAg seroconversion or sustained HBsAg loss. Continue to monitor

Table 1. Medicines for chronic hepatitis B [5,6]

Entecavir and tenofovir

- Advantages: ease of administration, well tolerated and high genetic barrier to resistance
- Disadvantages: potentially lifelong therapy required and risk of HBV flare when stopped
- Tenofovir can cause reduction in bone mineral density, rarely renal impairment, including Fanconi syndrome

- **Entecavir** 0.5 mg PO, daily **OR**
- **Tenofovir disoproxil fumarate** 300 mg PO, daily **OR**
- **Tenofovir disoproxil maleate** 300 mg PO, daily **OR**
- **Tenofovir disoproxil phosphate** 291 mg PO, daily

Peginterferon alfa-2a (interferon)

- Advantages: defined 48 week duration, no risk of resistance and active against hepatitis D co-infected patients
- Disadvantages: wkly SC injections, significant adverse effects than oral antivirals, poor response rates, can trigger an acute hepatitis flare and not recommended with cirrhosis or in pregnancy
- Adverse effects include influenza-like symptoms, anorexia, psychiatric disorders (e.g. depression, suicidal ideation), fatigue, weight loss, thyroid dysfunction, bone marrow suppression or trigger autoimmune disease

- **Peginterferon alfa-2a** 180 microgs SC once wkly for 48 weeks

5. Cycle of care

Table 1. Cycle of care summary for CHB

Action	See Flowchart 2.		
	HBeAg-positive chronic infection **(immune tolerance)**	HBeAg-negative chronic infection **(immune control)**	HBeAg-positive chronic hepatitis **OR** HBeAg-negative chronic hepatitis **(immune clearance, immune escape)**
Baseline observations	Dx	Dx	Dx
Lifestyle modification	Dx and at each encounter		
Hep B vaccination	Check immune status of sexual and household contacts and offer		
Hep A, C, D and HIV serology	Dx to check for co-infection. Vaccinate if susceptible to hep A and discuss transmission and prevention of BBVs		
LFT, ALT	6 mthly	6 mthly	3 mthly for 12/12 then 6 mthly
HBV DNA	12 mthly	12 mthly	3 mthly for 12/12 then 6 mthly
HBeAg and anti-HBe	6 mthly	-	6–12 mthly if HBeAg positive at baseline
HBsAg and anti-HBs	-	-	12 mthly if HBV DNA undetectable
Fibroscan or liver u/s	12 mthly	12 mthly	6 mthly
Serum phosphate and eGFR if on tenofovir disoproxil fumarate (TDF)	-	-	3 mthly for 12/12 then 6 mthly
FBC, INR	-	-	3 mthly for 12/12 then 6 mthly if cirrhotic
HCC surveillance	As per specialist advice. See 3.6 Liver cancer (HCC) surveillance		
Influenza, pneumococcal and COVID-19 vaccines	Recommended. See the *Australian Immunisation Handbook* for schedule		
MO/NP review	Dx and 12 mthly	Dx and 3 mthly	Dx and 3 mthly
Specialist review	As required		

6. References

- All Chronic Conditions Manual references are available on the Office of Rural and Remote Health website

7. Resources

1. Hepatitis B resources are available from ASHM

Hypertension

High risk groups [1–3]

- Aboriginal and Torres Strait Islander people
- Sedentary behaviours, overweight or obesity
- Low socioeconomic and ethnic minority groups
- Mental health comorbidities
- Elevated triglycerides, fibrinogen, apolipoprotein B, or high-sensitivity C-reactive protein
- Elevated fasting glucose but do not meet diabetes diagnosis criteria
- A family history of early cardiovascular disease (immediate relative < 55 yo for men and < 65 y for women)

Considerations in pregnancy [4]

- Refer those with systolic blood pressure (SBP) ≥ 140 mmHg and/or diastolic BP (DBP) ≥ 90 mmHg to MO/NP for maternal investigations and fetal assessment
- See Queensland Maternity and Neonatal Clinical Guideline: Hypertensive disorders of pregnancy for further guidance. See Resource 1.

Urgent referral [1]

- Refer to the *Primary Clinical Care Manual* for:
  - BP ≥ 180/110 mmHg
  - BP ≥ 170/110 mmHg in pregnancy

1. What is hypertension? [1–3]

- A SBP ≥ 140 mmHg and/or a DBP ≥ 90 mmHg
- A persons BP varies according to age, gender and the presence of risk factors
- There are two types of hypertension:
  - **primary hypertension:** attributed to lifestyle behaviours, age and genetics
  - **secondary hypertension:** attributed to potentially reversible causes e.g. medicines, pregnancy, sleep apnoea, kidney disease, endocrine disorders
- Elevated BP alters the function and structure of the circulatory system, damaging organs particularly the brain, heart, kidneys and the eyes
- People rarely know they have hypertension until their BP is checked

2. Diagnosis of hypertension [1–3]

- Hypertension is based on multiple BP measurements taken on separate occasions, one or more weeks apart, or sooner if BP is ≥ 180/110 mmHg with evidence of CVD
- See Special considerations (child), page 135 or Clinical measurements (adult), page 153 to take a BP
- Hypertension can be confirmed with ambulatory or home monitoring and is supported by a thorough medical history, physical examination and laboratory investigations to identify comorbidities and CVD risk factors
- Patients with hypertension are often asymptomatic, however specific symptoms can suggest **secondary hypertension** including:

  - muscle weakness or cramps
  - arrhythmias or palpitations
  - pulmonary oedema
  - sweating or frequent headaches
  - snoring or daytime sleepiness
- BP should be checked:
  - annually for Aboriginal and Torres Strait Islander people > 18 years
  - 2nd yearly for non-Aboriginal and Torres Strait Islander people > 18 years
  - for all children > 10 years of age with a BMI > 85th centile for age and gender

3. Management of hypertension [1–3]

- The goals of managing hypertension are to reduce cardiovascular risk profile and prevent end organ disease by:
  - supporting patient to address Lifestyle modifications, page 18
  - maintaining medicine regimens
  - identifying and addressing comorbidities in the context of a patient's Australian cardiovascular disease risk calculator, page 425:
    - Dyslipidaemia, page 317
    - Chronic kidney disease, page 242
    - Overweight and obesity (adult), page 366
    - Diabetes, page 304
    - Coronary heart disease, page 264
    - Stroke and transient ischaemic attack, page 413
    - Atrial fibrillation, page 226
  - Meeting target levels as per Table 1. and aiming for BP control within 3 months

Table 1. BP target levels [1–3]

Group	Target (mmHg)
Normal	≤ 130/85
Adults with uncomplicated hypertension	< 140/90 (lower if tolerated)
Adults with hypertension > 75 years without diabetes	SBP < 120
In pregnancy	< 135/85
Hypertension with comorbidities or end organ damage e.g. coronary heart disease, diabetes, chronic kidney disease, stroke or TIA, COPD	< 130/80
Those with proteinuria > 1 g per day (with or without diabetes)	< 125/75
Children > 10 years of age with a BMI > 85th centile for age and gender	See Special considerations (child), page 135

3.1 Support patient self-management [1–3]

- Provide hypertension resources outlining what hypertension is and how it affects blood vessels, cardiovascular risk and other chronic conditions. See Resource 2.
- Reinforce the importance of adhering to BP medicine regimen

- Encourage the patient to identify barriers to adequate lifestyle modification and medical adherence and to set goals to overcome those barriers. See Engaging our patients, page 19

3.2 Social-emotional support

- See Social-emotional wellbeing, page 58

3.3 Diet and nutrition [1,2]

- High sodium (salt) intake increases blood pressure
- Reducing salt intake to < 4 g/day reduces SBP by 4–5 mmHg in hypertensive people and 2 mmHg in normotensive people
- Avoid cooking with salt and takeaway processed foods high in salt
- Increasing dietary potassium in hypertensive people with normal renal function can reduce SBP by 4–8 mmHg
- See Diet and nutrition, page 29

3.4 Weight control [1–3]

- Weight loss reduces BP, improves glycaemic control and Chronic kidney disease, page 242 markers and reduces CVD risk and all-cause mortality
- A 1% reduction in body weight lowers systolic BP by an average of 1 mmHg
- A weight loss of 4.5 kg can reduce BP and prevent hypertension in Overweight and obesity (adult), page 366 and Overweight and obesity (child), page 372

3.5 Smoking cessation [1–3]

- Smoking cessation, page 48 reduces blood pressure, CVD risk and the chance of an acute coronary event within 2–6 years after quitting

3.6 Alcohol reduction [1–3]

- Consuming ≥ 2 standard drinks/day for men and ≥ 1 standard drinks/day for women increases the risk of developing hypertension
- See Alcohol reduction, page 24

3.7 Physical activity [1–3]

- Regular Physical activity and sleep, page 34 lowers BP and all-cause mortality

3.8 Monitoring [1]

- Explaining clinic or home monitoring empowers patients to address lifestyle behaviours and adhere to management interventions
- Check BP at each visit and monitor according to 5. Cycle of care
- Refer for echocardiogram if Heart failure, page 325 or murmur identified

4. Medicines for hypertension [1,2]

- As BP increases, it is more difficult to control with Lifestyle modifications, page 18 alone and antihypertensive medicines become necessary
- Identify medicines that influence BP. See Table 2.
- Combination therapy is often necessary. Fewer than 50% of people treated for hypertension will achieve an optimal BP response with a single agent
- Combination of an ARB or ACEI, a diuretic and an NSAID (the 'triple whammy') can cause acute kidney injury. Avoid with kidney disease, dehydration and elderly patients

Table 2. Medicines that influence BP [1,3]

Prescription	Over the counter and complimentary
• NSAIDs • Stimulants • Oral oestrogen contraceptives • Hormone replacement therapy • Corticosteroids • Clozapine • Serotonin-norepinephrine reuptake inhibitorS • Monomine oxidase inhibitors • Haemopoietic medicines • Rapid bromocriptine or clonidine withdrawal	• Excessive alcohol consumption • Decongestants and diet pills • Illicit drugs • Herbal: bitter orange, ginseng, guarana • Caffeine pills, black and green tea • Natural liquorice • St John's wort • Energy drinks

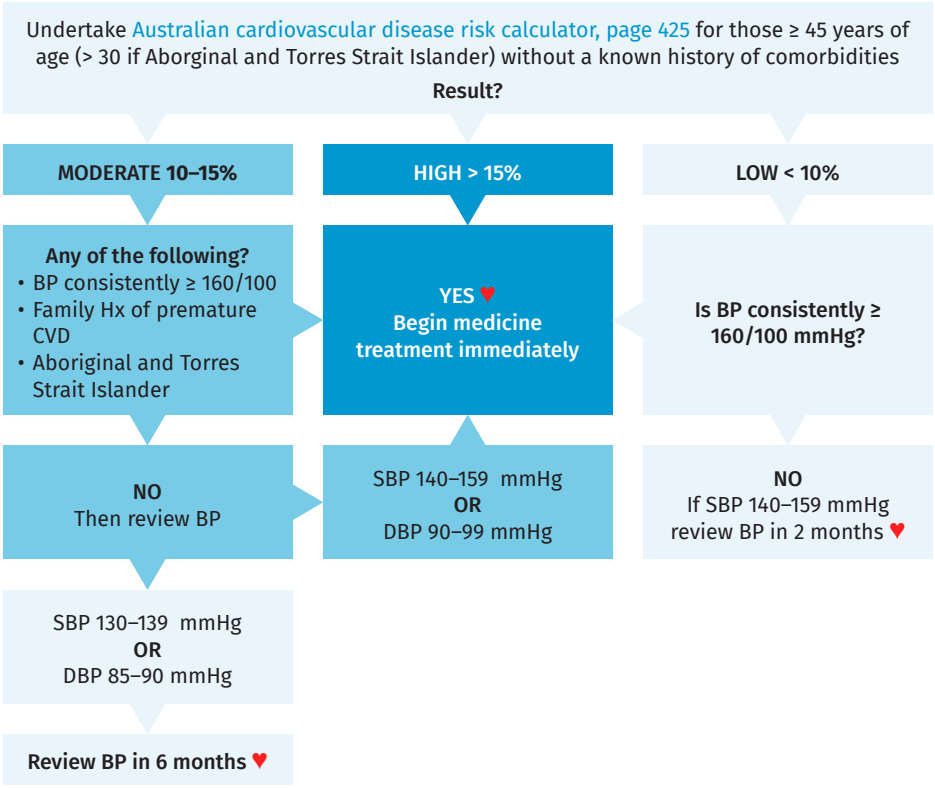
Adapted with permission from the Guideline for the diagnosis and management of hypertension in adults.

4.1 Steps to initiate, monitor and adjust antihypertensives [1–3]

- **Step 1**
  - Undertake Australian cardiovascular disease risk calculator, page 425 for:
    - all people aged 45–79 years
    - people with diabetes aged 35–79 years
    - Aboriginal and Torres Strait Islander people aged 30–79 years

    OR
  - Identify patients requiring **immediate antihypertensive therapy**:
    - moderate or severe Chronic kidney disease, page 242:
      - people with sustained eGFR < 45 mL/min/1.73m^2, **or**
      - men with persistent ACR > 25 mg/mmol, **or**
      - women with persistent ACR > 35 mg/mmol, **or**
    - a confirmed diagnosis of familial Dyslipidaemia, page 317
  - Initiate antihypertensives as per Flowchart
- **Step 2** – Choose and initiate medicines at lowest dose to reach target BP utilising Flowchart 2. and Table 3.
- **Step 3** – Stabilise, maintain and monitor medicine doses according to patient response. See Flowchart 3.

Flowchart 1. Initiating antihypertensives according to absolute CVD risk [1,2]



♥ Continue lifestyle modification, monitor BP, manage associated conditions and reassess cardiovascular risk regularly. Adapted with permission from the Guideline for the diagnosis and management of hypertension in adults. © 2016 National Heart Foundation of Australia

Flowchart 2. Medicine initiation strategy to reach target BP [1,2]

Frequently reassess adherence to interventions, secondary hypertension, comorbidity management, medicine tolerance, efficacy and side effects AND Lifestyle modifications, page 18

Step 1.
- **Start first-line medicine** at low–moderate dose
- **If not well tolerated start medicine from a different class** at low–moderate dose

Step 2.
- **If target BP not reached after 3 months*** - Add a second medicine from a different class at low–moderate dose

Step 3.
- **If target BP not reached after 3 months***- and both medicines are well tolerated, increase the dose of one medicine (except thiazide diuretics) slowly to max. dose
- **Then** increase the dose of the other medicine

Step 4.
- **If target BP not reached after 3 months*** - despite max. doses of two medicines, add a third medicine from a different class at low–moderate dose

If target BP not reached
seek specialist advice

***** Maximum effect of medicine likely within 4–6 weeks
- ACE inhibitor + ARB = increased risk of renal damage
- Verapamil or diltiazem + beta-blocker = risk of heart block

Table 3. Medicines for hypertension [1–3,5,6]

First-line medicines
Angiotensin converting enzyme inhibitors (ACEi) • Commence at the lowest dose in elderly patients and those taking diuretics • Potential benefits in diabetes, stroke/TIA, CKD, HF, AF and post MI • **Contraindicated** or potentially harmful in bilateral renal artery stenosis and pregnancy
Lisinopril 5–40 mg PO daily **OR**
Perindopril erbumine 4–8 mg PO daily **OR**
Perindopril arginine 5–10 mg PO daily **OR**
Ramipril 2.5–10 mg PO daily or in 2 equally divided doses
Angiotensin II receptor antagonists (ARBs) • **As above with ACEi** • Use with caution in those who have experienced angioedema with ACE inhibitors
***See LAM and PBS for medicine indications and restrictions**

Table 3. Medicines for hypertension *(continued)* [1–3,5,6]

Irbesartan 150–300 mg PO daily **OR**

Telmisartan 40–80 mg PO daily

Calcium channel blockers (dihydropyridine)

- Amlodipine and felodipine: lowest doses are recommended, particularly in the elderly
- Nifedipine: long-acting formulations are preferable
- **Contraindicated** or potentially harmful in heart failure

Amlodipine 5–10 mg PO daily **OR**

Felodipine MR 5–20 mg PO daily **OR**

Lercanidipine 10–20 mg PO daily **OR**

Nifedipine MR 30–120 mg PO daily

Thiazide diuretics

- It is usually unnecessary to exceed the doses shown
- Long term use not recommended in young patients due to risk of diabetes
- Potential benefits in stroke/TIA and heart failure

Hydrochlorothiazide 12.5–25 mg PO daily **OR**

***Indapamide** 1.25–2.5 mg PO daily **OR**

Indapamide MR 1.5 mg PO daily

Second-line medicines

Calcium channel blockers (nondihydropyridine)

- Potential benefits in atrial fibrillation
- **Contraindicated** or potentially harmful in heart failure, bradycardia and 2^0 or 3^0 AV block

Diltiazem MR 180–360 mg PO daily **OR**

Verapamil MR 120–480 mg PO daily (in divided doses if > 240mg)

Beta-blockers

- Useful for elevated BP, post-MI, heart failure and stable angina
- Less effective than first-line medicines for uncomplicated hypertension to reduce stroke risk
- **Contraindicated** in bradycardia (45–50 bpm), 2^0 or 3^0 AV block, sick sinus syndrome (without pacemaker), severe hypotension and uncontrolled heart failure or asthma
- Assess benefits and risks of use in diabetes, well-controlled asthma or COPD

Atenolol 25–100 mg PO daily **OR**

Metoprolol tartrate 25–100 mg PO bd

Other medicines

- Clonidine: rebound hypertension may occur with sudden cessation
- Hydralazine: used in combination with a beta-blocker or verapamil and a diuretic, to prevent reflex tachycardia. Maintenance doses above 100 mg daily are associated with increased risk of lupus-like syndrome and should not be given without determining patient's acetylator status
- **Contraindicated** or potentially harmful in depression (clonidine, methyldopa, moxonidine)

Clonidine 50 microgs PO bd (to a max. 300 microgs bd) **OR**

Hydralazine 25 mg PO bd (to a max. 100 mg bd) **OR**

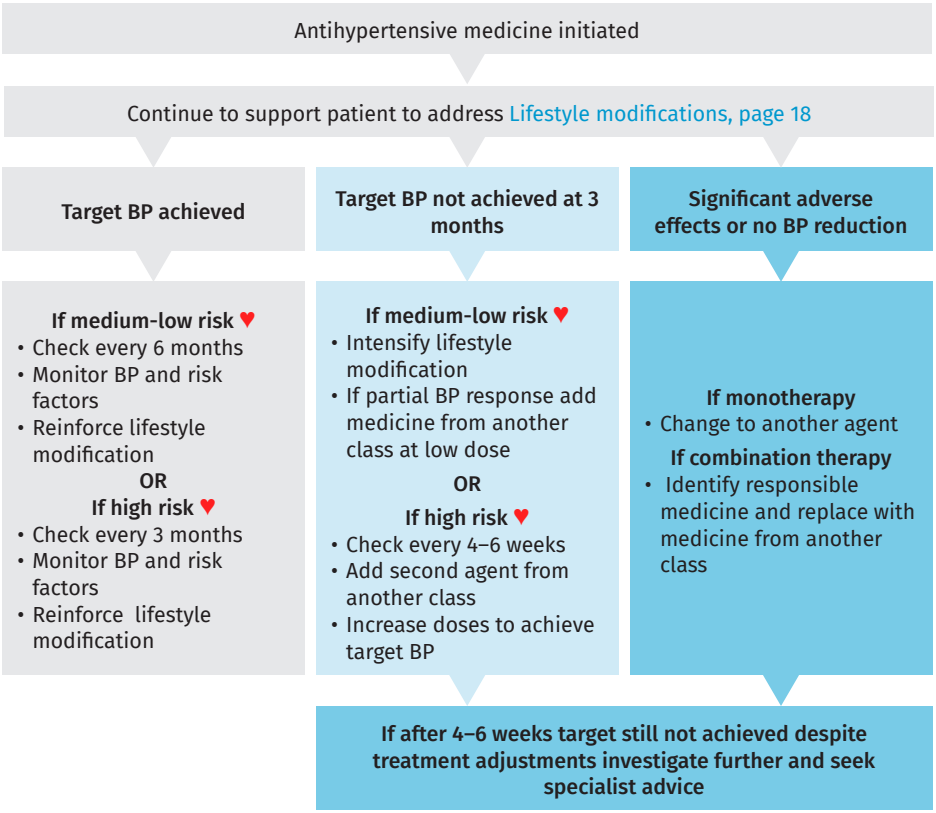
Methyldopa 125 mg PO bd (to a max. 500 mg tds) **OR**

Moxonidine 200 microgs PO daily (to a max. 300 microgs bd **or** 200 microgs bd if eGFR 30–60 mL/min) **OR**

Prazosin 0.5 mg PO bd (to a max. 10 mg bd)

***See LAM and PBS for medicine indications and restrictions**

Flowchart 3. Antihypertensive stabilisation, maintenance and monitoring [1,2]



♥ As per Australian cardiovascular disease risk calculator, page 425

5. Cycle of care

Cycle of care summary for hypertension

Action	Dx	Frequency
Height	✓	Annually until stops growing
BP	✓	At each visit
Weight	✓	12 mthly
Waist circumference	✓	12 mthly
BMI	✓	12 mthly
Lifestyle modifications	✓	At each visit
Social-emotional support	✓	12 mthly
Visual acuity	✓	12 mthly
Retinal imaging and fundoscopy	✓	As per MO/NP or specialist 12 mthly
FBC	✓	12 mthly
UEC	✓	12 mthly or with change of meds
Fasting blood lipids	✓	12 mthly
Fasting blood glucose	✓	12 mthly
Urinalysis	✓	12 mthly
ACR	✓	12 mthly
ECG	✓	12 mthly
Echocardiogram	✓	As per MO/NP
Chest x-ray	✓	As per MO/NP
Influenza, pneumococcal and COVID-19 vaccines	Recommended. See the *Australian Immunisation Handbook* for schedule	
HW/RN review	✓	3 mthly
MO/NP review	✓	High risk 3 mth, low-medium risk 6 mthly
Medicine review	✓	3 mthly if medicine changed otherwise 12 mthly
Dentist review	✓	12 mthly
Dietitian review	✓	3 mthly
Specialist review	✓	By MO/NP according to comorbidities

6. References

- All Chronic Conditions Manual references are available on the Office of Rural and Remote Health website

7. Resources

1. Queensland Clinical Guidelines. Hypertension and pregnancy
2. The National Heart Foundation of Australia

Osteoarthritis

High risk groups [1,2]

- Females
- Overweight or obesity
- Previous joint injury, trauma or misalignment
- Family history of osteoarthritis (OA)
- Repetitive occupational joint loading stress
- Aged

Referral

- Refer to:
  - physiotherapist, occupational therapist or exercise physiologist for exercise plan, home supports and falls prevention measures
  - pain specialist for uncontrolled pain
  - orthopaedic surgeon if unresponsive to all interventions

1. What is osteoarthritis? [1–5]

- A chronic joint condition characterised by the breakdown of cartilage which results in inflammation, pain and disability
- Affects the joint, cartilage, bone, synovial lining and synovial fluid, most commonly in the hands, cervical and lumbar spine, and hips and knees
- Causes pain, stiffness, swelling, joint instability and muscle weakness, which impacts physical function and mobility and reduces quality of life
- Prevalence increases with age affecting over 50% of those > 65 years

2. Diagnosis of osteoarthritis [1–4]

- Usually based on patient history, presence of risk factors, and examination, including assessment of:
  - weight, BMI and waist circumference
  - muscle strength
  - joint alignment and function and
  - gait
- Features suggestive of OA include:
  - > 45 years of age and
  - activity-related joint pain and
  - +/- early morning joint stiffness lasting < 30 minutes
- Consider investigations to exclude alternative diagnoses include:
  - C-Reactive Protein (CRP)
  - erythrocyte sedimentation rate (ESR)
  - rheumatoid factor (RhF)
  - synovial fluid analysis
  - radiograph imaging
  - Anti–cyclic citrullinated peptide (anti-CCP)

3. Management of osteoarthritis [1,2,4,5]

- The goals of managing OA are to intervene early to slow progression, relieve pain, minimise disability and postpone or avoid surgery by:

- early recognition and control of pain symptoms
- optimising and maintaining function, quality of life and ability to perform daily activities
- identifying and addressing comorbid conditions including:
  - Dementia, page 271
  - Overweight and obesity (adult), page 366
  - Hypertension, page 345
  - Diabetes, page 304
  - Depression, page 286
- support from a multidisciplinary team

3.1 Support patient self-management [1–3]

- Provide the patient with OA resources to maximise independent living. See Resource 1.
- Discussions should avoid terms such as 'bone on bone', 'normal wear and tear' and 'cartilage erosion' and involve:
  - OA progression
  - the fluctuation of symptoms
  - modifiable risk factors
  - choices and expectations of treatment
  - managing symptoms
- Utilise community support services to enhance safety, reduce risk, and support the patient to stay in their own home. See Resources 2. and 3.
- Encourage the patient to identify barriers to adequate lifestyle modification and clinical adherence and develop goals to overcome those barriers. See Engaging our patients, page 19

3.2 Social-emotional support [1,2,4,5]

- Up to 50% of those with OA will develop Depression, page 286 and Anxiety disorders, page 197, due to fatigue, insomnia, mood changes and pain. See Resource 4.
- See Social-emotional wellbeing, page 58

3.3 Pain control [1–3,5,6]

- Non-pharmacological interventions should be applied first and include:
  - Diet and nutrition, page 29
  - Physical activity and sleep, page 34
  - topical hot or cold pack application
  - complementary therapies may help some patients
  - walking aids
  - massage and manual therapy
  - transcutaneous electrical nerve stimulation (TENS)
  - joint taping and bracing
- Continue non-pharmacological interventions if initiating medicines as stepped approach. See Figure 1.
- Consider referral to pain specialist if Persistent pain, page 387 causes severe ongoing disability, despite multiple treatment modalities

3.4 Physical activity [1–6]

- Regular Physical activity and sleep, page 34 reduces pain and increases function and quality of life with OA

- Discomfort in the affected joint(s) during exercise does not indicate disease progression
- Use supportive language such as 'hurt does not mean harm' and 'sore but safe'
- Consider topical or oral analgesia prior to exercise
- Falls risk increases when exercising in combination with medicine use
- Strength and balance activities maintain muscle tone and prevents falls
- Refer to a physiotherapist or exercise physiologist to tailor and initiate an exercise regimen and strength and balance group

3.5 Weight control [1,2,4–6]

- Overweight and obesity (adult), page 366 is a risk factor for knee and hip OA due to increased joint load
- Weight loss improves gait speed and reduces knee pain
- 25–50% of knee replacements can be avoided by maintaining a healthy BMI and waist circumference or > 5% weight reduction
- See Diet and nutrition, page 29

3.6 Falls prevention [1–3]

- Screen for individual falls risk. See Resource 4.
- Optimise supportive shoe wear
- Address any hearing and vision impairments. See Ears and hearing (adult), page 163 and Eyes and vision (adult), page 168
- Review medicines and minimise sedatives especially benzodiazepines
- Refer to a physiotherapist for a balance and strength or falls prevention group
- Refer to an occupational therapist to assess for home modifications or mobility aids e.g. walking aids, handrails, removal of slip and trip hazards
- Consider bone mineral density (BMD) testing and Osteoporosis, page 360 treatment for individuals with recurrent falls

3.7 Assistive devices [1–6]

- Refer to a physiotherapist and occupational therapist for joint protection supports to minimise symptoms when performing daily activities for example:
  - tap and jar turners, adaptive eating utensils
  - splints or braces to support joints
  - application of heat or ice
  - zipper pulls and buttoning aids for clothing
  - raised over toilet seats
  - see Resource 5.

