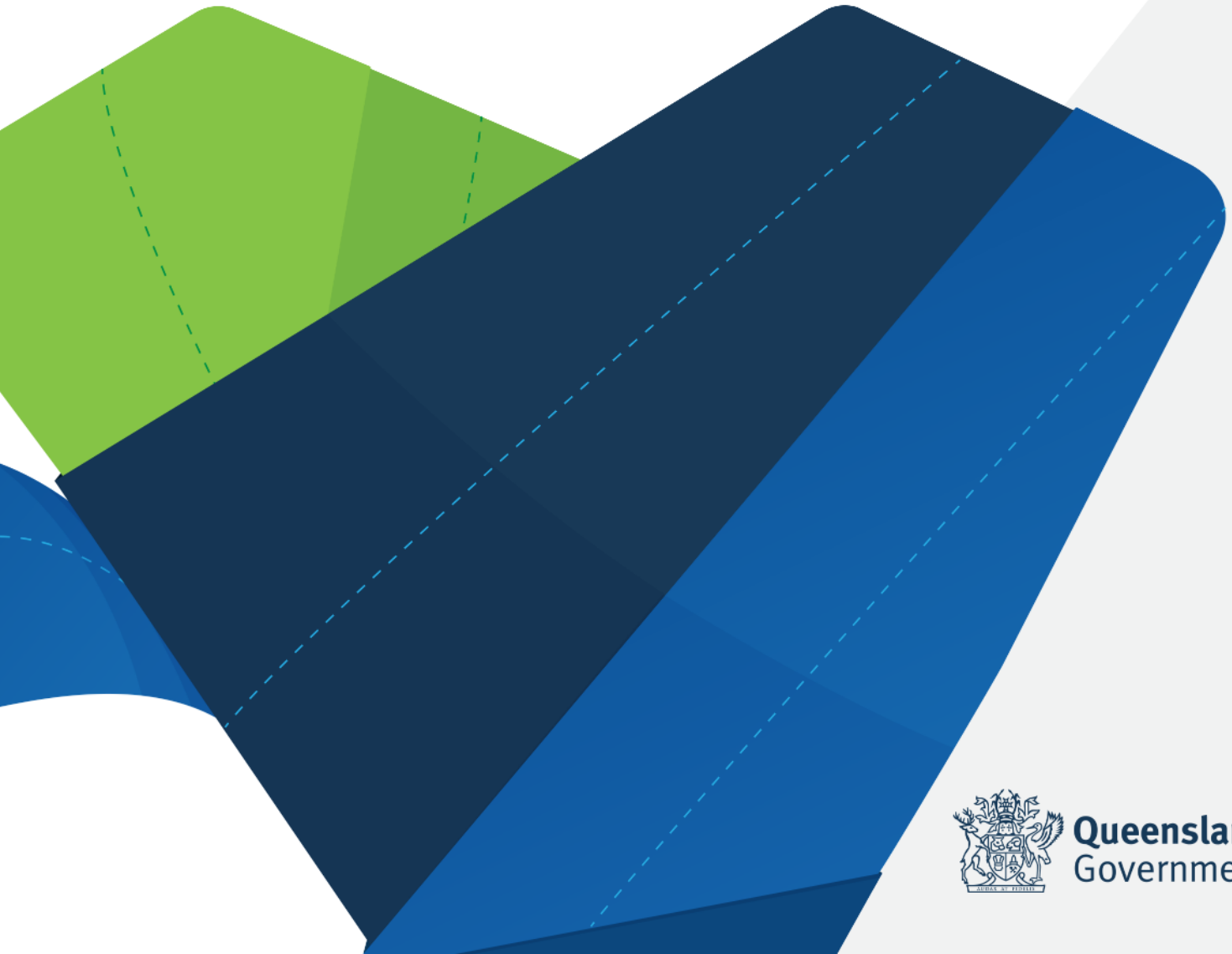
Queensland Health

2023 Tuberculosis Epi Summary

Communicable Diseases Branch



Queensland Government

Abbreviations

The following abbreviations will be used in this report:

DST	Drug susceptibility testing
HHS	Hospital and health service
HIV	Human immunodeficiency virus
MDR-TB	Multi-drug resistant TB
MSCTBS	Metro South Clinical Tuberculosis Service
NAT	Nucleic acid (amplification) testing
TB	Tuberculosis
TBCU	Tuberculosis Control Unit

Introduction

Data for this report were extracted from notifiable diseases register (Notifiable Conditions System – NoCS) on 9 May 2024 by notification date for the period 1 January 2019 – 31 December 2023. Population data was sourced from Total estimated resident population of Queensland prepared by Statistical Services Branch, as at November 2023. Up to date TB data are available in the Queensland Health Weekly Notifiable Conditions Report here.

Data are subject to change as a result of ongoing data quality activities.

Notifications

There were 189 notifications of active TB in 2023 (Figure 1). Ninety-one percent were laboratory confirmed by culture or NAT and 9 percent were clinical diagnoses only. The notification rate of TB in Queensland in 2023 increased to 3.5 per 100 000 population from 2.5 per 100 000 population in 2022 which was the lowest notification rate since 2005. The 2023 notification rate is consistent with rates seen during 2006 to 2021 notification rates of between 3 and 4 notifications per 100 000 population per year.

The breakdown of TB cases managed by TBCU over the last 5 years shows an increase in proportion of TB cases managed by MSCTBS and Rockhampton and a reduction in numbers of TB cases in Cairns (Table 1).