3.8 Surgery [1,2,4,5]

- Around 30% of OA will progress to a severity requiring surgery e.g. knee, spine
- Refer to an orthopaedic surgeon where debilitating pain or dysfunction persists despite optimal lifestyle modification and clinical interventions

4. Medicines for osteoarthritis

4.1 General principles [1–6]

- Medicines aim to improve function and quality of life by managing acute or persistent pain and stiffness despite optimal non-pharmacological management interventions

- Medicines are trialled in relation to the patient's symptoms with the aim to control pain at the lowest effective dose and shortest possible time
- Opioids are not recommended as risks outweigh the benefits e.g. falls
- If on NSAIDs check eGFR, ACR, FBC and LFTs annually
- For further pain relief options see Persistent pain, page 387

4.2 Topical agents [1–4]

- Offer a topical NSAID 2–4 times daily for up to 14 days then review for efficacy. If ineffective offer oral. See Table 1.
- Consider other topical creams, ointments, gels, liniments and sprays including:
  - counter-irritants that provide a sensation of warmth e.g. eucalyptus oil, turpentine oil, nicotinate, nonivamide, salicylates and camphor
  - agents that produce a feeling of coolness e.g. menthol
  - capsaicin which acts as an analgesic causing a stinging or burning sensation
- Rare side effects include irritation, itching, erythema, rash or dermatitis (chemical burns), bronchospasm or dyspnoea (salicylates), nausea or photo-sensitivity

Table 1. Medicines for osteoarthritis [1,3–7]

NSAIDs
• Avoid in those with increased cardiovascular disease risk, eGFR < 30 mL/min • Adverse effects include HF, GI ulceration and renal impairment especially in elderly If risk of upper GI bleeding risk begin proton-pump inhibitor (PPI) • **Contraindicated** in active peptic ulcer disease or GI bleeding where appropriate • Efficacy is similar for different NSAIDs for the treatment of osteoarthritis • Addition of paracetamol may produce additive benefit and a reduced NSAID dose
Ibuprofen 200–400 mg PO tds (to a max. 2400 mg daily) **OR**
Ketoprofen MR 200 mg PO daily **OR**
Naproxen 250–500 mg PO bd (to a max. 1250 mg daily)
Paracetamol
• Consider short trial for knee or hip OA if other medicines are contraindicated, not tolerated or ineffective. Discontinue if ineffective
Paracetamol 1 g PO 4–6 hrly prn (to max. 4 g daily) **OR**
Paracetamol MR 1.33 g PO tds prn
Duloxetine
• Consider for persistent knee pain
***Duloxetine** 30 mg PO daily for 1 week, increasing to 60 mg daily (to max. 120 mg)
***See LAM and PBS for medicine indications and restrictions**

4.3 Intra-articular corticosteroid injections [1,3–7]

- Only considered for acute pain if simple analgesia ineffective, contraindicated or not tolerated. See Table 2. for corticosteroid choice

Table 2. Intra-articular corticosteroid injections for OA [1–3,7]

Local corticosteroid injections

- Give no more then 4 injections/year to avoid local tissue atrophy or side effects
- Avoid further injections if no response after 2 consecutive injections
- Patients to avoid overusing joint following injection as this risks further joint deterioration and reduces beneficial effects
- Local anaesthetic may be used before, or mixed with the corticosteroid
- Not given if evidence of skin, joint or soft tissue infection at the injection site

Preparation	Small joint (e.g. hand)	Medium joint (e.g. wrist)	Large joint (e.g. knee)	Soft tissue (e.g. bursa)
Betamethasone sodium phosphate + betamethasone acetate 5.7 mg/mL	0.25–0.5 mL	0.5–1 mL	1–2 mL	1 mL
Methylprednisolone acetate 40 mg/mL	0.1–0.25 mL	0.25–1 mL	0.5–2 mL	0.1–0.75 mL
Triamcinolone acetonide 10 mg/mL	0.25–1 mL	1 mL	0.5–2 mL	1–2 mL
Triamcinolone acetonide 40 mg/mL	0.1–0.25 mL	0.25 mL	0.5–1 mL	0.5 mL

5. Cycle of care

Cycle of care summary for osteoarthritis

Action	Dx	Frequency
Height	✓	Once
Weight	✓	12 mthly
BMI	✓	12 mthly
Waist circumference	✓	12 mthly
BP	✓	12 mthly
FBCs, LFTs, eGFR and ACR	✓	Annually if on NSAIDs
Smoking cessation	✓	Each visit
Physical activity	✓	Each visit
Diet and nutrition	✓	Each visit
Carer education and support	✓	Each visit
Social-emotional wellbeing	✓	Each visit
Influenza, pneumococcal and COVID-19 vaccines	Recommended. See the *Australian Immunisation Handbook* for schedule	
Lifestyle modification	✓	Each visit
Medicine review	✓	If on NSAIDs then 3–6 mthly initially then annually
HW/RN review	✓	6 mthly
MO/NP review	✓	6 mthly
Occupational therapist	✓	As required
Physiotherapist	✓	As required
Specialist review	✓	As required
Falls risk assessment	✓	As patient situation changes
Balance and strength exercise program	✓	As determined by physiotherapist

6. References

- All Chronic Conditions Manual references are available on the Office of Rural and Remote Health website

7. Resources

1. Arthritis Australia and My Joint Pain
2. All aged care services are available via myagedcare
3. Medical Aids Subsidy Scheme (MASS)
4. Individual falls risk screening and Queensland Government's Stay on Your Feet Toolkit
5. Assistive device information

Osteoporosis

High risk groups [1–4]

- Early or post-menopausal women
- Men > 50 years
- Coeliac disease, hyperthyroidism, osteogenesis imperfecta or low testosterone
- Family history of osteoporosis (OP) or hip fracture
- History of minimal trauma fracture or falls
- Vertebral fracture or height loss
- People receiving hormone therapy for breast or prostate cancer
- Those receiving antiepileptics, HIV treatments or long-term glucocorticoids
- Lack of weight-bearing Physical activity and sleep, page 34 or inactivity
- Low body weight, mass and strength
- Low calcium intake or vitamin D deficiency
- Those that smoke cigarettes or drink excessive alcohol amounts
- Chronic kidney disease, page 242 or Diabetes, page 304

Referral [1,2,5]

- Refer to specialist if:
  - a recent vertebral fracture (within the last 2 years)
  - ≥ 2 vertebral fractures (ever)
  - Bone mineral density (BMD) T-score ≤ – 3.5
  - treatment with high dose glucocorticoids (≥ 7.5 mg/day of prednisolone or equivalent over 3 months)

1. What is osteoporosis? [1,4,5]

- Characterised by deterioration of bone tissue and mass leading to fragile bones and increased risk of minimal trauma fractures, usually from falls e.g. hip, forearm, humerus, shoulder, ankle, pelvis, vertebra and tibia
- For those with OP, the lifetime risk of minimal trauma fracture > 60 years of age is 44% in women and 25% in men
- Those who sustain a fracture are at greater risk of sustaining another fracture

2. Diagnosis of osteoporosis [1–5]

- Diagnosis is based on:
  - medical history and presence of risk factors
  - physical examination including height and spinal alignment
  - baseline laboratory tests e.g. FBC, ESR, Ca^{+}, ACR, UEC, serum 25(OH)D, TFT
  - absolute fracture risk. See Resource 1. for calculators
- Confirmed by BMD T-score as below:

- Thoracic and lumbar spine radiographs are also considered
- Exclude other causes of bone fragility e.g. metastatic cancers, endocrine disorders

3. Management of osteoporosis [2,5]

- The goals of managing OP are to improve and maintain bone health so patients can lead active and injury free quality lives by:
  - addressing Lifestyle modifications, page 18
  - optimising and maintaining cognitive and physical function to independently perform daily activities
  - identifying and addressing comorbid conditions including:
    - Depression, page 286
    - Anxiety disorders, page 197
    - Diabetes, page 304
    - Chronic kidney disease, page 242

3.1 Support patient self-management [1–3]

- Provide the patient with OP resources. See Resource 2.
- Utilise community support services to reduce risk and support the patient to stay in their own home. See Resources 3. and 4.
- Discuss continuity of treatment as any interruption results in loss of bone density and treatment benefits
- Engaging our patients, page 19 to identify barriers to adequate lifestyle modification and clinical adherence and develop goals to overcome those barriers

3.2 Social-emotional support [1,2]

- See Social-emotional wellbeing, page 58

3.3 Adequate calcium intake [1,4,5,7]

- Calcium helps to prevent OP and minimal trauma fractures
- Adequate calcium intake is achieved by Diet and nutrition, page 29, including:
  - fortified, low fat and soy milks
  - low fat yoghurts and cheeses
  - tinned fish
  - tofu
  - green vegetables
  - nuts and tahini
  - dried fruit
- The recommended daily intake of calcium is 1000 mg for men 50–70 years and 1300 mg for women > 50 years and men > 70 years

3.4 Physical activity [1,2,4,5,8]

- Regular weight bearing and strength training Physical activity and sleep, page 34 is the most effective lifestyle behaviour to improve bone structure, muscle strength and balance
- Encourage weight bearing, resistance training and strength activities for 30 minutes, 2–3 days/week, including:
  - cycling
  - (water) aerobics
  - yard and garden work
  - golf with no cart
  - swimming
  - tennis
  - stair climbing
  - hand or ankle weights

- Be mindful of falls risk during exercise especially in combination with medicines
- Refer to a physiotherapist or exercise physiologist to develop an exercise regimen or enrol in a strength and balance group

3.5 Body weight [1,2,4,5]

- Low body weight doubles the risk of a hip fracture
- Target a healthy body weight and waist circumference to maintain muscle mass while guarding against being under or overweight
- See Diet and nutrition, page 29

3.6 Adequate vitamin D [1,4–7]

- Vitamin D promotes absorption of calcium which maintains bone mineralisation and muscle function
- Sufficient vitamin D is produced by exposure to sunlight:
  - **in summer (UV level > 3):** exposure of face, hands and arms for a few minutes before 10am and after 3pm most days of the week. Use skin protection
  - **in late autumn and winter (UV level < 3):** any daytime outdoor activity with skin partly covered most days of the week
- Monitor those with OP not able to maintain a serum vitamin D concentration > 50 nmol/L, including those:
  - with limited sun exposure
  - with naturally dark skin
  - who cover their skin (cultural or habitual clothing)
  - in residential care or housebound, particularly the elderly
  - who are disabled or chronically ill
  - with medical conditions or take medicines that interfere with vitamin D metabolism
- Small amounts of vitamin D are obtained from Diet and nutrition, page 29 e.g. fatty fish (salmon, sardine, herring and mackerel), liver, eggs and some fortified foods

3.7 Alcohol reduction [1,2,4,5]

- Excessive alcohol intake impairs bone formation and increases risk of falls and fractures. See Alcohol reduction, page 24

3.8 Smoking cessation [1,4,5]

- Smoking is associated with reduction in bone structure and strength and increases the risk of fractures
- Refer willing patients to a Smoking cessation, page 48 program

3.9 Falls prevention [1,2,4,5]

- Screen for individual falls risk. See Resource 6.
- Review medicines and minimise sedatives especially benzodiazepines
- Refer to a physiotherapist and exercise physiologist for a balance and strength and a falls prevention group
- Refer to an occupational therapist to assess for home modification requirements to avoid slip and fall hazards

4. Medicines for osteoporosis [1,2,4,5]

- The benefit of calcium and vitamin D supplements for fracture reduction is low (except for institutionalised patients at risk of deficiency)
- Ensure completion of dental assessments and procedures, and oral wounds are healed before commencing OP medicines to minimise jaw osteonecrosis risk
- Encourage patients to maintain oral hygiene, dental check-ups, and report any dental pain or swelling, especially those on bisphosphonates or denosumab
- Glucocorticoids reduce bone formation and calcium absorption, increasing fracture risk independent of BMD. Assess need for their use

Table 1. Calcium supplements for OP [1,4,5,7]

Calcium carbonate
• Only consider if dietary calcium intake is < 1300 mg/day • Can reduce absorption of some medicines e.g. thyroxine, tetracyclines, quinolones, bisphosphonate. Separate by at least 2 hours
Calcium carbonate 1.25–1.5 g (elemental calcium 500–600 mg) PO, daily with food

4.1 Vitamin D [1,7]

- Measure baseline serum 25(OH)D level prior to initiating vitamin D, then reassess after 3 months. See Table 2.
- Target serum 25(OH)D levels > 50 nmol/L. Continue to provide maintenance doses
- Higher doses of 50–100 microgs (2000–4000 IU) per day may be required in some patients e.g. obese

Table 2. Supplements for vitamin D deficiency [4,6,7]

	Mild deficiency serum 25(OH)D concentration 30 to 49 nmol/L	Moderate deficiency serum 25(OH)D concentration 12.5 to 29 nmol/L	Severe deficiency serum 25(OH)D concentration < 12.5 nmol/L
Colecalciferol	• 25–50 microgs (1000–2000 units) PO, daily **OR** • 175–350 microgs (7000–140000 units) PO, weekly	• 75–125 microgs (3000–5000 units) PO, daily for 6–12 weeks **FOLLOWED BY** • 25 to 50 microgs (1000–2000 units) PO, daily	

4.2 Antiresorptive (AR) medicines [1,2]

- AR medicines (bisphosphonates and denosumab) slow bone loss by inhibiting osteoclast function, improving BMD and reducing the risk of fractures
- Patients should ensure adequate intake of calcium and vitamin D while on these medicines, however, calcium should be taken at a different time to ARs
- ARs should be taken with caution in patients with renal disease
- See Table 3.

Table 3. Medicines for OP [1,2,4,5]

Bisphosphonates

- For men and women with a minimal trauma fracture
- Contraindicated if unable to swallow or remain upright for 30 minutes
- Long-term use increases risk of osteonecrosis of the jaw and atypical fracture of the femur
- Musculoskeletal pain is common and can be severe and disabling
- To minimise upper gastrointestinal side effects take in the morning on an empty stomach and remain upright for at least 30 minutes and avoid:
  – food, drink and medicines for 30 minutes
  – calcium salts, antacids or iron and magnesium supplements within 2 hours

Alendronate 70 mg PO wkly

Risedronate 35 mg wkly **OR** 150 mg mthly PO

Zoledronic acid 5 mg IV once a year (over 15 minutes). If eGFR < 35 mL/min avoid

Denosumab

- Correct vitamin D deficiency before initiating as medicine can exacerbate hypocalcaemia
- Avoid unplanned cessation as its benefits rapidly reverse increasing vertebral fracture risk

Denosumab 60 mg subcut 6 mthly

Teriparatide

- Patient must have a T-score ≤ -3, two or more minimal trauma fractures and at least one fracture after 12 months of AR therapy
- Initiated in consultation with a specialist

Teriparatide 20 microgs subcut daily for a max. of 24 months

Romosozumab

- Reduces vertebral and hip fractures risk in postmenopausal women
- Patient must have a T-score ≤ –3 and at least one fracture after 12 months of AR therapy
- Initiated in consultation with a specialist

***Romosozumab** 210 mg subcut (two 105 mg injections), once a month for 12 months

Raloxifene

- Reduces vertebral fracture risk in women > 3 years postmenopause

***Raloxifene** 60 mg PO daily

Tibolone

- Reduces vertebral fracture risk in postmenopausal women typically < 60 years of age

***Tibolone** 2.5 mg PO daily

***See LAM and PBS for medicine indications and restrictions**

5. Cycle of care

Cycle of care summary for osteoporosis

Action	Dx	Frequency
Height	✓	annually
BMI	✓	6 mthly
Weight	✓	6 mthly
Waist circumference	✓	6 mthly
BP	✓	6 mthly
Serum 25(OH)D levels	✓	3 mthly after commencing vitamin D then annually
Carer education and support	✓	Each visit as required
Smoking cessation	✓	Each visit as required
Physical activity	✓	Each visit as required
Diet and nutrition	✓	Each visit as required
Social-emotional wellbeing	✓	Each visit as required
Influenza, pneumococcal and COVID-19 vaccines	Recommended. See the *Australian Immunisation Handbook* for schedule	
Lifestyle modification	✓	Each visit as required
Medicine review	✓	3–6 mths after medicine initiation then annually
Bone mass density testing	✓	Every 2 years
HW/RN review	✓	Each visit
MO/NP review	✓	6 mthly
Occupational therapist	✓	As indicated
Physiotherapist	✓	Exercise program or falls prevention group
Dental review	✓	Annually and prior to commencing medicines
Specialist review	✓	As indicated
Aged care services	✓	As indicated
Falls risk assessment	✓	Each visit
Balance and strength exercise program	✓	As determined by allied health

6. References

- All Chronic Conditions Manual references are available at the Office of Rural and Remote Health website

7. Resources

1. The Fracture Risk Assessment Tool [FRAX] and the Garvan Fracture Risk Calculator
2. Healthy Bones Australia patient fact sheets
3. All aged care services are available via myagedcare
4. Medical Aids Subsidy Scheme (MASS)
5. Queensland Government's Individual falls risk screening and Stay on Your Feet Toolkit

Overweight and obesity (adult)

High risk groups [1]

- Diets high in saturated fat and energy dense food
- Sedentary lifestyle behaviours
- Aboriginal and Torres Strait Islander people and those living in rural and remote locations
- Socioeconomic disadvantaged

Considerations in pregnancy [1–4]

- Increases risks of numerous maternal and fetal complications and malformations, medical interventions and death
- Weight loss is not recommended during pregnancy

1. What is overweight or obesity in adults? [1,5]

- Defined as body fat accumulation higher than that required for healthy and optimal functioning of the body
- Primarily caused by an imbalance between energy consumed and energy expended (i.e. a high fat, energy dense diet and a sedentary lifestyle)
- Less common causes include hormone imbalances, medicines and poor sleep hygiene
- Risk of acquiring, and mortality from preventable chronic conditions increases as waist circumference and BMI increases, independent of age, sex and ethnicity
- > 50% Australians are overweight or obese
- People with obesity face lifelong bias, stigma and assumptions about being irresponsible, lacking willpower or blamed and shamed, making some reluctant to seek help

2. Diagnosis of overweight or obesity in adults [1,3,5–7]

- Request permission to discuss obesity before any intervention. Not all patients are prepared to engage in discussions about their weight
- Overweight and obesity is identified by assessing (see Table 1.):
  - **BMI:** weight in kilograms divided by height in metres squared (kg/m^2)
  - **waist circumference:** measured in centimetres (cm) during expiration at the mid-point between the bottom of the person's ribs and the top of the hipbone
  - **waist-to-height ratio**: used to measure central adiposity by dividing waist circumference by height in centimetres (cm). Higher ratios indicate higher risks of diabetes, hypertension and CVD
  - dietary habits and activity levels
  - root weight gain causes, physical complications and barriers to addressing lifestyle behaviours

3. Management of adults who are overweight or obese [1,2,3,6]

- The goals of managing overweight and obesity is for patients to lead active healthy lives and maintain target goals (see Table 1.) by:

- reducing energy intake and optimising Diet and nutrition, page 29
- increasing energy expenditure. See Physical activity and sleep, page 34
- Alcohol reduction, page 24 and Smoking cessation, page 48
- providing ongoing counselling and psychotherapy
- identifying and addressing key comorbidities in relation to Australian cardiovascular disease risk calculator, page 425:
  - Stroke and transient ischaemic attack, page 413
  - Dyslipidaemia, page 317
  - Depression, page 286
  - Anxiety disorders, page 197
  - Diabetes, page 304
  - Chronic kidney disease, page 242
  - Hypertension, page 345
  - Coronary heart disease, page 264
  - Heart failure, page 325

Table 1. Classifications of overweight and obesity [1,6,7]

Classification	BMI (kg/m²)	Waist circumference (cm)		Waist-to-height ratio	Recommended weight loss
		Women	Men		
Healthy range	**18.5 – 24.9** **18.5 – 22.9 ***	**< 80**	**< 94**	0.4 – 0.49	-
Overweight	25 – 29.9 23 – 27.49 *	80 – 88	94 – 102	0.5 – 0.59	> 1–5%
Obese class I	30 – 34.9 27.5 – 32.4 *	> 88 > 80 *	> 102 > 90 *	> 0.6	> 10%
Obese class II	35 – 39.9 32.5 – 37.4 *	≥ 115	≥ 125	> 0.6	> 10%
Obese class III	> 40 ≥ 37.5 *	≥ 115	≥ 125	> 0.6	> 15%

* Values recommended for Aboriginal and Torres Strait Islander and Asian populations

3.1 Support patient self-management [1,2,3,5,6]

- Discuss overweight and obesity and:
  - its association with chronic conditions
  - the benefits of Diet and nutrition, page 29 and Physical activity and sleep, page 34
  - achieving and maintaining a weight loss of ≥ 5% will result in:
    - delayed progression or improved Diabetes, page 304 control
    - improvements to kidney function and sleep apnoea
    - reduction in cardiovascular disease risk
    - reduction in knee and hip Osteoarthritis, page 354 risk
  - the greater the weight loss, the greater reduction in health risks

  - self-monitoring is associated with greater weight loss. See Resource 1.
- Use person first supportive language to reduce stigma
- Encourage the patient to identify barriers to adequate lifestyle modification and clinical adherence and provide goals to overcome those barriers. See Engaging our patients, page 19

3.2 Social-emotional support [1–3,6]

- Depression, page 286 and eating disorders are associated with overweight and obesity. If suspected, refer to a dietitian or psychologist
- See Social-emotional wellbeing, page 58

3.3 Lifestyle plan [3,6,8]

- In partnership, develop a documented lifestyle plan supporting the patient to:
  - set their own achievable goals e.g. initial weight loss target of ≥ 1–5 %
  - use a diary to monitor food intake and activity levels. See Resource 1.
  - monitor and record their own BMI, waist circumference and waist-to-height ratio
  - take action and seek a health professional if weight is regained
- Review the plan every 2 weeks for the first 3 months to assess for suitability or modification and reinforce lifestyle behaviour strategies

3.4 Diet and nutrition [1–3,5,6,8]

- Reducing energy intake by improving Diet and nutrition, page 29 is the single most effective means to reduce weight. See Resources 2–6.
- When discussing dietary approaches for a lifestyle plan consider:
  - what has already been tried, its success and lessons learned
  - readiness and confidence to make changes
  - influence of cultural values and family beliefs on health behaviours
  - dietary preferences of the family and brainstorming healthy food alternatives
  - availability, affordability and ability to store perishable fresh food
  - identifying and managing triggers for emotional eating
  - strategies to control or reduce portion sizes e.g. use smaller plates
  - maintaining routine eating patterns and mindful eating
  - strategise situations that encourage unhealthy eating e.g. inactivity, parties
- Refer to dietitian for a tailored low-energy diet if not meeting targets. See Table 1.

3.5 Physical activity [1,2,5,6,9]

- When discussing Physical activity and sleep, page 34 goals to a lifestyle plan consider:
  - the influence of cultural values or family beliefs on health behaviours
  - time or support to undertake physical activity e.g. child care or chores
  - the patient's fitness level
  - mobility impairment due to age, disability, comorbidity or size
- Refer to a physiotherapist or exercise physiologist for a tailored exercise program

3.6 Psychotherapy [1–3,6]

- Cognitive behaviour therapy (CBT) and interpersonal psychotherapy (IPT) are considered first line treatment
- Psychotherapy:
  - benefits weight loss when combined with a weight loss plan (Resource 1.)
  - provides skills which reduce risk of relapse
  - requires commitment by the person
  - requires referral to a social worker, mental health worker, psychologist or GP/NP
- General principles of psychotherapy are to:
  - assist patient to problem-solve cravings at the time they occur
  - resist thoughts of pessimism and self-criticism and taking control by replacing them with realistic thoughts. An example might be:
    - "I am hungry. If I eat a pie and a soft drink my hunger will be satisfied and I will gain weight"
    - "I am hungry. If I eat a sandwich and drink a glass of water my hunger will be satisfied and I will not gain weight"
  - practice behavioural activities frequently to improve mood

3.7 Obstructive sleep apnoea (OSA) [1–3]

- Obesity is a primary contributor to OSA
- Accepted treatment for OSA is weight loss and CPAP therapy
- Assess a patient's daytime sleepiness and OSA risk by using a validated tool. If they score highly refer to a sleep specialist. See Resource 7.

3.8 Home modifications

- Refer to a physiotherapist or occupational therapist for home supports to assist activities of daily living such as:
  - bariatric shower chairs
  - slip and fall hazard removal
  - shower and toilet handrails

3.9 Surgery [1–3,6]

- Bariatric surgery is an efficient weight loss intervention
- Refer patients to a specialist to consider surgery if:
  - BMI > 40 kg/m^2
  - BMI > 35 kg/m^2 with comorbidities
  - BMI > 30 kg/m^2 with poorly controlled diabetes or increased cardiovascular risk
- Not recommended for 12–18 months prior to planning to conceive or if pregnant

4. Medicines for adults who are overweight or obese

- Lifestyle modifications, page 18 is sufficient for moderately overweight patients
- Only use medicines in conjunction with lifestyle modification and counselling
- Be mindful of medicines that cause weight gain. See Table 2.

Table 2. Medicines associated with weight gain 12 weeks from commencement [1,2]

Medicines	Common uses
Antipsychotics including clozapine, olanzapine	• Bipolar disorder
Beta-adrenergic blockers, particularly propranolol	• Hypertension, anxiety
Insulin	• Diabetes mellitus
Lithium	• Bipolar disorder
Pizotifen	• Migraine, cluster headache
Sodium valproate	• Epilepsy, psychosis
Glibenclamide, glimepiride and glipizide	• Type 2 diabetes
Thiazolidinediones, including pioglitazone	• Type 2 diabetes
Tricyclic antidepressants, including amitriptyline	• Depression
Anabolic steroids	• Various endocrine disorders
SNRI's including mirtazapine	• Depression

Table 3. Medicines for overweight and obesity [1–3,10–14]

Phentermine

- For short-term use; 3 months
- Side effects include tachycardia, hypertension, insomnia and dry mouth
- Avoid using with anti-depressants or in those with CHD, arrhythmias, renal impairment or uncontrolled hypertension due to its cardiac stimulant actions
- With a weight loss plan, a weight reduction of 5–10% is achievable in 12 weeks

- ***Phentermine** 15 mg PO daily at breakfast (to max. 40 mg daily)

Glucagon-like peptide 1 receptor agonist

- Side effects include nausea, vomiting, constipation and diarrhoea
- Increased risk of gallstones and cholecystitis requiring cholecystectomy
- With a weight loss plan, a weight reduction of 8% after 12 months is achievable

- ***Liraglutide** 0.6 mg subcut at the same time daily. Increase incrementally by 0.6 mg wkly (to max. 3 mg daily)
- ***Semaglutide**
  - 0.25 mg subcut wkly for 4 weeks **then**
  - 0.5 mg subcut wkly for further 4 weeks **then**
  - 1 mg subcut wkly thereafter

Naltrexone and bupropion

- Side effects include nausea and vomiting
- With a weight loss plan, a weight reduction of 6.1% after 12 months is achievable
- Cease if weight loss is < 5% after 16 weeks

- ***Naltrexone 8 mg/bupropion 90 mg**
  - 1 tablet PO mane for 1 week **then**
  - 1 tablet PO bd for 1 week **then**
  - 2 tablets PO mane and 1 tablet in the evening for the third week **then**
  - 2 tablets PO bd

***See LAM and PBS for medicine indications and restrictions**

5. Cycle of care

Cycle of care summary for adults who are overweight or obese

Action	Dx	Frequency
Height	✓	Once
Weight	✓	Every 2 wks for 3 mths then 3 mthly
BMI	✓	
Waist circumference	✓	
Blood pressure	✓	
Lipid profile	✓	12 mthly
Fasting blood glucose levels	✓	12 mthly
ALT	✓	12 mthly for NAFLD
Weight loss plan	✓	Every 2 wks for 3 mths then mthly for 12 mths. Continue review until targets achieved
Behavioural change	✓	
Patient self-management	✓	
Lifestyle modifications	✓	
Diet modifications	✓	
Social-emotional wellbeing	✓	
Influenza, pneumococcal and COVID-19 vaccines	Recommended. See the *Australian Immunisation Handbook* for schedule	
Dietitian	✓	Mthly for 3 mths initially
RN/HW review	✓	Each visit
MO/NP review	✓	3 mthly then 12 mthly

6. References

- All Chronic Conditions Manual references are available on the Office of Rural and Remote Health website

7. Resources

1. Exercise and weight loss monitoring chart and Queensland Health's Weight loss planning
2. Hunger level scale
3. Fats, oils and heart health
4. National Heart foundation Nutrition Position Statements
5. My health for life and CSIRO Total wellbeing diet
6. The Queensland Governments Staying healthy diet and nutrition resources and Dieting and weight management guidance
7. The Epworth Sleepiness Scale and STOP-Bang questionnaire

Overweight and obesity (child)

High risk groups [1–4]

- From families whose diets are high in saturated fats and sugars
- Formula fed infants
- Socioeconomic disadvantaged
- Living in rural and remote locations
- Adverse childhood experiences e.g. disability, bullying, violence, abuse
- Increased sedentary behaviours and reduced physical activities
- Poor sleep
- Perinatal factors (below)

Considerations in pregnancy [3,6]

- Diabetes in pregnancy increases the risk of a child being born large, becoming obese in later life and acquiring Diabetes, page 304
- A weight gain ≥ 9 kg if maternal BMI > 30 kg/m^2 **or** smoking during pregnancy predisposes babies to overweight and obesity as adults
- Small for gestational age babies are at risk of obesity

Referral [1,2]

- Refer to paediatric services if:
  - management has been unsuccessful
  - medicines are being considered for a child
  - a very-low-calorie diet or lifestyle modifications have been unsuccessful achieving healthy weight

1. What is overweight or obesity in children?

- As per Overweight and obesity (adult), page 366

2. Diagnosis of overweight or obesity in children [1,2,7]

- Identified by routine Child health checks, page 64
- BMI and waist-to-height for age measurements is used to support a diagnosis in children > 2 years
- Assessment and monitoring is undertaken using:
  - WHO growth and BMI-for-age charts for < 2 years. See Resource 1.
  - US-CDC **or** WHO growth and BMI-for-age charts for 2–18 years
  - waist-to-height ratio by dividing waist circumference by height in centimetres (cm)
- In children 2–18 years a diagnosis of **overweight** is:
  - BMI ≥ 85th to < 95th centile
  - waist-to-height ratio 0.5–0.59
- In children 2–18 years a diagnosis of **obesity** is:
  - BMI ≥ 95th centile
  - waist-to-height ratio ≥ 0.6
- All children > 10 years of age with a BMI > 85th centile are assessed annually (see Special considerations (child), page 135) for the following comorbidities:

- pre-diabetes and diabetes
- dyslipidaemia
- pre-hypertension and hypertension
- polycystic ovary syndrome (PCOS)
- OSA
- social-emotional wellbeing
- non-alcoholic fatty liver disease (NAFLD)

3. Management of children who are overweight or obese [1,2,4,8–10]

- The goals of managing overweight and obesity is for children to avoid developing chronic conditions and to lead healthy active lives by:
  - encouraging parents to take responsibility for lifestyle changes of children especially if < 12 years of age
  - supporting Diet and nutrition, page 29 and Physical activity and sleep, page 34 family behaviours
  - focusing on weight maintenance rather than weight loss
  - promoting positive family lifestyle behaviours

Children who are obese between 2–6 years of age are at high risk of obesity in adolescence. Support families early to achieve healthy behaviours for life long healthy growth and development

3.1 Support child self-management [1,2,5]

- Build a therapeutic partnership with the family to support children live healthily by modelling healthy behaviours. See Engaging our patients, page 19
- Ensure ongoing management by single health professional as an adolescent transitions from paediatric to adult health services
- Provide resources and discuss the positive effects of Diet and nutrition, page 29 and Physical activity and sleep, page 34 on weight control. See Resource 2–5.
- Discuss the risks associated with developing chronic conditions in adulthood

3.2 Social-emotional support [1,2,5]

- Overweight and obesity is a sensitive topic, particularly if a child experiences teasing or bullying. Consider:
  - asking permission to discuss child's weight
  - using neutral words e.g. unhealthy weight vs fat or obese
- Refer to the child and youth mental health team, psychologist or social worker for disordered eating, poor body image, low self-esteem, depression and anxiety, weight-related bullying or family barriers to healthy lifestyle behaviours
- See Social-emotional wellbeing, page 58

3.3 Lifestyle plan [1]

- Weight loss is not recommended for most children and should be limited to post-pubertal adolescents who are assessed as obese
- Involve the child and parent to develop a lifestyle plan to:
  - develop goals focusing on family behaviours and ways to manage hunger
  - maintain weight and grow toward a healthy BMI without weight loss
  - monitor and record BMI, waist circumference and waist-to-height ratio. See Resource 3.

- Review progress and goals frequently so:
  - waist circumference, weight and BMI are stable or trending toward healthy ranges
  - weight-to-height ratio is approaching < 0.5
  - family diet and physical activity habits are improving
  - the effects of goals on family function and relationships are positive
- Refer to social worker, psychologist or mental health team if:
  - changes to lifestyle behaviours are unsuccessful
  - social-emotional issues have developed
  - complex family problems impede dietary behaviours e.g. food insecurity
  - parents feel unable to influence the child's eating or sedentary behaviours

3.4 Diet and nutrition [1,2,4,5,7,8]

- Infants, children and adolescents need sufficient Diet and nutrition, page 29 to maintain consistent growth and development
- When discussing dietary approaches to a lifestyle plan consider:
  - a whole of family approach to role modelling nutrition and exercise
  - dietary preferences of the child and family
  - the availability, affordability and ability to store healthy foods (food security)
  - maintaining regular meals in a social family environment
  - separating mealtimes from screen based activities
  - discussing internal hunger cues and eating to appetite
  - avoiding restricting or controlling the child's food intake
  - strategies to encourage eating. See Poor growth (child), page 398
  - introducing the traffic light food system (Resource 6.):
    - green foods eaten always and often e.g. fruit, veg, meat, water
    - amber foods eaten sometimes e.g. full fat dairy, added sugar cereals
    - red foods eaten rarely or never e.g. fast food, soft drinks, donuts
  - identifying non-food treats or rewards for children:
    - swimming or fishing
    - park visits
    - cuddles and affection
    - listening and talking
    - reading and attention
- Provide Diet and nutrition, page 29 related Resources 2–5.

3.5 Physical activity [1,2,5,9,10]

- When discussing Physical activity and sleep, page 34 approaches to a lifestyle plan, encourage family to:
  - move more and be active with children
  - get involved in local activities i.e. park, fishing, walking, camping, footy
  - role model physical activity themselves
  - support children to make daily routines active e.g. walking to school

3.6 Surgery [1,2,5]

- Not recommended in children or young people unless exceptional circumstances

where lifestyle modifications have been unsuccessful achieving healthy weight

4. Medicines for children who are overweight or obese [1]

- Not recommended in children < 12 years unless severe comorbidities are present and lifestyle modifications alone have failed
- Only provided with specialist consultation and with multidisciplinary support

5. Cycle of care

Cycle of care summary for children who are overweight or obese

Action	Dx	Ongoing
Height	✓	
Weight	✓	Mthly for 3 mths then 3 mthly
BMI	✓	
Waist circumference	✓	
Blood pressure	✓	If > 10 years of age with a BMI > 85th centile then 12 annually See Special considerations (child), page 135
Lipids	✓	
Fasting blood glucose or HbA1c	✓	
Alanine transaminase (ALT)	✓	
Polycystic ovary syndrome (PCOS)	✓	
Obstructive sleep apnoea (OSA)	✓	
Lifestyle plan	✓	Each visit particularly Diet and nutrition, page 29 and Physical activity and sleep, page 34
Behavioural change	✓	
Self-management support	✓	
Lifestyle modification	✓	
Social-emotional wellbeing	✓	
Influenza and pneumococcal vaccine	Recommended. See the *Australian Immunisation Handbook* for schedule	
Dietitian	✓	Wkly for 1 month then 3 mthly
RN/HW review	✓	Each visit
MO/NP review	✓	3 mthly then annually

6. References

- All Chronic Conditions Manual references are available on the Office of Rural and Remote Health website

7. Resources

1. The WHO Child growth standards charts and US-CDC growth charts
2. Fats, oils and heart health
3. National Heart foundation Nutrition Position Statements
4. The Australian Dietary Guidelines
5. The Queensland Government Staying healthy diet and nutrition resources
6. The National Healthy School Canteens Guideline

Palliative care

Information [1,2]

- Direct exposure to people who are dying is common in Aboriginal and Torres Strait Islander and rural and remote communities
- Many people, including clinicians, find discussing or caring for someone dying, uncomfortable and confronting
- Palliative care relies on the wishes and consent of the patient and significant others (includes family, children, next of kin, spouse, carers and friends). See Advance Care Planning, page 141
- The aim for patients who wish to be cared for and die at home is timely recognition and appropriate management to prevent hospital admissions

Support for the rural and remote setting

- Phone 1300 725537 - 24/7 doctor, nurse practitioner, pharmacist advice hotline
- Phone 1300 725527 - 24/7 nurse and allied health advice hotline
- SPaRTa (Specialist Palliative Care Rural Telehealth Service) for patients and their family
- ePPCS (Telehealth Paediatric Palliative Care Service)
- Ordering caring@home packages for in home support
- Palliative and end-of-life care Framework–last 12 months of life
- palliMEDS App to manage emergent or terminal symptoms

1. What is palliative care? [1,2]

- The actions that relieve suffering and improve the quality of life of a patient with a life-limiting illness and their family
- A patient receiving palliative care can be viewed as someone being close to dying, however it also supports those not imminently dying

Table 1. General principles of palliative care [2]

• Regards dying as a normal process
• Neither hastens nor postpones death
• Optimises the quality of remaining life
• Respects a patients psychological and spiritual needs
• Supports patients to live as actively as possible until death
• Supports a patients family in their own bereavement
• Positively influences the course of life-limiting illnesses
• Respects the wishes of the patient
• Reduces physical suffering and emotional distress
• Minimises the impact of the progressing illness
• Maximises patient function, symptom relief and comfort
• Tailors and adapts interventions to the changing needs of the patient and their family as death approaches
• Provides relief from pain and other distressing symptoms

2. Determining when palliative care begins [2]

- Begins once someone is diagnosed with a life-limiting illness
- Some patients may be in good health for years before deteriorating and will still benefit from care, especially emotional support
- Not all patients want palliative intervention, however it should be offered and provided to significant others

3. Management of those receiving palliative care [1–3]

- Palliative care relies on the partnership between the patient, significant others, a multidisciplinary team and the Palliative Care Team. See Resources 1–4.

3.1 Social-emotional support for patient and significant others [1–4]

- Acknowledging the patients life-limiting illness openly and sensitively can provide validation and relief for the patient and family. This includes:
  - clarifying the progression of the illness and the patient's death
  - the prospect of a 3.22 catastrophic terminal event and what it entails
  - a change in personality or delirium close to dying
  - loss, bereavement and distress. Consider referral to psychologist, social worker, Palliative Care Service, counsellor or spiritual leader
  - listening and responding to worries and fears
  - using clear language. Avoiding jargon e.g. life-limiting illness vs cancer
  - allowing and listening to the patient and family speak or reminisce
- Be mindful that for many Aboriginal and Torres Strait Islander people, those from non-English speaking backgrounds and refugees:
  - certain family members will assume cultural leadership roles
  - English is often their second or third language
  - may be reluctant to acknowledge "bad news"
  - time is needed to discuss "bad news" to get understanding for all involved
  - cultural and spiritual beliefs about death and dying may conflict with Western explanations
  - the term 'passing' is more accepted when discussing death or dying due to spiritual beliefs around the life cycle
- Provide Resources 5. See Engaging our patients, page 19

3.2 Respecting the patient's wishes and concerns [1,2]

- Nothing is undertaken without the consent of a lucid patient
- Ensure Advance Care Planning, page 141 documents outline a patients last wishes, choices and medical interventions. They can:
  - be kept in the patients home to guide family and clinicians
  - include an Acute Resuscitation Plan to guide resuscitation management
  - be viewed, updated or altered via The Viewer using the ACP Tracker App
  - be enacted at a time when the patient does not have capacity to state their wishes or appropriate care. See Resource 6.

3.3 Talking to children [1,2]

- Adults sometimes believe that children need emotional protection and withhold the truth behind a loved one dying, which can cause fears of imagined events or not being able to grieve
- The following may be useful to families when talking with children:
  - follow the child's lead
  - provide truthful information about what is happening in an age-appropriate manner (generally concepts of death develops between 6–8 years)
  - allow questions to be asked, share their emotions, feelings and thoughts. Children might express their sadness with behaviours rather than words
  - provide clear, honest answers
  - acknowledge and validate their emotions. Family can normalise grief by sharing their own feelings
  - include them in visits, gatherings and the funeral
  - advise the school of the child's loss
- Refer to a social worker to provide detailed child communication and counselling support

3.4 Establish clear goals and boundaries [1–3]

- The patient, family, substitute decision-maker(s) and the clinical team are essential decision-making participants for end-of-life care
- Frequent group meetings ensures everyone has a clear understanding of the purpose and goals of any intervention

3.5 Home supports [2]

- Refer to physiotherapist to advise on patient mobility aids e.g. walking aids
- Refer to occupational therapist to advise on equipment and home modifications to aid safer activities of daily living for patients e.g. bathroom rails
- Allied health can educate on safe manual handling

3.6 Psychosocial, spiritual and cultural support [1,2]

- If they wish, listen to and allow the patient and family to:
  - say goodbye to people and places
  - forgive and be forgiven
  - express joy and gratitude
  - face regrets and accept death
  - share memories
  - request someone sit with them
  - access spiritual and cultural support
  - undertake cultural customs and practices
  - ask questions
- Being at the bedside can be a sign of support and caring
- Use respectful verbal and non-verbal communication. Use touch if appropriate
- Complex issues may require referral to a psychologist, social worker, counsellor or a local spiritual leader

3.7 Preparing for the last days of life [1,4]

- Review and discuss the patient's wishes and care using Advance Care Planning, page 141 if completed
- Document a **Care Plan** (Resource 4.) including where the patient would like to die and the support required. If at home consider:

- sufficient people are available and able to provide care (Table 2.), ensuring the primary carer has adequate sleep and breaks
- understanding 3.9 Recognising deterioration and the dying phase
- **supportive care equipment** is available at the bed head and tested daily. Include:
  - large combines
  - IV cannulation pack. Maintain IV patency
  - large bowl and wipes
  - incontinence pads
  - clinical waste bags
  - towels (ideally dark)
  - spare tracheostomy tube & 10 mL syringes if required
- what to do and who to contact when the patient dies (check local protocols)
- after hours and ongoing health service contacts

- Ensure patient and significant others understand the possibility of 3.10 Catastrophic terminal events
- The MO/NP will prescribe and review **crisis medicines** and educate significant others about their storage and use. Refer to the pharmacist for clarity or advice. See Resource 7.
- Considerations for Aboriginal and Torres Strait Islander families:
  - there may be large gatherings of immediate and extended family and friends as a mark of respect for the patient
  - consider flexible health centre visiting hours
  - interstate visitors and limited accommodation
  - family members may want to stay overnight with patient

3.8 Care of the dying patient

- See Table 2.

Table 2. Care of the actively dying patient [1,2]

State	Actions
Pain	• Reposition, pressure-relieving aids, hot or cold packs • Consider 4. Medicines
Restlessness and agitation	• Assess for reversible causes e.g. pain, dehydration, fever, breathlessness, urinary retention, faecal impaction • Reposition, minimise noise, room temperature, family touch • Consider 4. Medicines
Nausea and vomiting	• Consider 4. Medicines
Respiratory secretions	• Reposition into a semi-prone position • Consider 4. Medicines
Breathlessness	• Reposition or use fan • Consider low dose opioids. See 4. Medicines
Fever	• Cool sponges and use of fans • Consider antipyretics orally or rectally

Table 2. Care of the actively dying patient *(continued)* [1,2]	
Food and fluids	• Support to eat and drink for as long as tolerated • Consider thickened fluids • Monitor fluid intake and provide < 1 litre/day to minimise oedema • Monitor for aspiration and distress • If on IV hydration monitor for overload and patient distress
Skin care	• Assess frequently for rashes, skin breaks, discolouration, irritations or pressure injuries • Reposition, skin lotions, pressure mattresses, frequent linen changes for hygiene and continence care and wound care
Mouth care	• Assess frequently to ensure mouth is clean and moist • Use toothpaste, foam swabs, suction, chlorhexidine 0.2% mouth wash, oral moisture agents, anti-fungal drops, sterile water, lip lubricants, ice
Eye care	• Keep clean and moist by swabbing with saline or warm water
Bladder care	• Protect dignity, hygiene and skin integrity using pads, urinary catheters or penile sheaths • If no urine output for > 8 hours consider bladder scan
Bowel care	• Monitor for constipation or diarrhoea • Maintain dietary intake. Offer frequent smaller servings • Consider laxatives or anti-diarrhoeal agents
Environment	• Provide a comfortable environment according to patients wishes • Consider a single room, curtains and screens, space at the bedside, fragrances, silence or music, lighting, pictures and photographs

3.9 Recognising deterioration and the dying phase [1]

- A period of deterioration lasting a few hours or days usually precedes death, characterised by:
  - accelerated illness progression e.g. increased weight loss, worsening symptoms
  - progressive fatigue and loss of strength
  - longer periods of sleeping, totally bed-bound and requiring 24 hour care
  - loss of interest in food, decreased fluid intake or unable to swallow
  - confusion, delirium or mood change
  - minimal response to verbal or physical stimuli, unconsciousness but likely to hear what is happening around them
  - reduced or absent urine output
  - Cheyne-Stokes breathing pattern e.g. slow, irregular, 'rattling', starts and stops
  - peripheral shutdown e.g. skin pale, mottled, cold, cyanosed (in last few hours)
- Encourage significant others to communicate at this time with speech and touch
- Always be guided by Advance Care Planning, page 141 documents. See Resource 6.
- Consider deactivating implanted cardioverter defibrillators (ICDs). See Resource 8

3.10 Catastrophic terminal event [4,5]

- Can be unpredictable, confronting and traumatic to witness
- Death occurs within minutes from massive haemorrhage or airway obstruction
- Occurs mostly with advanced cancer disorders, including:
  - head, neck or haematological cancer
  - cancers close to major arteries or bleeding disorders
  - bone marrow failure (platelets < 15)
  - wound infection, poor healing or recent radiotherapy at tumour site
- **During the event**, at least one clinician remains with the patient and significant others to provide **supportive measures** to minimise the discomfort and distress of the patient, by:
  - a calm and reassuring presence (priority)
  - using **supportive care equipment** to facilitate patient comfort (priority)
  - administer **crisis medicines.** See Table 2.

3.11 Time of and after patient has died [1–3]

- Always seek direction from the Aboriginal and Torres Strait Islander Health Worker or family
- Considerations for clinicians in rural and remote locations:
  - loud mourning may occur when the patient dies
  - family may wish to wash and lay out the deceased with or without the health staff. Family may not want staff to be present during cultural duties
  - family may need to have the deceased at home for some time. Turn air conditioner on high and position deceased flat in bed with arms straight by side
  - liaise with the family a time to transfer the body to the clinic/hospital morgue
  - it is culturally **inappropriate for non-Indigenous** health staff to inform community members or significant others of a patient's death; this is the role of family members
  - in some Aboriginal and Torres Strait Islander communities it causes great offence to mention, write, show or broadcast the name, image or voice of a deceased person without permission
  - community services and businesses may shut
  - a smoking ceremony may be conducted by a spiritual leader of the deceased patient's belongings, their room or home; this may include the health facility
- Ensure everyone is offered support and counselling, including clinical staff

3.12 Clinical staff responsibilities after patient dies [1,2,4]

- The death of a patient can be lawfully verified and a **Life Extinct form** (Resource 1 or 9.) completed by Medical Practitioner, Registered Nurse, Paramedic or Police Officer. A physical assessment confirms a person is deceased by:
  - no palpable carotid pulse
  - no heart sounds for 30 seconds
  - no breath sounds for 30 seconds
  - fixed dilated pupils
  - no response to centralised stimuli
  - no motor (withdrawal) response or facial grimace response to painful stimuli
- A medical officer must complete a **Cause of death medical certificate** within 2 days

of a death. See Resource 10.
- Discuss any post-mortem investigation or coronial inquest results with family

3.13 Voluntary Assisted Dying (VAD) [7]

- In Queensland, VAD is an option for patients who meet the following criteria:
  - have an illness or medical condition that is:
    - advanced, progressive and will cause death
    - expected to cause death within 12 months
    - causing suffering considered by the patient to be intolerable
  - have decision-making capacity, that is:
    - understand the nature and effect of decisions about access to VAD
    - freely and voluntarily make decisions about access to VAD
    - communicate decisions about access to VAD in some way
  - be making the decision voluntarily and without coercion
  - be aged 18 years or older
  - meet residency and citizenship requirements:
    - all steps must occur in Queensland for the protections under the Act to apply
- If a clinician believes a patient meets the above criteria refer to QVAD-Support for further clarity. See Resource 11.
- Clinicians who conscientiously object to participating in VAD are legally obliged to:
  - refer a patient requesting information to a VAD practitioner or QVAD-support
  - not obstruct a patient from accessing VAD information or services
  - not coerce a patient for or against VAD

4. Medicines for palliative care [1,2,9,10]

- **Support cultural practices that involve using traditional medicines**
- Review medicines used to manage comorbidities as the life-limiting illness progresses, while minimising any burdens or harms:
  - alter administration to the least invasive route e.g. subcut vs orally
  - anticipate medicines required at home for common symptoms e.g. pain, respiratory secretions and agitation
- Should an authorised prescriber elect to initiate medicinal cannabis, exhaust standard palliative treatments first. See Resource 12.
- As the patient's condition deteriorates in the last days to weeks of life, consider withdrawing medicines unrequired for symptom relief
- Seek specialist palliative care advice from PallConsult (Resource 1.) if:
  - > 3 medicines are required in the same infusion
  - symptom management is problematic despite optimal medicine doses
  - patient is not responding to opioid therapy after > 3 consecutive hourly doses or > 6 doses in a 24 hour period
- See Resource 7. for further palliative care medicines use
- For non-pharmacological, non-opioid or adjuvant analgesics for palliative care, see Persistent pain, page 387

Table 3. Medicine management of symptoms in the dying patient [4,7,8,10]

Crisis medicines administration

- Midazolam is preferred for catastrophic haemorrhage. Individualise to benzodiazepine tolerance, the elderly, frail or low weight
- Morphine can help with airway obstruction discomfort; not usually indicated for haemorrhage alone unless the episode is prolonged or associated with pain or dyspnoea

- **Midazolam** 10 mg subcut or 10 mg IV, repeated after 15 mins. if necessary
- **Morphine** 10 mg subcut or 5 mg IV, repeated after 15 mins. if necessary

Agitation and restlessness (initial)

- Adjust as needed. Review response after 3 doses

In patients not taking benzodiazepines:

- **Clonazepam** 0.2 to 0.5mg subling or subcut, 2-hrly prn (to max. 4 mg/24 hours) **OR**
- **Midazolam** 2.5mg subcut, 1-hrly prn (to max. 60 mg/24 hours) **OR**

In patients not taking anti-emetics, haloperidol or another antipsychotic:

- **Haloperidol** 0.5–1 mg subcut, 4-hrly prn (to max. 5 mg/24 hours)

Agitation and restlessness (ongoing)

- For ongoing agitation or > 3 doses above are required in 24 hours

- **Clonazepam** (to max. 4 mg/24 hours)
  - 0.2–0.5 mg subling or subcut, 12-hrly, **and** 0.2–0.5 mg 2-hrly prn **OR**
  - 0.5–1 mg/24 hours continuous subcut infusion, **and** 0.2–0.5 mg subling or subcut, 2-hrly prn **OR**
- **Haloperidol** (to max. 5 mg/24 hours)
  - 0.5–1 mg subcut, 12-hrly prn **and** 0.5–1 mg 4-hrly prn **OR**
  - 1–2.5 mg/24 hours continuous subcut infusion, **and** 0.5–1 mg subcut 4-hrly prn **OR**
- **Midazolam** 10–20 mg/24 hours continuous subcut infusion, **and** 2.5 mg subcut 1-hrly prn (to max. 60 mg/24 hours)

Pain (initial)

- Lower starting dose for older or frail patients and higher for younger or larger patients

In patients not taking opioids:

- **Fentanyl** 25–50 microgs subcut, 1-hrly prn **OR**
- **Morphine** 2.5–5 mg subcut, 1-hrly prn **OR**
- **HYDROmorphone (ALERT: Not morphine)** 0.5–1 mg subcut, 1-hrly prn

Pain (ongoing)

- If patient requires > 3 doses above in 24 hours
- Monitor response and adjust dose and frequency as needed
- Review if patient requires > 3 consecutive doses or > 6 doses in 24 hours

In patients not taking opioids:

- **Fentanyl** 150–225 microgs/24 hours continuous subcut infusion, **and** 25–50 microgs, 1-hrly prn for breakthrough pain **OR**
- **Morphine**
  - 2.5–5 mg subcut, 4-hrly **and** 2.5–5 mg subcut, 1-hrly prn for breakthrough pain **OR**
  - 10–15 mg/24 hrs continuous subcut infusion, **and** 2.5–5 mg subcut, 1-hrly prn for breakthrough pain **OR**
- **HYDROmorphone (ALERT: Not morphine)**
  - 0.5–1 mg subcut, 4–hrly prn **and** 0.5–1 mg subcut, 1-hrly prn for breakthrough pain **OR**
  - 2–3 mg/24 hours continuous subcut infusion, **and** 0.5–1 mg subcut 1-hrly prn for breakthrough pain

Table 3. Medicine management of symptoms in the dying patient *(continued)* [4,7,8,10]

Distressing breathlessness (initial)

If not taking benzodiazepine:
- **Clonazepam** 0.2 to 0.5mg subling or subcut, 2-hrly prn (to max. 4 mg/24 hours) **OR**
- **Midazolam** 2.5mg subcut, 1-hrly prn (to max. 60 mg/24 hours) **OR**

If not taking opioids:
- **Fentanyl** 25–50 microgs subcut, 1-hrly prn
- **Morphine** 1–2.5 mg subcut, 1-hrly prn
- **HYDROmorphone (ALERT: Not morphine)** 0.25–0.5 mg subcut, 1-hrly prn

Distressing breathlessness (ongoing)
- For ongoing distressing breathlessness or if > 3 doses above are required in 24 hours
- Monitor response and adjust dose as needed

- **Clonazepam** (to max. 4 mg/24 hours)
  - 0.2–0.5 mg subling or subcut, 12-hrly prn **and** 0.2–0.5 mg subling or subcut, 2-hrly prn
  - 0.5–1 mg/ 24 hours continuous subcut infusion **and** 0.2–0.5 mg subling or subcut, 2-hrly prn **OR**
- **Midazolam** 10–20 mg/24 hours continuous subcut infusion, **and** 2.5 mg subcut hrly prn (to max. 60 mg/24 hours)

If not taking morphine:
- **Fentanyl** 75–150 microgs/24 hrs by continuous subcut infusion **and** 25–50 microgs, hrly prn for breakthrough pain **OR**
- **Morphine**
  - 1–2.5 mg subcut, 4-hrly, **and** 1–2.5 mg subcut, 1-hrly prn **OR**
  - 5–10 mg/24 hours continuous subcut infusion, **and** 1–2.5 mg subcut, 1-hrly prn **OR**
- **HYDROmorphone (ALERT: Not morphine)**
  - 0.25–0.5 mg subcut, 4–hrly prn, **and** 0.25–0.5 mg subcut, 1-hrly prn for breakthrough pain **OR**
  - 1–2 mg/24 hours continuous subcut infusion, **and** 0.25–0.5 mg subcut, 1-hrly prn for breakthrough pain

Nausea and vomiting (initial)
- Do not use metoclopramide with bowel obstruction
- Monitor response and adjust dose as needed

In patients not taking antiemetics:
- **Metoclopramide** 10 mg subcut, 8-hrly prn (to max. 30 mg/24 hours) **OR**

In patients not taking anti-emetics, haloperidol or another antipsychotic:
- **Haloperidol** 0.5–1 mg subcut, 4-hrly prn (to max. 5 mg/24 hours)

Nausea and vomiting (ongoing)
- For ongoing nausea or vomiting or > 3 doses above are required in 24 hours

Metoclopramide (to max. 30 mg/24 hours)
- 10 mg subcut, 8 hrly, **and** 10 mg, 4-hrly prn **OR**
- 30 mg/24 hours continuous subcut infusion, **and** 10 mg subcut, 4-hrly prn **OR**

Haloperidol (to max. 5 mg/24 hours)
- 0.5–1 mg subcut, 12-hrly, **and** 0.5–1 mg 4-hrly prn **OR**
- 1–2.5 mg/24 hours continuous subcut infusion, **and** 0.5–1 mg subcut, 4-hrly prn

Respiratory tract secretions (initial)
- Cease after 12–24 hours if no improvement or drug causes unwanted adverse effects
- Monitor response and adjust dose as needed

Hyoscine butylbromide 20 mg subcut, 2-hrly prn (to max. 120 mg in 24 hours)

Table 3. Medicine management of symptoms in the dying patient *(continued)* [4,7,8,10]
Respiratory tract secretions (ongoing) • Consider regular therapy if the patient has responded to above
Hyoscine butylbromide (to max. 120 mg/24 hours) • 20 mg subcut, 4-hrly **OR** • 60–80 mg/24 hours (initially) continuous subcut infusion, increasing as necessary
Seizure • For non self-limiting seizure
Clonazepam 1 mg IV, subling or subcut, every 10 mins prn (to max. 4 mg/24 hours) **OR**
Midazolam 5–10 mg IM, every 10 mins prn **OR** 5 mg IV, every 10 mins prn **OR** 10 mg subcut, every 10 mins prn (to max. 20 mg/24 hours)
Multifocal myoclonus (twitching or jerking of muscles) • Associated with opioid use • Can be used for 2–3 days until reduced opioid dose improves symptoms
Clonazepam 0.5–1 mg PO, subling or subcut, once a day or bd (to max. 4 mg/24 hours)
Midazolam 2.5–5 mg subcut as a single dose **OR** 5–10 mg/24 hours continuous subcut infusion (to a max. 20 mg/24 hours prn)

5. Cycle of care

Cycle of care summary for those receiving palliative care

Action	Dx	Review frequency
Patient and significant other dying process education, preparation, crisis medication education, SEWB	✓	Assess at each visit or contact
Pain	✓	
Restlessness and agitation (delirium)	✓	
Distress related to respiratory secretions	✓	
Nausea and vomiting	✓	
Distress related to breathlessness	✓	
Urinary output	✓	
Bowels	✓	
Comfort and safety	✓	
Fluids	✓	
Moist and clean mouth	✓	
Skin integrity	✓	
Patient hygiene	✓	
Psychological and spiritual wellbeing	✓	
Medicine review	✓	

6. References

- All Chronic Conditions Manual references are available on the Office of Rural and Remote Health website

7. Resources

1. PallConsult: Support for rural and remote clinicians delivering end-of-life care
2. Palliative care resources for care of Aboriginal and Torres Strait Islander people
3. Queensland Palliative Care resources for clinicians
4. Care Plan for the Dying Patient: Health professional guidelines
5. Palliative Care Australia resources for patients, carers and health professionals
6. ACP Tracker or Acute Resuscitation Plan or at PallConsult
7. PallConsult palliative care medicines in the home support
8. Heart Failure: End-stage management guideline
9. Life extinct form or at PallConsult
10. Cause of death medical certificates
11. Queensland Health Voluntary assisted dying explained or Queensland voluntary assisted dying support service (QVAD-Support) Ph. 1800 431 371
12. Therapeutic Goods Administration Medicinal cannabis hub

Persistent pain

Recommendations [1–4]

- Nearly 20% of Australians suffer from persistent pain, primarily > 65 years old
- Pain is a personal experience, occurring when and where the patient states

Urgent

- For acute pain see the *Primary Clinical Care Manual*
- Persistent pain not responding to intervention may indicate serious underlying pathology; investigate and refer to Persistent pain services (Resource 1.)

1. What is Persistent pain? [1,3,4]

- An ongoing unpleasant sensory and emotional experience not always related to tissue damage
- Pain persists because of ongoing neurological system changes. With multidisciplinary treatment these changes can be reversed with time
- Causes may include:
  - ongoing pathology related to chronic conditions
  - cancer or non-cancer origins
  - an acute originating event that is no longer active
  - no easily recognised pathology
- May lead to life altering physical and psychosocial consequences including:
  - de-conditioning and changes to posture and psyche
  - poor sleep hygiene
  - altered appetite
  - unhealthy behaviours and thoughts
  - depression and anxiety
  - social exclusion
  - reduced confidence
  - drug dependence
  - risk taking
  - family, colleagues and community disconnection due to stigma

Table 1. Factors influencing a persons perception of pain [1,3,4]

Factor	Examples
Altered mood	• Depression • Anxiety • Delirium • Uncertainty • Anger • Guilt
Past pain experiences	• Childhood experiences • Parenting • Social media • Social stigma • Fearful events
Symptoms	• Fatigue from insomnia • Persistent nausea from treatment
Culture	• Language • Communication • Religion • Spirituality • Beliefs • Community
Response	• Active • Passive
Social	• Health system • Family and family expectations • Work and income • Friendships and personal relationships

2. Diagnosing persistent pain [1,3,4]

- A patient's pain needs to be accurately evaluated to provide the best outcomes

Listen to and believe the patient's description of their pain and the experience and meaning they ascribe to it

- Thorough assessment and baseline measurements of pain and function ensures treatment responses are monitored and interventions tailored. Assessment includes:
  - the cause, its nature, location, timing and onset
  - the radiation or if it moves about
  - the quality or how the patient describes the pain
  - the severity using a pain scale. See Resource 2.
  - aggravating and relieving factors
  - the impact on the patient
  - factors influencing the person's perception of pain. See Table 1.
  - diagnosed chronic condition symptoms and disease processes
  - the presence of Red Flags e.g. weight loss, history of malignancy, urinary retention, incontinence, sexual dysfunction, night pain or sweats, IV drug use
  - any abnormal response to stimuli
  - drug related pain
  - cognition. See Cognition and recall, page 156
  - a systems and neurological examination. See Table 2.
- Terms to describe pain include:
  - **allodynia**: pain in response to non-painful stimuli e.g. cuddling
  - **hyperalgesia**: hyper-response to stimuli e.g. pinprick or pressure
  - **hyperpathia**: increased severity in response to repetitive stimulus e.g. poking

Table 2. Types of pain [1]

Type	Description
Nociceptive pain	• Actual or threatened damage to non-neural tissue • Due to activation of sensitive receptors superficially (e.g. skin) or deep tissues (e.g. body organ, bone)
Neuropathic pain	• Caused by a lesion or disease of the nervous system
Breakthrough pain	• The pain experienced between regular doses of an analgesic • Can be an occasional natural fluctuation • Regularity indicates inadequate analgesia and management
Incident pain	• Incident pain occurs with or is exacerbated by: – physical activity – an event i.e. wound care – coughing

3. Management of persistent pain [1,3,4]

- The goal of managing persistent pain is to improve a patients quality of life by encouraging and supporting them to:
  - be as independent as is feasible and safe
  - participate in leisure and productive activities
  - re-engage in family and community roles
  - return to driving (if appropriate)
  - access the wider community
  - maintain quality relationships with significant others
- Prior to managing persistent pain review current or previous:
  - pain management strategies
  - dosage, choice and efficacy of medicines
- Consult Persistent pain management services for treatment and management advice for complex persistent pain patients. See Resource 1.

3.1 Support patient self-management [1–4]

- Discuss early warning signs for onset of pain and what to do i.e. enact treatment plan (below)
- Encourage effective **active** management strategies (e.g. physical activity, social connection, nutrition) over **passive** techniques (e.g. analgesics, massage). 66% of people take medicines without active management strategies
- Engaging our patients, page 19 to identify barriers to adequate lifestyle modification and clinical adherence and develop goals to overcome those barriers
- Provide persistent pain resources. See Resource 3.
- Consult Persistent pain management services who help support patients with self-management techniques. See Resource 1.

3.2 Social-emotional support [1–4]

- Altered Social-emotional wellbeing, page 58 and social isolation is common with persistent pain
- Maintaining social links improves feelings of worth and belonging and benefits pain reduction
- Support patient to:
  - join and maintain a local or online pain support group
  - maintain or return to employment
  - volunteer in community group activities

3.3 Social, spiritual and cultural support [1]

- Aboriginal and Torres Strait Islander Health Worker should engage and support the patient in the first instance
- For complex issues refer to a psychologist, social worker, counsellor or other members of the multidisciplinary team
- For cultural support refer to liaison officer, spiritual or traditional healer

3.4 Develop a management plan [1–4]

- Develop a plan (Resource 4.) with patient and significant others by exploring:

- understanding their pain e.g. recognising onset of pain
- monitoring their pain. See Resource 5.
- any unhelpful beliefs
- implementation of management strategies e.g. exercise, medicines, diet
- expectations and goals of strategies
- support people
- response to interventions to determine if other treatments can be offered
- what actions to take when pain occurs
- when to seek medical support

3.5 Physical activity [1,3–5]

- Physical activity and sleep, page 34 is a first-line management strategy for persistent pain
- It can reverse or halt significant de-conditioning, improve mood and functioning, and reduce the impact and severity of pain
- Strengthening and flexibility exercises can reduce pain in some conditions e.g. osteoarthritis and long-standing spinal pain
- Long-term physical activity combined with psychotherapy can improve function, conditioning and quality of life

3.6 Psychotherapy [3,4,6]

- Considered a first-line (often primary) pain management strategy e.g. cognitive behaviour therapy (CBT) and interpersonal psychotherapy (IPT)
- Associated with improved treatment adherence, function, quality of life and reduced analgesic use, distress and disability
- All clinicians can provide basic techniques e.g. active listening, reassurance and clarifying intervention goals and expectations. See Engaging our patients, page 19
- Formal psychotherapy:
  - supports patients to identify and challenge unhelpful thoughts, emotions and behaviours to pain, and replace them with more realistic thoughts
  - requires considerable commitment by the person with pain
  - is facilitated by a social worker, mental health worker or psychologist
- Unhelpful responses to pain include:
  - a tendency to engage in catastrophic thoughts e.g. “this pain is killing me”
  - over activity on less painful days
  - followed by catastrophic thoughts when pain persists again
- Patients identify goals to defuse unhelpful thoughts of helplessness by:
  - problem solving
  - moderating activity levels and taking regular breaks
  - alternating activities
  - reducing reliance on analgesics or clinicians to resolve the pain for them

3.7 Obstructive sleep apnoea (OSA) [1]

- Improving sleep hygiene reduces nervous system stimulation and pain by:
  - reducing screen time and caffeine intake
  - consistent bedtime routines
  - weight loss
  - CPAP therapy
- Assess a patient's daytime sleepiness and OSA risk by using a validated tool. If they score highly refer to a sleep specialist. See Resource 6.

3.8 Thermotherapy [1]

- Heat and cold packs can reduce pain by changing blood flow and nerve conduction and providing distraction and relaxation
- Used as an adjunct therapy to active strategies

3.9 Massage [1,4]

- Passive movement of soft tissue can be effective for chronic lower back pain
- Used as an adjunct therapy to active strategies. See Resource 7.

3.10 Transcutaneous electrical nerve stimulation (TENS) [1]

- A portable low-voltage hyperstimulation device for chronic localised nociceptive and neuropathic pain. See Table 2.
- Enables the patient to perform activities while being used
- Taught to those unresponsive to other therapies by a physiotherapist
- Used as an adjunct therapy to active strategies

3.11 Passive movement [1]

- Reduces pain by improving awareness, control, efficient movement patterns and posture
- Involves physically moving a patient's body part:
  - passively by the clinician or
  - actively-assisted by the patient and clinician or
  - actively by the patient independently
- Used passively initially before progressing to Physical activity and sleep, page 34

3.12 Relaxation techniques [1]

- Can help some patients with pain and nausea. See Resource 7.
- Meditation and self-hypnosis requires frequent practice
- Applied whenever there is more pain than usual
- Has the advantage of being applied anytime, anywhere
- Audio direction can be helpful

3.13 Occupational therapy [1]

- A workplace and home assessment is undertaken and a patient's functional capacity evaluated to:
  - restore a patient's best level of daily activity and
  - maintain their function

- Patients can be taught ways to manage daily chores and tasks at home by:
  - task simplification
  - using suitable aids e.g. rails, walkers
  - changing how activities are normally performed

3.14 Carer support [1,3]

- Caring for a patient with persistent pain is a source of stress, burden and isolation
- Assess and address the needs of the carer. See Engaging our patients, page 19
- Involve carers in all service co-ordination and interventions including education, visiting specialists, and telehealth, telephone or online service provision
- Provide resources and refer to carer support services so carers can address their own needs. See Resources 8.
- Refer to respite services so carers can take a break. A refreshed carer enables patients to stay in their home longer. See Resource 9.

3.15 Opioid tolerance [7]

- Many patients who take long-term opioids will be **opioid-tolerant**, that is:
  - the effect of the drug decreases over time and
  - higher doses are needed to obtain the same analgesic effect
- Treating acute pain aims to provide effective analgesia while minimising tolerance and preventing withdrawal
- Under-estimating pain treatment in **opioid-tolerant** patients is common, causes withdrawal and can lead to mistrust of medical care

3.16 Opioid dependence [7]

- Opioid **dependence** is a normal physiological response to long-term opioid use associated with withdrawal symptoms during:
  - sudden reduction
  - cessation
  - drug reversal
- Withdrawal symptoms include:
  - agitation
  - sweating
  - musculoskeletal pain
  - abdominal cramps
  - diarrhoea
  - nausea and vomiting
  - seizures
  - constant goose bumps

3.17 Opioid-use disorder (addiction) [7]

- Opioid **addiction** differs from dependence in that it is associated with:
  - above withdrawal symptoms and
  - compulsive drug seeking and drug-taking behaviours for non-medical effects
- Seek early advice from Persistent pain management services (Resource 1.) when managing:
  - pregnant women
  - risk of tolerance, physical dependence or withdrawal
  - psychological and behavioural characteristics of addiction
  - poly-drug use e.g. alcohol, benzodiazepines, cannabis
  - use of withdrawal medicines e.g. methadone, buprenorphine, naltrexone

- signs of drug use e.g. organ impairment, infectious diseases

- Beware of drug diversion tactics; the unlawful channelling of regulated pharmaceuticals for illicit use. See Resources 10–11.

Contemptuous or disapproving attitudes toward patients with an addiction disorder is unethical, disrespectful and unhelpful. Clinicians should be mindful of their own beliefs and behaviours and treat all patients with care and respect

4. Medicines for persistent pain

- If the focus of treatment changes to palliation see Palliative care, page 376

4.1 Prescribing opioids [8,9]

- Opioids are indicated for the management of severe pain where:
  - other treatment options have failed, are contraindicated, not tolerated or are otherwise inappropriate to provide sufficient management of pain, **and**
  - the pain is opioid-responsive, **and**
  - requires daily, continuous, long term treatment
- Monitor to reduce misuse. See Resource 10.
- Queensland prescribers are required to check QScript (Resource 11.) before prescribing, dispensing or giving a treatment dose of a monitored medicine
- Develop an opioid contract (Resource 12.) with the patient to provide:
  - education about the medicine and possible effects
  - a clear agreement about the expectations of the treating clinician
  - agreed goals of the trial (e.g. improved pain and function)
  - a plan to wean and cease opioids if goals are not met

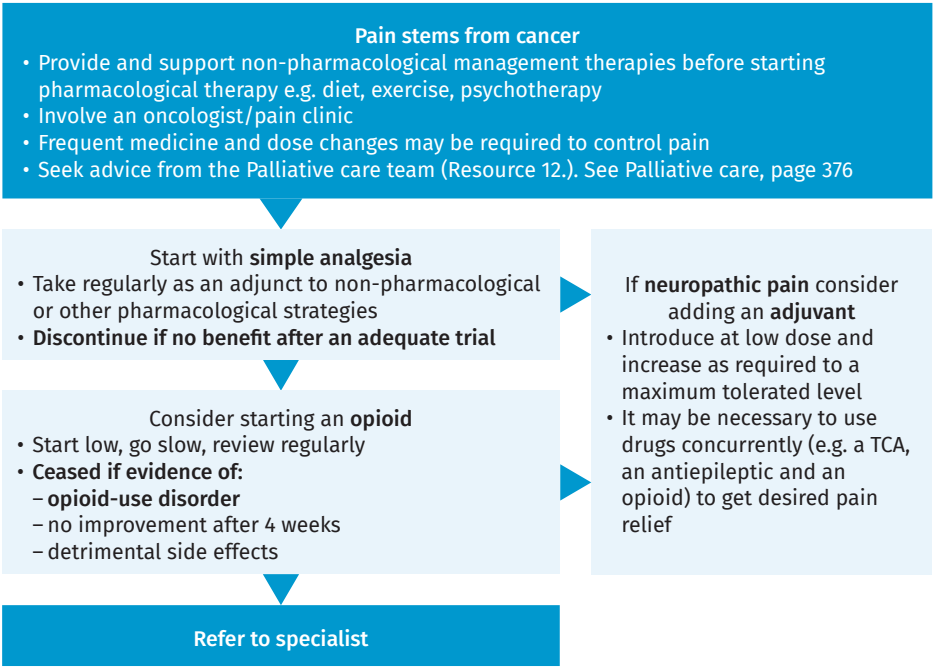
Table 3. Quality use of opioids

- One clinician should be responsible for prescribing
- Avoid introducing an opioid at the same time as another drug
- Start with a low dose and adjust slowly according to response
- Use lower doses in older people and monitor carefully
- Avoid the use of immediate-release or parenteral opioids
- Recommend laxatives at the commencement of treatment as needed
- Check for potential interactions with all patient medicines, drugs or other substances
- Avoid using benzodiazepines with opioids due to severe sedation and impaired cognition
- Avoid using opioids for breakthrough pain
- Regularly review improvement to patient quality of life and function or whether alteration to medicines is required
- Cease opioid slowly under supervision. Seek specialist advice if uncertain about the weaning procedure
- For regulatory requirements and resources for prescribing monitored medicines see Resource 13.

4.2 Cancer related pain [7,11]

- Includes cancer related pain, treatments or complications
- Cancer pain may require a rapid and timely escalation of pharmacological management with attention to the mechanism of pain
- See Flowchart 1. for cancer pain management

Flowchart 1. Cancer pain management [1,7,11]



4.3 Non-cancer related pain [7,10]

- Includes persistent pain related to e.g. trauma, back strain, osteoarthritis
- Improving function is the aim of managing persistent non-cancer pain. Medicines will only modify the pain moderately
- Non-pharmacological options should be employed before starting medicines
- Neuropathic pain, such as with diabetes or stroke, responds poorly to regular analgesics. Adjuvants can be more effective e.g. antidepressants, antiepileptics
- Regularly review medicine use to assess if quality of life and function is improving
- See Flowchart 2. for non-cancer pain management

Flowchart 2. Non-cancer pain management [1,7,10]

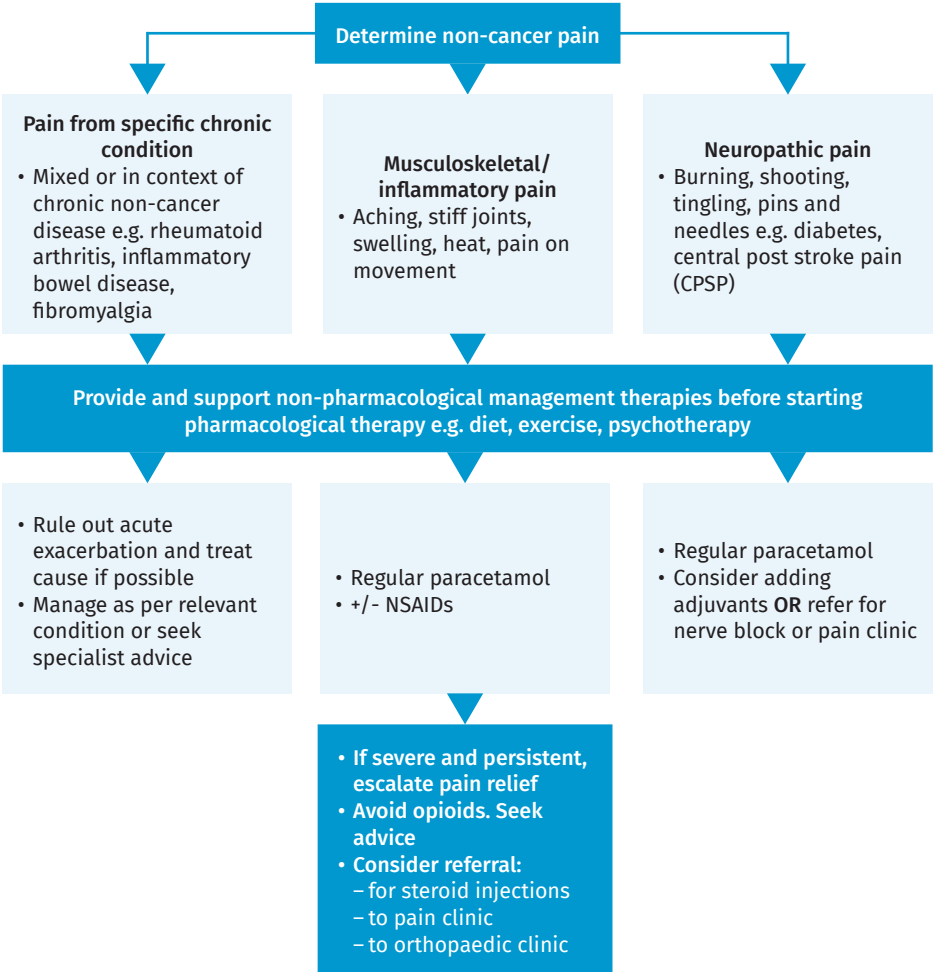


Table 4. Analgesics for persistent pain [7,10–12]

Simple analgesia

- Rarely relieves pain completely but can modify its severity. Discontinue if no benefit after an adequate trial
- Reduce dose in those with liver disease, are malnourished, small in size, or frail aged
- Use the lowest possible dose of NSAID for the shortest time possible. Continual daily use is not recommended
- Use NSAIDs with caution in frail aged, those with renal or hepatic impairment, history of peptic ulcer disease, hypertension or heart failure

Paracetamol 1g PO, 4–6 hrly (max. 4 g/day) **OR**

Paracetamol MR 1.33g PO 8-hrly

Ibuprofen 200–400 mg PO tds **OR**

Naproxen 250–500 mg PO bd

Opioids

- Side effects include respiratory depression, OSA, fluid retention, impaired cognition and coordination (i.e. falls and fractures), chronic constipation, nausea and vomiting, fluid retention, oedema, dependency and sedation
- **If an initial trial of an opioid is tolerated but ineffective, trialing another opioid is likely to be ineffective**

Tapentadol MR 50mg PO once a day to bd. Can increase every 3 days as necessary (max 300mg/day)

Tramadol MR 50mg PO once a day to bd. Can increase every 3 days (max 400mg/day)

Morphine oral MR 5–10 mg PO once a day to bd. Can increase every 3 days (max. 40 mg/day)

Oxycodone oral MR 5 mg PO once a day to bd. Can increase every 3 days (max. 30 mg/day)

Buprenorphine transdermal patch 5 microgs/hr. Can be increased every 7 days (max. 20 microgs/hr)

Table 5. Adjuvants for persistent neuropathic pain [13–17]

- These medicines have numerous side effects such as fatigue, sedation, dizziness, ataxia, tremor, diplopia, nystagmus, amblyopia, amnesia, abnormal thinking, hypertension, vasodilation, peripheral oedema, dry mouth, weight gain, rash, sweating, flushing, rash, muscle cramp, myalgia, arthralgia, urinary incontinence, dysuria, thrombocytopenia
- For further specific CMI see the Australian Medicines Handbook

Amitriptyline 10–25 mg PO nocte. Can increase every 7 days (max. 75–100 mg nocte)

Gabapentin 100–300 mg PO nocte. Can increase up to tds every 3–7 days (max. 3.6 g/day)

Pregabalin 25–75 mg PO nocte. Can increase up to bd every 2–3 days (to a max. 300 mg bd)

Duloxetine 30mg PO once a day. Can increase every 7 days to max. 120 mg once a day if tolerated

5. Cycle of care

Cycle of care summary for persistent pain

Action	Dx	Frequency
Blood pressure	✓	12 mthly or as condition indicates
BMI	✓	12 mthly or as condition indicates
Weight	✓	12 mthly or as condition indicates
Pulse rate	✓	12 mthly or as condition indicates
eGFR and ACR	✓	When commencing or altering medicines
Assess falls risk	✓	As patient situation changes
Patient education	✓	Each visit–to ensure co-therapies are being attended
Carer support	✓	Each visit
Lifestyle modification	✓	Each visit
Social-emotional wellbeing	✓	Each visit
Influenza, pneumococcal and covid vaccines	Recommended. See the *Australian Immunisation Handbook* for schedule	
Pain team/specialist/ oncologist	✓	As determined by team and specialist
HW/RN	✓	3 mthly
MO/NP	✓	6 mthly
Physiotherapist	✓	At the discretion of the physiotherapist
Occupational therapist	✓	At the discretion of the occupational therapist

6. References

- All Chronic Conditions Manual references are available at the Office of Rural and Remote Health website

7. Resources

1. North Queensland Persistent Pain Management Service or Persistent pain management services
2. Assessment of pain the FLACC pain scale, the Abbey pain scale for non-verbalising people, the Wong Baker FACES Pain rating scale for youth, and the Pain Assessment in Advanced Dementia Scale (PAINAD)
3. Persistent pain resources
4. Health management plan and patient resources
5. The PEG scale for monitoring pain
6. The Epworth Sleepiness Scale and STOP-Bang questionnaire
7. Managing your pain resource for patients
8. Carers Queensland
9. MyCare respite information
10. The Prescription Shopping Programme and National Real Time Prescription Monitoring (RTPM)
11. QScript
12. Opioid Patient Prescriber Agreement (PPA) or Opioid Treatment Agreement or Drugs of dependence therapy agreement template
13. Queensland regulatory requirements and resources for prescribing monitored medicines

Poor growth (child)

High risk groups [1]

- Low weight and preterm births
- Abnormalities or disability at birth
- Medical conditions. See Table 1.
- Ineffective feeding e.g. breast, artificial, feeding aversion
- Aboriginal and Torres Strait Islander children
- Socioeconomically disadvantaged
- Dysfunctional family homes e.g. domestic violence
- Maternal postnatal depression, anxiety or attachment issues
- Parental concerns

Considerations in pregnancy [2]

- Encourage healthy food and fluid intake to prevent poor fetal growth
- Avoid alcohol and cigarettes pre and postnatally

Urgent referral [1,3,4]

- Refer to the MO/NP, dietitian or social worker if:
  - suspected abuse or neglect e.g. persistent hunger, witnessed deliberate withholding of food or fluids, appears thin, frail or listless or frequently begs, steals or hoards food. See Child safety reporting, page 428
  - child fails to grow despite interventions. See 3.9 Growth monitoring
  - assessment suggests other pathology e.g. anaemia, urinary tract infection, parasites . See the *Primary Clinical Care Manual*
  - a carer is unable to provide adequate nutrition to a child

1. What is poor growth in children? [4]

- An imbalance of nutrients from poor dietary intake, negatively affecting physical growth and development over an extended period of time
- The causes of poor growth involves many complex factors. See Table 1.
- Children with poor early nutrition are at increased risk of:
  - stunting and faltering growth (failure to thrive)
  - poor or delayed cognitive, motor and social-emotional development
  - chronic conditions as adults
  - decreased capacity to learn
  - future unemployment
  - intergenerational consequences

Table 1. Causes of poor growth [4,5]

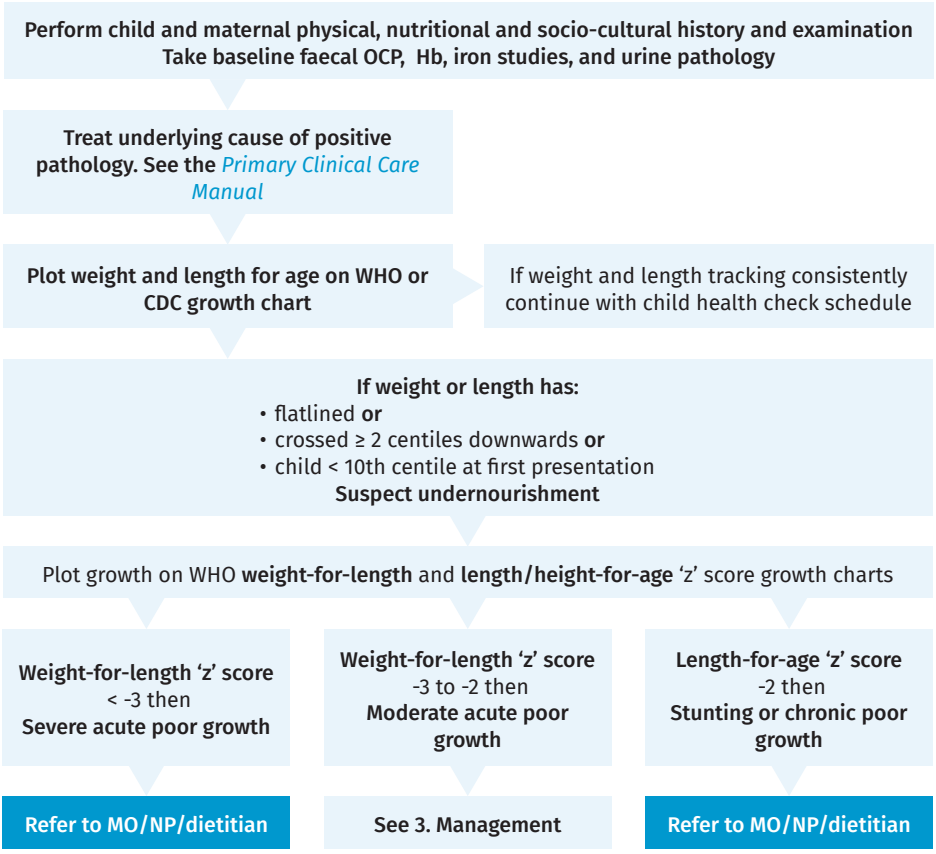
Causes		
Immediate	**Inadequate intake**	
	• Breastfeeding practices • Incorrectly prepared formula • Inadequate food • Oral hypersensitivity	• Delayed solids introduction • Poor suck-swallow coordination • Decreased appetite
	Medical conditions	
	• Increased needs related to neurological, cardiovascular or respiratory conditions • Persistent vomiting • Low birth weight • Growth hormone deficiency	• Malabsorption e.g. intestinal parasites, chronic diarrhoea, coeliac disease, cystic fibrosis • Fetal alcohol spectrum disorders • Intra-uterine growth restriction • Protein-losing enteropathy
Underlying	**Food insecurity**	
	• Competition for food • Resources to provide and store food • Access to safe water, sanitation	• Education level • Family planning practices
	Inadequate feeding practices	
	• Food prep hygiene e.g. bottles • Nutritionally poor food and drinks • Meal time distractions and lack of routine	• Decreased appetite from psychosocial neglect • Food refusal from coercive feeding
	Family environment	
	• Access to child health services • Unhealthy/unsafe or overcrowded housing • Hygiene practices	• Abuse or neglect • Family and domestic violence • Psychosocial issues e.g. mental ill-health, addictions, carer attitude to feeding
Peripheral	• Poverty, socioeconomic inequity • Poor cooking facilities	• Rural and remote location

2. Diagnosis of poor growth in children [1,4,5]

- Identified during a Child health checks, page 64 when assessing:
  - **a maternal history**: pregnancy and birth, maternal health, medical and family history, medicines use
  - **underlying causes of poor growth**. See Table 1.
  - **baseline pathology**: faecal OCP, Hb, iron studies, and urine
  - **child's physical examination and diet history:** gestational age, breastfeeding, formula feeding, solid introduction timing, type, variety and quantity of food, appetite, textures and regularity of food and drinks offered and consumed
  - **reviewing plotted growth trends** using the:
    - World Health Organisation (WHO) growth charts for children aged < 2 years
    - then continuing with the WHO growth charts for children aged ≥ 2 years or switching to the Centre for Disease Control (CDC) growth charts
- A diagnosis is suspected if:

  - a positive underlying cause or pathology is identified
  - the child's **weight-for-age centile** tracks in a flat line, crosses ≥ 2 centiles downwards, or is below the 3rd centile at first presentation. See Flowchart 1.
- Managing poor growth is determined by identifying **rate of growth** by plotting **weight-for-length** and **length-for-age** (standard deviation or 'z' scores) on the WHO z-score growth charts. See Resource 1.

Flowchart 1. Determining rate of poor growth and care pathway [1,5,6]



3. Management of poor growth in children

- The goal of managing children with poor growth is to establish a foundation for lifelong Diet and nutrition, page 29 to avoid growth related complications by:
  - building a therapeutic partnership with family
  - collaborating with the multidisciplinary health care team
  - identifying and addressing causes of the child's poor growth. See Table 1.
  - supporting early breastfeeding
  - using therapeutic supplements until appetite is restored

- reintroducing nutritious foods once appetite is restored

3.1 Supporting primary carer and family [1,5]

- Identify and address factors that impact on the primary caregiver such as:
  - poverty and domestic violence
  - limited household financial (resource) control
  - household workloads competing with child feeding practices
  - mental health e.g. depression
- Provide the family:
  - information about the child's poor growth, causes and management
  - weekly follow up until target growth is achieved
  - nutrition resources. See Diet and nutrition, page 29
- Encourage the family to identify barriers to adequate lifestyle modification and medical adherence and create goals to overcome those barriers. See Engaging our patients, page 19
- Engage the school to monitor and support the child's nutritional intake
- Acknowledge any family concerns and reassure them that provision of adequate nutrition will improve the condition
- Refer to a social worker who can provide strategies to assist caregiver needs

3.2 Breastfeeding [2,5]

- Reassure mums they are not at fault for their baby's faltering growth
- Encourage mums to breastfeed then express any milk not taken. Offer expressed breast milk as top ups before formula. Refer to child health nurse
- Supplementary formula feeding may increase weight gain but can result in cessation of breastfeeding
- Continue to support breastfeeding to > 6 months of age. See Resource 2.
- Good intake equates to weight and length gains and 5–7 wet nappies per day
- See Diet and nutrition, page 29

3.3 Formula feeding[2]

- Infant formula should be used < 12 months old if not being breastfed. See Diet and nutrition, page 29

3.4 Solids introduction [2]

- First foods are introduced around 6 months old, starting with iron fortified infant cereal and/or iron rich foods such as puréed meat or tofu, followed by foods from the five food groups
- Different tasting and textured foods are introduced as the baby grows
- Infants should consume a wide variety of nutritious foods enjoyed by the rest of the family by 12 months old
- See Diet and nutrition, page 29

3.5 Food [2]

- Small frequent serves of nutrient rich foods and snacks will restore appetite. See Table 2.
- Continue to provide supplements until target weight and length is achieved

- Substitute plain cow's milk for supplements

Table 2. Foods and preparation for child with poor growth

Supplements (consider before milk) (high protein)	
• Blend with frozen fruit, ice cream or yoghurt. Add honey or other natural flavourings • Blend with soups, puddings, custards, desserts or packet mixes	
Meat and meat alternatives (high protein)	
• Meat, chicken, fish or bush tucker meats • Baked beans, lentils, kidney beans and tofu	• For each main meal and snacks as appropriate
Cheese (high protein)	
• Serve on crackers/sandwiches • Grate onto vegetables • Add to rice or pasta	• Cut into small blocks as a snack • Cheese sauce added to meals/vegetables
Eggs (high protein)	
• Hardboiled for snacks or add to a salad plate • Mashed with mayonnaise for a sandwich or stirred in potato salad • An omelette or quiche with chopped meat, vegetables and cheese • Scrambled with cheese and butter. Eggs added to rice or noodle dishes	
Nuts and seeds (high protein) Whole nuts are a choking hazard for children < 3 years old	
• Peanut butter in preference to jam or Vegemite™ • Hummus or tahini as a dip or spread	• Serve whole roasted nuts as a snack if age appropriate • Use in baking e.g. almond meal
Avocado	
• Serve on crackers, toast or sandwiches • Blend into vegetable mixtures	• Add to salads • Guacamole dip
Small amounts of margarine and oil (essential fatty acids)	
• Added to vegetables, rice, soups or pasta	• Spread on bread and savoury biscuits
Encourage fruit and vegetables every day. Avoid 'junk' food which replaces nutrient rich food. Provide 3 meals and 3 snacks plus prescribed supplements daily	

3.6 Drinks [2]

- A child with poor growth should drink nutritional supplements before offering milk or water
- Avoid unmodified cows (or other animal) milk in infants < 12 months old
- Consider full cream milk, alone or mixed with supplement, for older children
- Follow on formulas are not recommended
- Avoid cordial, soft drink, tea, herbal teas, coffee, fruit juice and sports drinks which displace nutritious supplements. See Diet and nutrition, page 29

3.7 Encouraging eating [1]

- Children with poor appetites need persistent positive encouragement to eat enough food
- Strategies for amounts and types of food include:

  - small regular amounts of nutritious food
  - the same foods the family are eating
  - finger foods
  - avoid drinks and snacks immediately before and during meals
- Mealtime environment:
  - model behaviour by eating together as a family at the table
  - avoid negative comments about food
  - keep calm and relaxed, avoid nagging, punishment or force feeding
  - allow independence
  - avoid distractions e.g. television, electronic devices
- Mealtime routines:
  - provide consistent time and location for meals
  - allow 20–30 minutes for main meals, 10–20 minutes for snacks
- Food exploration:
  - make food look appealing e.g. favourite foods in the shape of a face
  - serve foods or drinks in colourful cups, bowls or plates
  - try different foods and often
  - involve children in choosing ingredients
  - encourage children to cook, mix and prepare food
- Praise good behaviour, ignore poor behaviour:
  - encourage good eating behaviours with cuddles, smiling and voicing how well they are eating. Praise regularly
  - ignore poor eating behaviours e.g. not eating, eating slowly or spitting food out. Avoid nagging or berating
- Avoid unhealthy food rewards:
  - unhealthy food rewards reinforces these are preferable to healthy foods e.g. ice cream if the child eats their vegetables
  - avoid substituting unhealthy foods (e.g. chips) for uneaten healthy foods because of parental fear a child 'will go hungry'. Children learn they will be rewarded for refusing foods
  - offer non-food rewards for eating well e.g. a game, book, park trip or stickers
- It takes 1–2 months and a lot of perseverance to restore a child's healthy appetite
- Encourage parents to keep a food intake diary of food types and amounts, mealtime issues, settings and behaviours

3.8 Nutritional supplements [1]

- A high energy oral (or enteral) fluid that helps restore normal appetite and growth by providing micronutrients and energy
- A dietitian will ensure a supplement is nutritionally complete according to child's age, weight and medical condition for children who are:
  - < 2 years age
  - weigh < 8 kg
  - lactose intolerant
  - allergic to certain foods
  - deficient in particular micronutrients

- Once appetite is re-established, interest in eating solids increases
- Family education includes:
  - demonstrating supplement mixing as per product requirements
  - encouraging child to take as much of the recommended supplementary amount
  - demonstrating tube/enteral feeding flow rate, volume, dilution and additional fluid requirements
  - using a food diary to record daily supplement and food intake
  - offer food ideas and preparation. See Table 2.
  - Discuss 3.7 Encouraging eating
- See local policies and guidelines for eligibility, supply and costing of enteral products. See Resource 3.

3.9 Growth monitoring [1,4,5]

- A child with poor growth should have their **weight-for-age** monitored according to level of concern:
  - weekly if < 1 month old
  - fortnightly between 1–6 months old
  - monthly > 6 months old
- A child's weight will naturally fluctuate over time. Weighing children too frequently may add to parental anxiety
- A child's weight and length should **trend** consistently along their centile
- Refer a child to the MO/NP/child health nurse if **weight-for-age:**
  - centile continues in a flat line
  - crosses 2 centiles downwards or
  - remains below the 10th centile
  - > 15% weight loss in last 3 months
  - dehydrated or minimal oral intake > 14 days
  - diarrhoea and/or vomiting for 5 days

4. Medicines for poor growth in children

- Medicine use in a child with poor growth primarily targets underlying medical presentations such as:
  - giardia
  - intestinal parasites (hookworm, roundworm, threadworm, whipworm and strongyloidiasis)
  - anaemia
- See the *Primary Clinical Care Manual* for further details

5. Cycle of care

Cycle of care summary for poor growth in children

Action	Dx	Frequency
Length	✓	Repeat at 4, 8 and 12 wks
Weight	✓	Until improvement to centiles achieved: • wkly if < 1 month old • fortnightly between 1–6 months old • mthly > 6 months old
Head circumference	✓	Repeat at 8 wks
History and exam	✓	Repeat if unwell or poor weight/length gain
Diet and nutrition	✓	Each visit
Hb, urine and stool MCS and OCP	✓	Repeat as required
Parental education and SEWB	✓	Each visit
Nutritional supplement	✓	Daily until improvement to centiles achieved and according to dietitian
HW/CHN review	✓	At least wkly for 8 wks or until improvement to centiles achieved
Dietitian	✓	At least wkly for 8 wks or until improvement to centiles achieved
MO/NP review	✓	If unwell or poor weight/length gain
Social worker	✓	PRN
Paediatrician		As determined by MO/NP or if acutely unwell
Multidisciplinary team		If poor growth persists after 6 wks despite appropriate interventions
Immunisations	✓	See the *Australian Immunisation Handbook* for schedule

6. References

- All Chronic Conditions Manual references are available at the Office of Rural and Remote Health website

7. Resources

1. The World Health Organization (WHO) Child Growth Standards charts
2. The Infant Feeding Guidelines
3. Guideline for home enteral nutrition service (HENS) for outpatients: eligibility, supply and costing

Rheumatic heart disease

High risk groups [1]

Consider in people who meet the below criteria with reduced exercise tolerance or breathlessness:

- Living in an area with high acute rheumatic fever (ARF) rates
- Aboriginal and Torres Strait Islander people living in rural or remote settings
- Previous or current household overcrowding (>2 people per bedroom) or low socioeconomic status
- History of ARF
- Family or household recent history of ARF/Rheumatic heart disease (RHD)
- Migrant or refugee from low or middle-income country
- Prior resident or traveller to a high ARF risk setting

Considerations in pregnancy [1]

- Moderate or severe RHD increases cardiac and adverse fetal risks
- Regular secondary prophylaxis is safe in pregnancy and breastfeeding
- Provide pre-conception counselling for all women with known RHD

Urgent referral [1]

- Cardiologist, obstetrician or MO/NP if suspicion of a RHD diagnosis exists or there are signs of Heart failure, page 325

Acute rheumatic fever (ARF)

- For diagnosis and management of ARF refer to the *Primary Clinical Care Manual.* See Resource 1.

Notifiable diseases

- In Queensland, notify your local Public Health Unit using the online RHD or ARF notification forms

1. What is RHD? [1]

- The immune response to Group A Streptococcus bacterium (Strep A) infection, can cause acute generalised inflammation affecting the heart, joints, brain and skin. This is called acute rheumatic fever (ARF)
- RHD develops when the body's mitral and aortic heart valves are permanently damaged by recurrent ARF
- RHD is classified as borderline, mild, moderate or severe
- Many patients appear asymptomatic until they develop moderate-severe RHD, leading to Heart failure, page 325

2. Diagnosis of RHD [1]

- Echocardiography is the primary method to detect valvular lesion(s) and diagnose RHD in patients with reduced exercise tolerance, breathlessness, a new murmur or ARF
- Specialist cardiologist assessment of echocardiographic data will determine:

  - RHD severity (borderline, mild, moderate or severe)
  - management plan and referral
  - secondary prophylaxis schedule and cessation
  - ongoing monitoring and echocardiogram to assess need for valve repair or replacement
- Many people with RHD do not have a documented history of ARF

3. Management of RHD [1]

- The goal of managing RHD is to prevent the progression of valve disease and ARF recurrences by:
  - regular secondary prophylaxis of intramuscular antibiotics. See Table 1.
  - swiftly identifying and addressing any skin and throat infections

3.1 Supporting patient self-management

- Provide RHD resources and education outlining:
  - how it progresses and its association with throat and skin infections
  - the signs and symptoms of recurrent ARF and of RHD. See Resource 2.
  - routine scheduled attendance to clinic for management and follow-up
  - effectiveness of prophylactic antibiotics to prevent recurrent ARF and minimise RHD
- Encourage the patient to identify barriers to adequate lifestyle modification and medical adherence and to set goals to overcome those barriers. See Engaging our patients, page 19

3.2 Social-emotional support

- Ensure a co-ordinated transition from paediatric to adult services for young patients
- Address, treat and manage client's injection pain, fear and distress. See 4.2 Benzathine benzylpenicillin administration technique
- See Social-emotional wellbeing, page 58

3.3 Recall for secondary prophylaxis (antibiotics)

- Place patient on the health service RHD recall system
- Provide patient with:
  - a scheduled regimen for intramuscular **benzathine benzylpenicillin G (BPG)** injection. See 4.1 Secondary prophylaxis
  - date of next specialist review and echocardiogram
- Recall patient from 21 days after the last injection to:
  - ensure injections are given no more than 28 days apart
  - minimise days at risk of streptococcal infection
- If a patient relocates or travels, provide the prospective health service with the patients medical history and RHD action plan to ensure continuity of care
- Contact the RHD Register and Control Program (Resource 3.) to:
  - request educational resources
  - advise of BPG administration details, echocardiogram or specialist reviews
  - advise if patient relocates or is travelling

3.4 Prevent infections

- Identify and manage all skin and throat infections promptly to prevent recurring ARF and further valve damage. See Skin (child), page 127 and Skin (adult), page 189

3.5 Dental care [1,2]

- Poor oral health increases the risk of infective endocarditis
- Encourage and support dental hygiene and oral health check at each visit
- Patients require routine dental review according to severity
- Antibiotic prophylaxis is required prior to some dental procedures and heart valve surgery. See Dental caries and periodontal disease, page 280

3.6 Boarding school

- Many rural and remote children attend boarding schools interstate. Develop a documented RHD action plan with these children and families outlining:
  - parental consent to access BPG injections and treatment
  - BPG recall and management
  - specialist medical appointments

3.7 Specialist review [1]

- Ensure timely and scheduled paediatric or adult cardiologist or MO/NP review of:
  - heart and lungs
  - echocardiogram
  - throat, teeth and skin
  - Heart failure, page 325 signs and symptoms

3.8 Heart valve surgery

- Heart valve replacement or repair prevents left ventricular dysfunction and severe pulmonary hypertension
- A cardiologist will determine the severity of valve damage and decide the appropriate choice and timing of surgical intervention
- The risks from heart valve replacement include stroke, infective endocarditis and valve thrombosis

4. Medicines for RHD [1,2,3,4]

- Prevent recurrent ARF by promptly treating sore throats and skin sores with antibiotics. See the *Primary Clinical Care Manual*

4.1 Secondary prophylaxis [1,2,3,4]

- Secondary prophylaxis involves scheduled administration of BPG to prevent recurrent ARF. See Table 1.
- Decisions to cease secondary prophylaxis are based on a clinical and echocardiographic assessment by a cardiologist or paediatrician. See Table 2.

4.2 BPG administration technique [1,3]

- Initial BPG administration can determine regimen success or failure, especially for children
- To support adherence and wellbeing, all patients should control how and where they receive their injection. Record their preference
- **Lidocaine can be added to BPG to reduce the pain of LA Bicillin™**. See the *Primary Clinical Care Manual* for further details
- Prior to injection warm BPG solution to room temperature by rolling between the hands
- Inject slowly over 2 minutes to avoid pain from solution under pressure
- Other techniques prior to injection include:
  - distraction
  - ice pack applied to the site
  - firm pressure to the site for 10 seconds
  - applying vibrating ice pack (e.g. Buzzy®) adjacent to the injection site
  - administering pre-mixed nitrous oxide (Entonox®) during the procedure
  - applying warm pack afterwards and encouraging normal ambulation
  - administering paracetamol before injection
  - administering clonidine before injection for highly distressed children and adolescents despite other strategies

Table 1. Antibiotic regimens for secondary prevention [1,3,4]

First line
Benzathine benzylpenicillin G (BPG- LA Bicillin™) ≥ 20 kg 1.2 million units; < 20 kg 600,000 units by deep IM injection every 21–28 days
Second line • If IM route is not possible or refused, use oral penicillin • Monitor adherence closely
Phenoxymethylpenicillin (penicillin V) 250 mg PO bd
Following documented penicillin allergy
Erythromycin 250 mg PO bd

4.3 Anticoagulation therapy [5]

- Safe use of warfarin, page 439 remains the anticoagulant of choice following a heart valve replacement or Atrial fibrillation, page 226
- Patients are discharged from hospital on anticoagulation therapy

Table 2. Recommended duration of secondary prophylaxis [1,3,4]

Diagnosis	Duration if documented history of ARF	Duration if NO documented history of ARF	Cease if	Echocardiogram timing after cessation
Priority 3. **ARF**	• Min. 5 years after most recent ARF episode, or until 21 yo whichever is longer	• N/A	• > 21 yo and **no** ARF in last 5 years **and** • Normal echocardiogram	• Yearly then as per Cycle of care
Priority 3. **Borderline RHD**	• Min. 10 years after most recent ARF episode, or until 21 yo whichever is longer	• ≤ 20 yo then 2 years following diagnosis of Borderline RHD • If still present at 2 years, continue for further 2 years	• > 20 yo and **no** ARF in last 10 years **and** • Normal echocardiogram for 2 years	• Yearly then as per Cycle of care
Priority 3. **Mild RHD**	• Min. 10 years after most recent ARF episode, or until 21 yo whichever is longer	• < 35 yo then 5 years min. following diagnosis of RHD or until 21 yo whichever is longer	• > 21 yo and **no** ARF in last 10 years or progression of RHD **and** • Stable echocardiogram for 2 years	• Yearly then as per Cycle of care
Priority 2. **Moderate RHD**	• Min. 10 years after most recent ARF episode or until 35 yo whichever is longer	• < 35 yo then 5 years min. following diagnosis of RHD or until 35 yo whichever is longer	• > 35 yo and **no** ARF within the last 10 years **and** • Stable echocardiogram for 2 years	• Yearly then as per Cycle of care
* Priority 1. **Severe RHD**	• Min. 10 years after most recent ARF episode or until 40 yo whichever is longer	• Min. 5 years following diagnosis of RHD or until 40 yo whichever is longer	• > 40 yo and **no** ARF within the last 10 years **and** • Stable valvular disease /cardiac function on serial echocardiogram for 3 years **or** • Patient or family preference to cease due to advancing age and/or end of life care	• 6 mthly then as per Cycle of care

***Note–Priority 1 classification includes:**
- patients with > 3 episodes of ARF within the last 5 years
- pregnant women with RHD (with any severity) for the duration of their pregnancy
- children < 5 years of age with ARF or RHD

5. Cycle of care

Cycle of care summary for rheumatic heart disease

Action	Dx	Frequency			
		Priority 4. **ARF or Borderline RHD Tx ceased or no RHD**	Priority 3. **ARF, Borderline or Mild RHD**	Priority 2. **Moderate RHD**	Priority 1. **Severe HD**
Benzathine benzylpenicillin G (BPG)	✓	-	Every 21–28, no more than 28 days apart		
HW/RN review	✓	12 mthly	4 wkly		
Height	✓	12 mthly then once only when patient stops growing			
Weight	✓	12 mthly			
BMI	✓	12 mthly			
Waist circumference	✓	12 mthly			
Pulse	✓	12 mthly		6 mthly	3 mthly
Blood pressure	✓	12 mthly		6 mthly	3 mthly
Anticoagulation therapy		Nil	As recommended by specialist		
INR	✓	Nil	As recommended by specialist		
ECG	✓	Nil	12 mthly		
Echocardiogram	Within 2 mths	1, 3, 5 years after diagnosis	**≤ 21 years:** 1–2 yrly **Adult:** 2–3 yrly	12 mthly	At least 6 mthly
Lifestyle modification	✓	At each visit			
Self manage education	✓	12 mthly	4 wkly		
Skin and throat	✓	At each visit			
Oral care	✓				
MO/NP review	✓	12 mthly		6 mthly	3–6 mthly
Dentist	✓	12 mthly		Within 3 mths of Dx then 6 mthly	
Medicine review	✓	12 mthly			
Antibiotic cover	For *Streptococcal* infections see the *Primary Clinical Care Manual*				
Influenza, pneumococcal and COVID-19 vaccine	Recommended. See the *Australian Immunisation Handbook* for schedule				
Social-emotional wellbeing	✓	At each visit			
Management plan	✓	At each visit			
Specialist review	✓	1, 3, 5 years post cessation of secondary prophylaxis	1–3 yearly	12 mthly	6 mthly
		With any new symptoms or suspected disease progression			
Cardiac rehab	Post heart valve surgery. Cardiac program with discharge summary				

6. References

- All Chronic Conditions Manual references are available on the Office of Rural and Remote Health website

7. Resources

1. The 2020 Australian guideline for prevention, diagnosis and management of acute rheumatic fever and rheumatic heart disease
2. RHDAustralia website for patient support and resources
3. The RHD Register and Control Program (ArfRhdRegister@health.qld.gov.au) Ph. 1300 135 854

Stroke and transient ischaemic attack

High risk groups [1,2]

- Recurrent episodes of transient ischaemic attacks (TIA)
- ≥ 60 years of age
- Currently using anticoagulants
- Hypertension, page 345, Atrial fibrillation, page 226, Diabetes, page 304, Dyslipidaemia, page 317
- Carotid stenosis
- Smokers and those who drink excessive amounts of alcohol

Considerations in pregnancy

- Stroke in women aged 15–44 years is uncommon
- Refer those at risk of thromboembolic conditions or a history of stroke or TIA to an obstetrician
- Warfarin is contraindicated in pregnancy

Urgent referral

- Use the acronym FAST to identify early warning signs of stroke or TIA:
  - **F**–Facial weakness
  - **A**–Arm or leg weakness
  - **S**–Speech difficulty
  - **T**–Time to act fast
- Refer to the *Primary Clinical Care Manual* for acute management

1. What is a stroke or TIA? [1,2]

- **Stroke:**
  - occurs when a vessel supplying blood to the brain suddenly becomes blocked (ischaemic stroke) or ruptures and bleeds (haemorrhagic stroke)
  - results in part of the brain dying. Is often fatal
- **TIA:**
  - occurs when blood supply to the brain is temporarily blocked, which usually fully resolves < 24 hours
  - requires rapid assessment and management to prevent subsequent stroke, with greatest risk within 48 hours
- The symptoms for a stroke and a TIA are the same, however stroke symptoms last > 24 hours and results in brain tissue death (neurological infarction), including:
  - unilateral weakness, clumsiness or numbness
  - speech disturbance; trouble talking or understanding speech
  - difficulty recognising or naming things
  - double vision or sudden loss of vision in one or both eyes

  - sudden loss of balance
- Isolated sensory symptoms are **unlikely** to be due to Stroke or TIA

2. Diagnosis of a stroke or TIA [1–3]

- Diagnosis is made within 48 hours of onset of stroke symptoms by:
  - history and clinical presentation of neurological symptoms
  - a CT or MRI scan of the brain to detect ischemic cerebral vascular disease
  - an ECG to exclude AF and other cardiac conditions
  - a carotid doppler to exclude atherosclerotic plaque and vessel occlusion
  - an echocardiogram to assess heart function and exclude micro thrombi
- CT angiogram or MRA imaging of the entire vasculature from aortic arch to cerebral vertex improves diagnosis, recognition of stroke aetiology and assessment of prognosis
- A BGL improves specificity as hypoglycaemia can mimic a stroke
- Severity is assessed and recorded using a validated tool. See Resource 1.

3. Management of people post stroke or TIA [1–3]

- The goals of managing stroke or TIA is to prevent recurrent episodes, support the patient to rehabilitate and to maintain an active productive life by:
  - building a therapeutic partnership with patient and family
  - Lifestyle modifications, page 18
  - identifying, addressing and the meeting target values of comorbidities in conjunction with Australian cardiovascular disease risk calculator, page 425
    - Hypertension, page 345; a primary risk factor for first and subsequent stroke
    - Atrial fibrillation, page 226; anticoagulants are commenced immediately
    - Diabetes, page 304; a risk factor for subsequent strokes
    - Dyslipidaemia, page 317; stroke risk reduces within 12 months of commencing lipid therapy
    - Coronary heart disease, page 264
    - Heart failure, page 325
    - Overweight and obesity (adult), page 366
    - Chronic kidney disease, page 242

3.1 Support patient self-management [1,2]

- Discuss with patient and family:
  - what a stroke or TIA is, what it entails and how it progresses. See Resource 2.
  - preventing further strokes and TIAs by way of Lifestyle modifications, page 18
  - early warning signs for immediate medical attention (and calling **000**) by using the acronym FAST:
    - **F**–Facial weakness
    - **A**–Arm and/or leg weakness
    - **S**–Speech difficulty
    - **T**–Time to act fast
  - the need to monitor blood pressure and blood glucose

  - risk factors i.e. history or family history of vascular disease, hypertension, obesity, dyslipidaemia, physical inactivity, atrial fibrillation, excessive alcohol and smoking
- Encourage the patient to identify barriers to adequate lifestyle modification and medical adherence and create goals to overcome those barriers. See Engaging our patients, page 19

3.2 Social-emotional support [1,2]

- Depression, page 286 and Anxiety disorders, page 197 are common mood disorders post stroke. Consider trial of psychological therapies, relaxation strategies or medicines
- Assess and discuss the impact of the patient's function on employment, finances, routines and emotions
- Encourage and support the patient to:
  - be as independent as is feasible and safe
  - participate in leisure and productive activities
  - re-engage in family and community roles
  - seek medical approval to return driving (if appropriate)
  - access the wider community
  - maintain quality relationships with family and friends, including sexual relationships
- The Rural Stroke Outreach Service can provide support as needed. See Resource 3.
- See Social-emotional wellbeing, page 58

3.3 Carer support [1]

- Caring for a patient after a stroke is a source of stress and burden
- Carers may experience isolation and abuse if patient becomes violent or agitated
- Ensure carer is engaged in service coordination
- Refer carers to support services, including respite, which allows carers to have a break and enables patients to stay in their home longer. See Resource 4.

3.4 Smoking cessation [1–3]

- Smoking increases the risk of stroke by narrowing of blood vessels and changing blood dynamics
- The risk of stroke from smoking disappears five years after giving up cigarettes
- See Smoking cessation, page 48

3.5 Diet and nutrition [1–3]

- Dehydration and malnutrition are common after a stroke due to swallowing impairment, immobility and communication difficulty. Refer to a speech therapist to assess for swallowing impairment
- Refer to a dietitian to assist with malnourished patients and instigate texture modified diets and fluids or supplements
- Those with hypertension should reduce their salt (sodium) intake to reduce cardiovascular risk
- Encourage the carer to make preferred fluids and foods available, supervise patient during meals and monitor and document intake

- Diet and nutrition, page 29 high in fruit, vegetables and oily fish reduces the risk of further strokes

3.6 Alcohol reduction [1–3]

- Excessive alcohol consumption increases the risk of subsequent strokes
- Refer to Mental Health Alcohol and Other Drugs Service (MHAODs) to support Alcohol reduction, page 24

3.7 Physical activity [1–3]

- Cardiovascular deconditioning occurs as a result of immobility after a stroke
- Physical activity and sleep, page 34 has a protective effect against stroke by improving blood pressure and reducing cardiovascular risk
- Once strength returns encourage up to 40 minutes of moderate physical activity every day. Structured exercise classes are more beneficial

3.8 Falls prevention [1,2]

- The majority of patients experience a fall after a stroke
- Screen for individual falls risk. See Resource 5.
- Review medicines and minimise sedatives especially benzodiazepines
- Refer to a physiotherapist and a balance and strength group
- Refer to an occupational therapist to assess for home modifications required to minimise slips and falls hazards

3.9 Rehabilitation[1,2]

- Undertaken to maximise a person's functionality
- A plan is developed by the discharging hospital after a comprehensive assessment
- The goal oriented plan is tailored and documented by the physiotherapist and implemented in consultation with the patient and carer by local clinicians
- Rehabilitation starts < 48 hours post stroke and involves as much scheduled therapy as tolerated daily
- Encourage patients and carers to continue rehabilitative interventions while the patient is at home. See Table 2.

Table 2. Stroke rehabilitation prompts for patient and carer [1]

Weakness	
• 70% present with arm or leg weakness • Therapeutic strategies include repetitive resistance exercises, muscle contractions, strength training, cycling	
Loss of sensation	
• 50% have some sort of sensory deficit • Sensory specific training e.g. to recognise and test hot or cold water temperature • Touching of various textured objects to parts of the body e.g. water, sand, play dough	• Lifting small weights, bouncing balls, pushing and skipping • Rocking chairs, swings, spinning, rolling • Swimming, tying shoelaces, building blocks, transferring

Table 2. Stroke rehabilitation prompts for patient, carer and/or family *(continued)* [1]

Visual field loss (hemianopia)
• Affects 33% of stroke victims • Refer to an ophthalmologist who will suggest therapeutic strategies e.g. vision restoration therapy, attentional cueing, Fresnel Prism glasses, PC based visual restitution training
Inability to recognise sounds, smells, body parts or objects (agnosia)
• Help patient to use their senses • Use labels, shapes, distinct features and verbal reasoning • Particularly important for dangerous household items e.g. stove
Memory and executive functioning (initiation of behaviour, planning and problem solving)
• Memory games and tasks • Repetitive behaviours or activities • Use notebooks, organisers and alarms
Memory, attention and concentration
• Repetitive attention tasks e.g. games (cards, match, fish), cooking • Memory training using alerts, calendars or diaries
Activities of daily living
• Occupational therapy referral • Task specific training • Assistance of aids e.g. eating utensils, walkers, alarms, etc.
Upper limb activity
• Repetitive upper limb practice usePractice in front of a mirror • Mechanical assistance e.g. treadmill • Mental practice
Sitting, standing from sitting position and remaining standing
• Repetitive practice with or without assistance
Walking
• Repetitive practice • Use a treadmill • Use foot-ankle orthotics for foot drop • Physically position patient's feet
Weakness
• Practice sitting and reaching beyond arm's length with assistance or supervision
Unilateral spatial neglect (failure to respond to stimuli or move towards one side)
• Modify environment to favour patient's dominant side • Training to visually scan an environment • Draw attention to, activate and touch the affected limb • Eye patching
Impaired planning and sequencing of movement (apraxia)
• Physically guide limbs through movements • Break tasks into smaller steps • Verbalise the actions • Touch and apply weight to the limbs
Difficulty speaking due to poor mouth muscle strength (dysarthria) and sequencing of muscle use (dyspraxia)
• Refer to a speech pathologist who will suggest therapeutic strategies e.g. oral muscle exercises, repetitive practice speaking, prompting
Inability to speak (aphasia) and impaired ability to speak (dysphasia)
• Refer to a speech pathologist who will suggest therapeutic strategies • Encourage other forms of communication e.g. writing or via electronic medium

Table 2. Stroke rehabilitation prompts for patient, carer and/or family *(continued)* [1]

Difficulty swallowing (dysphagia)
• Refer to a speech pathologist who will suggest therapeutic strategies e.g. swallowing exercises, modifying environment, safe swallowing information • Position and alter food and fluid texture and consistency • Monitor food and fluid intake and tolerance • Urgently refer to MO/NP for weight loss or recurrent chest infections

3.10 Oral hygiene [1,3]

- Physical weakness, dysphasia, lack of coordination and altered cognition can lead to Dental caries and periodontal disease, page 280
- Provide patient and carer with oral hygiene management and education

3.11 Preventing contracture [1,3]

- Contracture is the result of impaired and infrequent range of motion movement of a joint and muscle due to severe weakness post stroke
- Early rehabilitation including active motor training or electrical stimulation (TENS) can prevent contractures. See Table 2.

3.12 Pain management [1,3]

- Shoulder pain is common post stroke. Management involves shoulder strapping, TENS, active motor training and education to prevent trauma
- Central post stroke pain (CPSP) is a burning pricking sensation made worse by touch, water or movement and is managed by medicines or the specialist pain management team. See Persistent pain, page 387

3.13 Oedema [1,3]

- Weak and immobile patients risk their feet and hands swelling
- Management includes pressure garments, TENS, continuous passive movement and elevation of limbs when resting. See Table 2.

3.14 Fatigue [1,3]

- Fatigue unrelated to exertion and not relieved by rest, occurs in most patients post stroke
- Patients should avoid sedatives and excessive alcohol
- Arrange therapy for periods of the day when the patient is most alert

3.15 Incontinence [1,3]

- Incontinence is common post stroke due to poor muscle tone and cognitive and perceptual impairment
- Refer to a continence nurse advisor for assessment and to offer strategies such as:
  - patient and carer support to develop, document, implement and monitor bladder and bowel continence. See Resource 6.
  - avoiding indwelling catheters except with acute urinary retention
  - trialling anticholinergics for urge incontinence
  - trialling a voiding regimen to assist with bladder retraining
  - employing a bowel habit retraining regimen to identify the type and timing of dietary intake to exploit the gastro-colic reflex to defecate after food

  - using continence aids e.g. urinary pads, pants, uridomes
- If continence is not achieved refer patient and carer to Medical Aids Subsidy Scheme (MASS) and Continence Aids Payment Scheme (CAPS). See Resource 7.

3.16 Emotional and personality changes [1–4]

- Irritability, aggression, apathy, disinhibition, impulsivity, lack of insight and rapid mood changes (e.g. crying to laughing) is common after a stroke
- These changes can contribute to significant carer burden and stress
- Provide patient and carer with Resource 8. to help manage challenging behaviours

3.17 Deep vein thrombosis (DVT) and pulmonary embolism (PE) [1,3]

- Reduced mobility, stroke severity, age, dehydration and delayed rehabilitation interventions is associated with nearly 30% of deaths post stroke from DVT and PE
- Prevention focuses on:
  - rehabilitative interventions. See Table 2.
  - adequate hydration
  - antiplatelet therapy. See 4. Medicines in people post stroke or TIA
- **Antithrombotic stockings are not recommended for the prevention of DVT and PE**

3.18 Pressure area care [1,4]

- Age, stroke severity, immobility, incontinence, nutritional status and diabetes are contributing factors to localised tissue damage due to pressure, shearing or friction
- Assess patients for pressure ulcer risk using The Waterlow Pressure Ulcer Risk Assessment Tool. See Resource 9.
- Management of pressure ulcers involves:
  - addressing contributing factors above
  - attentive skin and wound care
  - use of pressure beds, mattresses or cushions
  - regular mobilisation and repositioning

3.19 Obstructive sleep apnoea (OSA) [3]

- OSA occurs in up to 80% of patients following a stroke
- Weight reduction and CPAP therapy are the accepted effective treatments for OSA
- Assess a patient's daytime sleepiness and OSA risk by using a validated tool. If they score highly refer to a sleep specialist. See Resource 10.

3.20 Palliative care [1]

- Palliative care, page 376 should be considered in all patients where risk of significant deterioration is high
- Anticipate grief and loss from time of diagnosis, and the need for counselling
- Perform Advance Care Planning, page 141 so the patient can retain control over their care and future decision making
- Refer eligible patients to the Commonwealth Home Support Programme (CHSP) and Medical Aid Subsidy Scheme (MASS). See Resources 7. and 11.

4. Medicines for people post stroke or TIA [1,3]

- Continuation or initiation of hormone replacement therapy is not recommended
- Oestrogen-containing contraceptive pill is contraindicated in women who have had a stroke or TIA
- Seek specialist advice for medicine use after haemorrhagic stroke

4.1 Prevention of recurrent stroke or other vascular events [1–3]

- Recommended medicines post stroke or TIA are:
  - antihypertensives regardless of Hypertension, page 345 history
  - antiplatelets after a non-cardioembolic ischaemic stroke or TIA
  - statins regardless of Dyslipidaemia, page 317 history
  - anticoagulants if comorbid Atrial fibrillation, page 226

Table 4. Medicines for stroke and TIA [1–4]

For the prevention of stroke or TIA in high risk people	
Antiplatelet • Short term (first three weeks) aspirin + clopidogrel is recommended within 24 hours for minor ischaemic stroke, high-risk TIA or severe intracranial stenosis • Long-term aspirin + clopidogrel not recommended unless diagnosed acute coronary disease or recent coronary stent • Not used for prevention in patients with Atrial fibrillation, page 226	
• **Aspirin** 100 mg PO daily • **Dipyridamole MR + aspirin** 200/25 mg PO bd	• **Clopidogrel** 75 mg PO daily where aspirin not tolerated or contraindicated
Anticoagulant • Recommended for comorbid Atrial fibrillation, page 226 for long-term secondary prevention	
Antihypertensives • Long term blood pressure lowering therapy is recommended for all patients to target SBP < 120–130 mmHg if tolerated and no side effects. See Hypertension, page 345	
Statins • Recommended for all patients, regardless of Dyslipidaemia, page 317 history	
Central post stroke pain (CPSP) • Commonly treated with adjuvants. See Persistent pain, page 387	

5. Cycle of care

Cycle of care summary for those at high risk of stroke or TIA

Action	Frequency
Heart rate	3 mth then 12 mthly
TIA screen	3 mthly or as indicated by condition
Stroke prevention education	3 mthly (or as indicated by condition) then 12 mthly
CHA2DS2-VA, page 435	If AF present then annually
Lifestyle modification	Each visit
Influenza, pneumococcal and COVID-19 vaccines	Recommended. See the *Australian Immunisation Handbook* for schedule
MO/NP review	3 mthly (or as indicated by condition) then 12 mthly

Cycle of care summary for post stroke or TIA

Action	Dx	Frequency
Blood pressure	✓	Within 1 mth of discharge or first presentation post stroke then 3 mthly or as condition indicates
BMI	✓	12 mthly or as condition indicates
Weight	✓	
Heart rate	✓	
Lipids	✓	
Fasting blood glucose levels	✓	
INR	✓	See Safe use of warfarin, page 439
Assess falls risk	✓	As patient situation changes
CHA2DS2-VA, page 435	✓	Annually if on anticoagulants
HAS-BLED, page 437	✓	Annually if on anticoagulants
Patient education	✓	Within 1 mth of discharge or first presentation post stroke then 3 mthly
Carer support	✓	Each visit
Lifestyle modification	✓	Each visit
Social-emotional wellbeing	✓	Each visit
Influenza, pneumococcal and COVID-19 vaccines	Recommended. See the *Australian Immunisation Handbook* for schedule	
Dentist	✓	12 mthly
HW/RN review	✓	3 mthly
MO/NP review	✓	6 mthly
Physiotherapist	✓	At the discretion of the physiotherapist
Speech pathologist	✓	At the discretion of the speech pathologist
Dietitian	✓	At the discretion of the dietitian

6. References

- All Chronic Conditions Manual references are available on the Office of Rural and Remote Health website

7. Resources

1. The NIH Stroke Scale/Score (NIHSS) for quantifying stroke severity
2. The Stroke Foundation website
3. The Rural Stroke Outreach Service
4. Carers Queensland and MyCare respite information
5. Queensland Stay On Your Feet falls prevention resources
6. Continence Foundation of Australia bladder and bowel diary
7. The Medical Aids Subsidy Scheme (MASS) and Continence Aids Payment Scheme (CAPS) and the Australian Government bladder and bowel resources
8. Stroke Association emotional changes after stroke resources and the Stroke Foundation Emotional and personality changes after stroke factsheet
9. The Waterlow Pressure Ulcer Risk Assessment Tool
10. The Epworth Sleepiness Scale and STOP-Bang questionnaire
11. The Commonwealth Home Support Programme (CHSP)

PAGE LEFT INTENTIONALLY BLANK

Section 5.
Appendices

Australian cardiovascular disease risk calculator

Information [1]

- The Australian cardiovascular disease risk calculator is based on the PREDICT-1 equation, developed in New Zealand and recalibrated and modified for the Australian (including Aboriginal and Torres Strait Islander) population. See Resource 1.
- The new CVD risk categories **are not interchangeable** with the 2012 Absolute cardiovascular disease risk assessment categories

1. Who to identify for CVD risk [1–3]

- The following **without known CVD** require calculation:
  - all people aged 45–79 years
  - people with diabetes aged 35–79 years
  - Aboriginal and Torres Strait Islander people aged 30–79 years:
    - assess CVD risk during well adult health checks for those aged 18–29 years. See Resource 2.
- The following are assessed as being **high risk of CVD** and do not require calculation:
  - people with moderate-to-severe Chronic kidney disease, page 242 meeting any of these criteria:
    - sustained eGFR <45mL/min/1.73m^2 **or**
    - men with persistent uACR >25mg/mmol **or**
    - women with persistent uACR >35mg/mmol
  - people with a confirmed diagnosis of familial hypercholesterolaemia. See Dyslipidaemia, page 317

2. Use calculator to assess CVD risk [1–3]

- **Scoring is achieved by using** The online Australian cardiovascular disease risk calculator

Table 1. The Australian CVD Risk Calculator variables and instructions for use

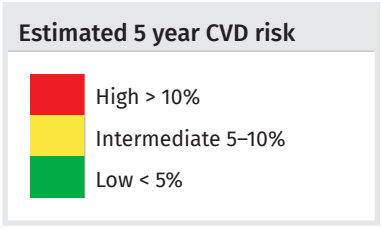
Variable	Application	Mandatory
Age	• Enter age in years • The Calculator is validated for adults aged 30–79 years	♥
Sex	• Enter sex at birth • There is currently insufficient data to stratify risk for people who are intersex or non-binary sex	♥
Smoking status	• Choose from three categories: – never smoked – previously smoked – currently smokes	♥

Table 1. The Australian CVD Risk Calculator variables and instructions for use *(continued)*

Variable	Application	Mandatory
Blood pressure (BP)	• Systolic blood pressure (SBP) is entered using the average of the last two seated, in-clinic BP measurements	♥
Cholesterol	• Enter TC:HDL-C ratio • Use most recent measurements; fasting or non-fasting	♥
Diabetes	• Enter diabetes status; yes or no	♥
CVD medicines	• CVD medicines used during the 6 months prior to risk assessment: – lipid-modifying medicines. See Dyslipidaemia, page 317 – BP-lowering medicines. See Hypertension, page 345 – antithrombotic medicines. See Atrial fibrillation, page 226 and Stroke and transient ischaemic attack, page 413	♥
Postcode	• Postcode is entered to calculate the Socioeconomic Indexes for Areas (SEIFA) ranking which reflects regional socioeconomic status • This can be manually adjusted at the discretion of the clinician	✖
History of AF	• Known history of electrocardiogram (ECG) confirmed Atrial fibrillation, page 226; yes or no	✖
Additional diabetes-specific variables for people with diabetes for more accuracy		
Time since diagnosis of diabetes	• Time entered in years • See Diabetes, page 304	♥
HbA1c	• Enter HbA1c in mmol/mol or % (single non-fasting)	♥
uACR *	• Enter uACR in mg/mmol • See Chronic kidney disease, page 242	♥
eGFR *	• Enter eGFR in mL/min/1.73m^2 • See Chronic kidney disease, page 242	♥
BMI	• Enter calculated BMI: kg/m^2	♥
Insulin	• Record use of insulin in the 6 months before risk assessment	♥

* Whilst uACR and eGFR have been shown to independently improve prediction of cardiovascular events, they are only included as variables in the diabetes-specific equation due to lack of availability of data in the general population PREDICT cohort. Instead, they have been incorporated into the overall risk calculation as a reclassification factor.

3. Identify CVD risk category



- **The calculator also allows for factors to be "reclassified" up or down that may move an individuals risk estimate higher or lower.** These are:
  - ethnicity
  - coronary artery calcium
  - family history of Coronary heart disease, page 264 or Stroke and transient ischaemic attack, page 413 in a first-degree female relative aged < 65 years or a first-degree male relative aged < 55 years
  - eGFR and uACR
  - a current or recent mental health condition requiring specialist treatment, whether received or not, in the 5 years prior to the CVD risk

4. Communicate CVD risk

- Communicating risk is essential for patient health status understanding, informed consent and shared decision-making. See Engaging our patients, page 19
- See Resources 2–5. to assist clinicians to communicate CVD risk

5. Manage CVD risk

- Manage and address CVD risk by:
  - supporting the patient to address Lifestyle modifications, page 18
  - commencing pharmacotherapy with:
    - Blood pressure-lowering treatment. See Hypertension, page 345
    - Lipid-modifying treatment See Dyslipidaemia, page 317

6. References

- All Chronic Condition Manual references are available on the Office of Rural and Remote Health website

7. Resources

1. The online Australian cardiovascular disease risk calculator
2. Medicare compliant Health Check Forms
3. Cardiovascular disease risk communication with Aboriginal and Torres Strait Islander Peoples: Toolkit for health professionals
4. Yarning to make health decisions together – the Find Your Way shared decision-making model
5. Heart health check toolkit
6. Communicating cardiovascular risk effectively

Child safety reporting

Safety concerns can be summarised as follows

- Physical abuse:
  - bruising in non-mobile child
  - patterned bruising e.g. hand print, outline of belt
  - facial, head, neck and buttock bruising
  - fractures of bones, especially in children < 3 years
  - injury does not fit with mechanism
  - multiple presentations with injury, ingestion, minor complaints
  - failure to engage medical care for medical conditions
- Sexual abuse:
  - direct or indirect disclosures
  - trauma to genital area or anus
  - sexualised behaviour
  - adolescent pregnancy
  - STIs
  - self destructive behaviours
- Psychological/emotional abuse:
  - child belittled, constantly criticised, put down
  - child exposed to domestic violence
  - child isolated or ignored
  - child issued threats causing anguish
- Neglect:
  - non-organic failure to thrive
  - delay in milestones
  - untreated physical problems
  - anxiety about being abandoned
  - poor hygiene
  - leaving a child without appropriate supervision
- To make an online reporting form to Child safety see Resource 1.

If you believe a child is in immediate danger and an urgent response is required, phone the police and report your concerns immediately to Child Safety Regional Intake Services. See Table 1.

1. Steps to reporting a child protection concern

Step 1. Concerns

- A clinician has concerns for the safety and wellbeing of a child, young person or unborn child due to physical, sexual, psychological or emotional abuse or neglect

Step 2. Considerations

- Assessment is made with consideration to:
  - the presence of signs, disclosures, injuries and behaviours (of parent and/or the child) that heighten your concerns about the safety and wellbeing of the child
  - detrimental effects on the child's body or psychological or emotional state that are evident at the time of presentation or likely to become evident in the future
  - the nature and severity of the detrimental effects and the likelihood they will continue
  - the child's age, particularly the vulnerability of young children
  - if a parent is able and willing to protect the child from harm

Step 3. Consultation

- Consult with:
  - a line manager or colleague
  - a Child Protection Liaison Officer. See Table 2.
  - the Queensland Child Protection Guide. See Resource 2.
- Note: report concerns if consensus with colleagues is not reached

Step 4. Decision making

- **Go to Step 5.** if there is a reasonable suspicion a child has suffered, is suffering or likely to suffer significant harm and may not have a parent able and willing to protect them
- **Go to Step 6.** If your concerns do not reach the threshold for a Child Safety report, but the family would benefit from a referral to a support service

Step 5. Reporting to Child safety

- Complete the online reporting form to Child safety. See Resource 1.
- Contact Child Safety Regional Intake Service. See Table 1.
- Print, sign and file in the patient medical record. Record, the date, time and name of the person you spoke to at CS-RIS or CSAHSC
- Forward a copy to your local Child Protection Liaison Officer. See Table 2.
- **Completed**

Step 6. Supporting the family

- Refer to Family and Child Connect (Resource 4.):
  - if the family has multiple or complex needs
  - if the family requires further assessment and identification of needs
  - print and file a copy in the patient medical record
  - if this service is not available in your area contact 13FAMILY (13 32 64) for referral options
- Refer to Intensive Family Support Service (Resource 4.):
  - if the family has multiple or complex needs and consents
  - complete referral form

  - if this service is not available in your area contact 13FAMILY (13 32 64) for referral options
- **Referral completed**
- Under S159M of the Child Protection Act 1999 particular prescribed entities can refer families to Family and Child Connect or Intensive Family Support Services **without consent** to prevent a child from becoming in need of protection

2. Contacts

- If you are uncertain about **anything** contact:
  - **'000'** if child is at imminent risk of harm
  - your local Child Protection Liaison Officer. See Table 2.
  - Child Safety **After Hours** Service on 1800 177 135 (public) **or** 1300 681 513 (professional)

Table 1. Child safety Regional Intake Services (CS-RIS)

Location (QLD)	Professional contact details (not public)
Brisbane and Moreton Bay	• Phone: 1300 682 254
Sunshine Coast and Central Queensland	• Phone: 1300 703 762
Far North Queensland	• Phone: 1300 684 062
North Queensland	• Phone: 1300 706 147
South East	• Phone: 1300 679 849
South West (West Moreton – Ipswich)	• Phone: 1800 316 855
South West (Darling Downs – Toowoomba)	• Phone: 1300 683 390

Child Safety After Hours Service Centre (CSAHSC) phone **1800 177 135 (public)** or **1300 681 513 (professional)**

Table 2. Child Protection Liaison Officer (CPLO) contact list

HHS	Location (QLD)	Contact details
Cairns and Hinterland	Cairns CPU-Cairns@health.qld.gov.au	• Ph: 4226 6773
	Innisfail CPU-Innisfail@health.qld.gov.au	• Ph: 4061 1497
	Tablelands CPU-Tablelands@health.qld.gov.au	• Ph: 4092 9100
Central Queensland	Rockhampton CPU-Rockhampton@health.qld.gov.au	• Ph: 4920 6970
	Gladstone CPU-Gladstone@health.qld.gov.au	• Ph: 4976 3366 • Mob: 0409 054 141
	Emerald CPU-CentralHighlands@health.qld.gov.au	• Ph: 4983 9700 • Mob: 0428 794 912
	Biloela CPLOBiloela@health.qld.gov.au CPU-Banana@health.qld.gov.au	• Ph: 4992 7000

Table 2. Child Protection Liaison Officer (CPLO) contact list *(continued)*

Central West	Longreach CPU-CentralWest@health.qld.gov.au	• Ph: 4652 5500
Children's Health Queensland	Children's Hospital Child Protection and Forensic Medical Service (CPFMS) childprotectionCHQ@health.qld.gov.au	• Ph: 3068 2660
	CPFMS Inala/QEII CPU-QEII@health.qld.gov.au	• Ph: 3275 5353
	CPFMS Bayside/Redlands CPU-Bayside@health.qld.gov.au	• Ph: 3488 4256
Darling Downs	Toowoomba CPU-Toowoomba@health.qld.gov.au	• Ph: 4616 5185 • Mob: 0418 762 027
	Dalby CPU-WesternDowns@health.qld.gov.au	• Ph: 4672 4000 • Mob: 0437 929 020
	Warwick CPU-SouthernDowns@health.qld.gov.au	• Ph: 4660 3811 • Mob: 0427 029 972
	Kingaroy CPU-SouthBurnett@health.qld.gov.au	• Ph: 4162 0400 • Mod: 0429 907 393
Gold Coast	Southport CPU-GoldCoast@health.qld.gov.au	• Ph: 5687 1374
Mackay	Mackay, Moranbah Clermont, Dysart CPU-Mackay@health.qld.gov.au	• Ph: 4885 7270
	Whitsunday, Proserpine, Bowen & Collinsville CPU-Whitsunday@health.qld.gov.au	• Ph: 4813 9412
Mater Misericoardiae	Mater CPU, South Brisbane cplo@mater.org.au	• Ph: 3163 8936 • Mob: 0401 285 944 • Mob: 0481 034 246
Metro North	Redcliffe CPU-Redcliffe@health.qld.gov.au	• Ph: 3883 7228
	Caboolture CPU-Caboolture@health.qld.gov.au	• Ph: 5433 8573
	The Prince Charles Hospital CPU-PrinceCharlesHosp@health.qld.gov.au	• Ph: 3139 5259 • Ph: 3139 5276
	Royal Brisbane and Women's Hospital CPU-RBW@health.qld.gov.au	• Ph: 3646 8916 • Ph: 3647 0700
Metro South	Logan/Beaudesert Hospital CPU-LoganBeaudesert@health.qld.gov.au	• Ph: 3089 6882 • Ph: 3089 6883 • Ph: 3089 6884
	Princess Alexandra Hospital CPU-PAH@health.qld.gov.au	• Ph: 3176 2610
	QEII CPU-QEII@health.qld.gov.au	• Ph: 3275 5353
	Redland Hospital CPU-Bayside@health.qld.gov.au	• Ph: 3488 4256

Table 2. Child Protection Liaison Officer (CPLO) contact list *(continued)*

North West	Mount Isa CPU-MtIsa@health.qld.gov.au	• Ph: 4744 4887
South West	Roma CPU-Roma@health.qld.gov.au	• Ph: 4624 2700 • Mob: 0418 229 099
	Charleville CPU-Charleville@health.qld.gov.au	• Ph: 4621 2389 • Ph: 4621 2200
Sunshine Coast	Sunshine Coast University & Gympie Hospitals CPU-SunshineCoast@health.qld.gov.au	• Ph: 5202 4488
Torres and Cape CPU-TorresCape@health.qld.gov.au	Northern Sector (Torres Strait Islands, Northern Peninsula Area)	• Ph: 4030 6144 • Mob: 0419 764 758
	Weipa (Weipa, Aurukun, Napranum, Old Mapoon, Lockhart River, Coen)	• Mob: 0428 647 400
	Southern Sector (Cooktown, Hopevale, Laura, Kowanyama, Pormpuraaw, Wujal Wujal)	• Mob: 0428 739 471
Townsville TSV-CPA-CPLO@health.qld.gov.au	Townsville CPU-Townsville@health.qld.gov.au	• Ph: 4433 1818
	Ayr CPU-Bowen@health.qld.gov.au	• Ph: 4783 0860 • Mob: 0477 749 680
West Moreton	Ipswich CPU-WestMoreton@health.qld.gov.au	• Ph: 3810 1132 • Ph: 3810 1460
Wide Bay	Bundaberg CPU-Bundaberg@health.qld.gov.au	• Ph: 4150 2736
	Fraser Coast CPU-FraserCoast@health.qld.gov.au	• Ph: 4325 6210 • Ph: 4122 8730 • Mob: 0418 716 939

3. Legislative requirements

- Under the *Child Protection Act 1999 (Section 13E (1)* doctors and registered nurses are mandatory reporters. See Resource 3.
- All Queensland Health staff have a duty of care to make a report to Child Safety Regional Intake Services if:
  - a reasonable suspicion that a child has suffered, is suffering, or is at unacceptable risk of suffering significant harm caused by physical and sexual abuse and may not have a parent able or willing to protect them from harm
  - clinicians do not have to investigate or prove that a parent may not be able or willing to protect children from harm
  - this does not preclude mandatory reporters from reporting significant harm caused by emotional/psychological abuse or neglect

4. Resources

1. Make a child safety report here or Queensland Health Staff here
2. Child protection guide or Queensland Child Protection Guide
3. Current version of the Child Protection Act 1999
4. Family and Child Connect and Intensive Family Support

The Australian type 2 diabetes risk assessment tool

- Risk assessment should begin at age 45 and from age 15 in Aboriginal and Torres Strait Islander people. See the Online Diabetes risk assessment tool

1. Your age group

Under 35 years	0 points
35–44 years	2 points
45–54 years	4 points
55–64 years	6 points
65 years or over	8 points

2. Your gender

Female	0 points
Male	3 points

3. Your ethnicity/country of birth

3a. Are you of Aboriginal, Torres Strait Islander, Pacific Islander or Maori descent?

No	0 points
Yes	2 points

3b. Where were you born?

Australia	0 points
Asia, India, Middle East, North Africa, Southern Europe	2 points
Other	0 points

4. Have either of your parents, or any of your brothers or sisters been diagnosed with diabetes (type 1 or type 2)?

No	0 points
Yes	3 points

5. Have you ever been found to have high blood glucose (sugar) for example, in a health examination, during an illness, during pregnancy?

No	0 points
Yes	6 points

6. Are you currently taking medication for high blood pressure?

No	0 points
Yes	2 points

7. Do you currently smoke cigarettes or any other tobacco products on a daily basis?

No	0 points
Yes	2 points

8. How often do you eat vegetables or fruit?

Every day	0 points
Not every day	1 points

9. On average, would you say you do at least 2.5 hours of physical activity per week (for example, 30 minutes a day on 5 or more days a week)?

Yes	0 points
No	2 points

10. Your waist measurements taken below the ribs (usually at the level of the navel and while standing)

Waist measurement (cm) ☐

For Aboriginal or Torres Strait Islander or Asian descent

Men	Women		
< 90 cm	< 80 cm	☐	0 points
90–100 cm	80–90 cm	☐	4 points
> 100 cm	> 90 cm	☐	7 points

For all others

Men	Women		
< 102 cm	< 88 cm	☐	0 points
102–110 cm	88–100 cm	☐	4 points
> 110cm	> 100 cm	☐	7 points

Add up your points to assess Your risk of developing type 2 diabetes within 5 years*

☐

☐ **5 or less: Low risk**
Approximately one person in every 100 will develop diabetes.

☐ **6–11: Intermediate risk**
For scores 6–8, approximately one person in every 50 will develop diabetes. For scores of 9–11, approximately one person in every 30 will develop diabetes.

☐ **12 or more: High risk**
For scores of 12–15, approximately one person in every 14 will develop diabetes. For scores of 16–19 approximately one person in every 7 will develop diabetes. For scores of 20 and above, approximately one person in every 3 will develop diabetes

* The overall score may over estimate the risk of diabetes in those aged < 25 years

- **If you scored 6–11 points you may be at increased risk of type 2 diabetes**
  - Discuss your score and your individual risk with your doctor. Improving your lifestyle may help reduce your risk of developing type 2 diabetes

- **If you scored > 12 points you may have undiagnosed type 2 diabetes or be at high risk of developing the disease**
  - See your doctor about having a fasting blood glucose test. Act now to prevent type 2 diabetes

1. References

- All Chronic Conditions Manual references are available on the Office of Rural and Remote Health website

2. Resources

1. Online Diabetes risk assessment tool

CHA_2DS_2-VA

Information [1,–3]

- CHA_2DS_2-VA is a tool that evaluates the risk of stroke in patients with Atrial fibrillation, page 226:
  - **C**ongestive heart failure
  - **H**ypertension
  - **A**ged ≥ 75 years
  - **D**iabetes mellitus
  - Previous **S**troke
  - **V**ascular disease
  - **A**ged 65–74 years
- See an Online CHA_2DS_2-VA calculator

1. Calculator

Table 1. CHA_2DS_2-VASc calculator [1–3]

Risk factor	Score
Congestive heart failure • Signs/symptoms of heart failure or objective evidence of reduced left ventricular ejection fraction	1
Hypertension • Resting blood pressure > 140/90 mmHg on ≥ 2 occasions **OR** current antihypertensive pharmacological treatment	1
Aged ≥ 75 years	2
Diabetes mellitus • Fasting glucose > 7 mmol/L (> 125 mg/dL) **OR** treatment with oral hypoglycaemic agent and/or insulin	1
Stroke • Any history of stroke, transient ischaemic attack, or thromboembolism	2
Vascular disease • Previous MI, peripheral artery disease, or aortic plaque	1
Aged 65–74 years	1

Scoring

- A score ≥ 2 (men) or ≥ 3 (women) oral anticoagulation is **recommended** for those with N-VAF
- A score 1 (men) or 2 (women) **consider** oral anticoagulation for those with N-VAF
- A score 0 (no clinical risk factors) anticoagulation (or antiplatelet medicine) **not recommended** for those with N-VAF

2. Considerations [1–3]

- Low-risk patients who are not anticoagulated should be re-evaluated using the CHA_2DS_2-VA score annually
- Stroke risk factors may change over time due to aging or development of new comorbidities
- Assessment of bleeding using HAS-BLED, page 437 and other risks should continue throughout treatment
- Educate all patients of the risks and benefits associated with anticoagulant medicines, so they can contribute to management decisions
- Favour non-vitamin K oral anticoagulants (NOACs; dabigatran, rivaroxaban, apixaban) over warfarin as they are:
  - as good as or better in reducing stroke and systemic embolism
  - have a lower risk of intracranial haemorrhage as a side effect
  - easier for patients and clinicians to manage and use
- If a patient is already on warfarin it is reasonable to change to a NOAC
- Antiplatelet therapy is not recommended for stroke prevention regardless of stroke risk

3. References

- All Chronic Conditions Manual references are available on the Office of Rural and Remote Health website

HAS-BLED

Information [1–4]

- HAS-BLED is a tool to assess bleeding risk and support clinical decision making for patients on anticoagulant therapy:
  - **H**ypertension
  - **A**bnormal renal/liver function
  - **S**troke
  - **B**leeding history or predisposition
  - **L**abile international normalized ratio (INR)
  - **E**lderly (>65 years)
  - **D**rugs (medicines) and alcohol concomitantly
- See HAS-BLED online calculator

1. Calculator [1–4]

Table 1. HAS-BLED calculator

Risk factor	Score
Hypertension • Systolic blood pressure > 160 mmHg	1
Abnormal renal function • Dialysis, renal transplantation and/or serum creatinine ≥ 200 mmol/L	1
Abnormal liver function • Chronic liver disease (e.g. cirrhosis) or biochemical evidence of significant hepatic derangement (e.g. bilirubin twice upper limit of normal in association with AST / ALT / ALP 3 x upper limit normal etc.)	1
Stroke	1
Bleeding tendency or predisposition • History of intracranial bleeding, bleeding requiring hospitalisation, haemoglobin fall >20mg/mL, and/or transfusion	1
Labile international normalised ratio (INR) • Time in therapeutic range < 60%	1
Elderly • Age > 65 years	1
Medicines that predispose to bleeding • Aspirin, clopidogrel, NSAIDs	1
Alcohol use • Excessive alcohol ≥ 8 drinks/week	1

Scoring
- A score ≥ 3 equates to high risk of bleeding; caution and regular review is recommended
- A high score does not necessarily indicate avoiding anticoagulant medicines

2. Considerations [1–4]

- In patients with a **high bleeding risk**, all bleeding risk factors should be identified addressed and monitored throughout treatment
- **Modifiable bleeding risk factors:**
  - hypertension i.e. SBP > 160 mmHg
  - labile INR or time in therapeutic range < 60% if taking warfarin
  - medicines that predispose patients to bleeding e.g. aspirin, clopidogrel, NSAIDs
  - excessive alcohol consumption i.e. ≥ 8 drinks/week
- **Potentially modifiable bleeding risk factors:**
  - anaemia
  - impaired kidney function
  - impaired liver function
  - reduced platelet count or function
- **Non-modifiable bleeding risk factors:**
  - age > 65 years, or ≥ 75 years
  - history of major bleeding
  - previous stroke
  - dialysis-dependent kidney disease
  - or kidney transplant
  - cirrhotic liver disease
  - malignancy
  - genetic factors
- Educate patients about the benefits and risks of anticoagulant medicines, so they can contribute to management decisions
- Favour non-vitamin K oral anticoagulants (NOACs; dabigatran, rivaroxaban, apixaban) over warfarin as they are:
  - as good as or better in reducing stroke and systemic embolism
  - have a lower risk of intracranial haemorrhage as a side effect
  - easier for patients and clinicians to manage and use
- If a patient is already on warfarin it is reasonable to change to a NOAC
- Antiplatelet therapy is not recommended for stroke prevention regardless of stroke risk

3. References

- All Chronic Conditions Manual references are available on the Office of Rural and Remote Health website

4. Resources

1. HAS-BLED online calculator

Safe use of warfarin

Information [1–4]

- Therapeutic anticoagulation effect takes 2–3 days when first commencing warfarin
- When immediate anticoagulation is required, concurrent parenteral anticoagulant is needed until INR is therapeutic
- For stroke prevention in Atrial fibrillation, page 226, warfarin is commenced without concurrent parenteral anticoagulant

Use in pregnancy

- Avoid in pregnancy, safe during breastfeeding

1. Patient education

- Always take the same brand of warfarin tablets unless advised by health professional
- Take warfarin tablets at about the same time every day
- Consider patient's ability to break scored tablets when prescribing doses
- Use a booklet to record the days after taking a dose so that any missed doses can easily be identified. See Resource 1.
- Warfarin is affected by vitamin K which is found in certain foods e.g. green leafy vegetables. Eat a normal, balanced diet without dramatic changes, to keep intake of vitamin K stable
- Avoid drinking large amounts of cranberry juice as this may increase the effects of warfarin
- Maintain appointments for regular blood tests in case the dose of warfarin needs adjusting. The health professional will advise the next dose to take when the test result is known

Many medicines interact with warfarin. Always speak to the health professional before starting or stopping any medicines, vitamin supplements, herbal or over-the-counter products or marijuana. See Resource 2.

- Contact a health professional if feeling unwell for any reason including:
  - unexplained bruising
  - bleeding
  - pink, red or dark brown urine
  - red or black faeces
  - bleeding from gums or nose
  - dizziness
  - trouble breathing or chest pain
  - severe headache
  - unusual pain or weakness
  - dark, purplish or mottled fingers or toes
  - vomiting or coughing up blood
  - excessive menstrual bleeding

2. Indications for therapy

Table 1. Indications for warfarin therapy duration and target INR [1–4]

Indication	Minimum recommended duration	Target INR range
Deep vein thrombosis (DVT) or Pulmonary embolism (PE)	• Dependent on specific clinical factors	2–3
Non-valvular Atrial fibrillation, page 226 **with** CHA2DS2-VA, page 435 **score > 1**	• Indefinite	2–3
Elective cardioversion	• 3 weeks before scheduled cardioversion and 4 weeks after successful cardioversion	2–3
After stent placement and CHA2DS2-VA, page 435 **score > 1**	• Indefinite. Anti-platelet agent combination therapy is short-term. Contact cardiac surgeon or cardiologist	2–3
Mitral stenosis	• Indefinite	2–3
Mechanical prosthetic heart valves	• Indefinite	2–3 for aortic 2.5–3.5 for mitral
Bioprosthetic (tissue) valves	• 1–6 months post implant according to cardiologist	According to cardiologist

3. Initiating therapy

- Use a warfarin recording form. See Resource 3.

Table 2. Regimen for initiation of warfarin [1-4]

Day to take INR test	INR (target 2–3)	Daily warfarin dose until next INR test
Patients at **LOW** risk of thrombosis (i.e. Atrial fibrillation, page 226)		
Day 1 initiation	Obtain baseline	• 3 mg provided baseline INR < 1.4 • If INR > 1.4 consider lower starting dose

Table 2. Regimen for initiation of warfarin *(continued)* [1-4]

Day to take INR test	INR (target 2–3)	Daily warfarin dose until next INR test
Patients at **LOW** risk of thrombosis (i.e. Atrial fibrillation, page 226)		
Day 3	< 1.3	4 mg
	1.3	3 mg
	1.4	2.5 mg
	1.5	2.5 mg
	1.6	2 mg
	1.7	2 mg
	1.8	1.5 mg
	1.9	1.5 mg
	2	1.5 mg
	2.1	1 mg
	2.2	1 mg
	2.3	0.5 mg
	2.4	0.5 mg
	2.5	0.5 mg
Day 3	> 2.5	• **Cease warfarin** • Assess causes and indication • Repeat INR in 3–5 days • If warfarin indicated, restart at lower dose
Day 6 onwards then wkly	• Continue INR monitoring until stabilised. See Table 3.	
Patients at **HIGH** risk of thrombosis (e.g. DVT) with a short-acting parenteral anticoagulant during the first few days		
Day 1 initiation	**< 1.4**	5 mg
Day 2	**< 1.8**	5 mg
	1.8–2	1 mg
	> 2	Nil
Day 3	**< 2**	5 mg
	2–2.5	4 mg
	2.6–2.9	3 mg
	3–3.2	2 mg
	3.3–3.5	1 mg
	> 3.5	Nil

Table 2. Regimen for initiation of warfarin *(continued)* [1-4]

Day to take INR test	INR (target 2–3)	Daily warfarin dose until next INR test
Patients at **LOW** risk of thrombosis (i.e. Atrial fibrillation, page 226)		
Day 4	**< 1.4**	10 mg
	1.4–1.5	7 mg
	1.6–1.7	6 mg
	1.8–1.9	5 mg
	2–2.3	4 mg
	2.4–3	3 mg
	3.1–3.2	2 mg
	3.3–3.5	1 mg
	> 3.5	Nil
Day 5 onwards	• Continue INR monitoring until stabilised. See Table 3. • Minimum duration usually 3 months	

Modify for patients with mechanical heart valves to target higher INR range of 2.5 – 3.5

4. INR monitoring frequency

- Warfarin therapy requires regular monitoring of international normalised ratio (INR) levels
- Consider alternative anticoagulant therapy for patients with a persistently high or labile INR

Table 3. INR monitoring frequency [2]

INR	Low risk of thrombosis	High risk of thrombosis
< 2	• **Weekly** until 2 consecutive results in target range	• **Daily** until 2 consecutive results in target range
2–3	• If 2 consecutive results in target range: – switch to **fortnightly** for a further 2–3 consecutive results in target range – then every **4 to 6 weeks** if results remain in target range • If INR remains very stable, it is reasonable to extend monitoring frequency to 8 weeks	• If 2 consecutive results in target range: – switch to **3–5 days** for a further 2 consecutive results in target range – then **weekly** for a further 2–3 consecutive results in target range – then **fortnightly** for a further 2–3 consecutive results in target range – then every **4 to 6 weeks** if results remain in target range • If INR remains very stable, it is reasonable to extend monitoring frequency to 8 weeks
> 3	• Every **2–3 days** until 2 consecutive results in target range	• **Daily** until 2 consecutive results in target range

Modify for patients with mechanical heart valves to target higher INR range of 2.5 – 3.5

5. Maintenance therapy

- For use after stabilisation or following initiation
- Recommendations are based on compliance with total weekly warfarin regimen and consistent diet

Table 4. Warfarin dosing regimen for INR target range of 2–3 [2]

INR	Dosage adjustment	
< 1.5	• Increase wkly dose by 20% averaged out over the week	Recheck INR according to Table 3.
1.5 – 1.9	• Increase wkly dose by 10% averaged out over the week	
2 – 3	• **Target INR range. No change required**	
3.1 – 3.4	• Decrease wkly dose by 10% averaged out over the week **OR** • No change depending on clinical judgement of previous INR results	
3.5 – 3.9	• Consider omitting one dose **AND** • Decrease wkly dose by 20% averaged out over the week	
4 – 4.5	• Decrease wkly dose by 20% averaged out over the week **OR** • Withhold next dose based on risk factors for increased sensitivity to warfarin	
> 4.5	• Refer to 6. Managing bleeding or overdose. See Table 5.	

Modify for patients with mechanical heart valves to target higher INR range of 2.5 – 3.5

6. Managing bleeding or overdose

6.1 Patient risk factors [1–4]

- Consider admission for specialist treatment (e.g. blood products) and monitoring
- **Patient risk factors** for **increased risk of bleeding** during warfarin therapy are:
  - > 75 years age
  - medical history of bleeding
  - baseline INR >1.4
  - concomitant drugs affecting warfarin metabolism. See Resource 3.
  - comorbidities i.e. Hypertension, page 345, Stroke and transient ischaemic attack, page 413, Coronary heart disease, page 264, Chronic kidney disease, page 242, hepatic impairment, low platelets or cancer
  - major surgery within last 2 weeks
  - patients nil by mouth, not eating or malnourished

6.2 Management of bleeding [1–4]

- Reverse anticoagulation effects of warfarin according to Table 5.
- Management options include Vitamin K, Prothrombin complex concentrate (PCC) or Fresh frozen plasma (FFP)

Table 5. Management of bleeding or warfarin overdose [2]

Presentation	Recommendations
Life-threatening or critical organ bleeding and INR > 1.5	• **CEASE WARFARIN. Seek specialist advice. Give:** – phytomenadione **(vitamin K #)** 5–10 mg IV **and** – prothrombin complex concentrate (PCC) 50 units/kg IV. (See Anticoagulant Guideline for Hospitalised Adult Patients. Resource 4.) – if **PCC unavailable**, give FFP 15 mL/kg • Assess INR frequently until clinically stable.
Clinically significant bleeding i.e. not life-threatening or associated with a critical organ and INR > 1.5	• **CEASE WARFARIN. Seek specialist advice. Give:** – phytomenadione **(vitamin K #)** 5–10 mg IV **and** – PCC (See Anticoagulant Guideline for Hospitalised Adult Patients. See Resource 4.) – if PCC unavailable, give FFP 15 mL/kg. • Assess INR frequently until clinically stable
Minor bleeding with any INR	• Omit warfarin • Repeat INR the following day and adjust dose to target INR in therapeutic range according to Table 4. • If **bleeding risk is high Φ** or INR is > 4.5 consider: – phytomenadione **(vitamin K #)** 1–2 mg orally or 0.5–1 mg IV
No Bleeding and INR > 10	• **CEASE WARFARIN. Seek specialist advice. Give:** – phytomenadione **(vitamin K #)** 2–5 mg orally (note: the higher dose can lead to delayed therapeutic INR target range when recommencing warfarin) or 0.5–1 mg IV – check INR in 12–24 hours if only vitamin K administered – If **bleeding risk is high Φ** consider PCC (See Anticoagulant Guideline for Hospitalised Adult Patients. Resource 4.) – check INR at 30–60 minutes and 12–24 hours if PCC has been administered. Monitor every 1–2 days for a week • Resume lower dose once INR approaches therapeutic range
No Bleeding and INR 4.5 – 10	• Cease warfarin • Address reasons for elevated INR and 6.1 Patient risk factors • If **bleeding risk is high Φ** give: – phytomenadione **(vitamin K #)** 1–2 mg orally or 0.5–1 mg IV – check INR in 12–24 hours • Resume lower dose once INR approaches therapeutic range
No Bleeding and INR > therapeutic range but < 4.5	• Reduce or withhold next dose of warfarin based on 6.1 Patient risk factors • Resume lower dose once INR approaches therapeutic range • If INR is minimally above therapeutic range (i.e. within 10%) dose reduction is generally not necessary

- **#** Konakion MM®, the IV preparation of phytomenadione (vitamin K), may be given orally. **It is NOT for intramuscular injection**
- **Φ** High bleeding risks are a major bleed within last 4 weeks, surgery within last 2 weeks, thrombocytopenia with a platelet count < 50 × 109/L, liver disease or concurrent antiplatelet or NSAID use

7. Considerations [1–4]

- Stroke and bleeding risk factors will change due to ageing, comorbidities or lifestyle changes
- Assess HAS-BLED, page 437 and CHA2DS2-VA, page 435 frequently throughout treatment
- Non-vitamin K oral anticoagulants (NOACs; apixaban, dabigatran or rivaroxaban) are recommended in preference to warfarin as they are:
  - as good as or better than warfarin in reducing stroke and systemic embolism
  - have a lower risk of intracranial haemorrhage as a side effect
  - easier for patients and clinicians to manage and use
  - if a patient is already on warfarin it is reasonable to change to NOAC if indicated
- Antiplatelet therapy is not recommended for long-term secondary prevention of stroke in patients with atrial fibrillation regardless of stroke risk
- In patients without Atrial fibrillation, page 226 or another source of cardiogenic embolism, the use of warfarin is not recommended

8. References

- All Chronic Conditions Manual references are available at the Office of Rural and Remote Health website

9. Resources

1. Patient warfarin monitoring and education booklet
2. Warfarin drug interactions
3. Non-inpatient rural and remote warfarin record
4. Anticoagulant Guideline for Hospitalised Adult Patients
5. Management of warfarin in the community

Index

Index

D

G

M

O

P

R

S

T

V

PAGE LEFT INTENTIONALLY BLANK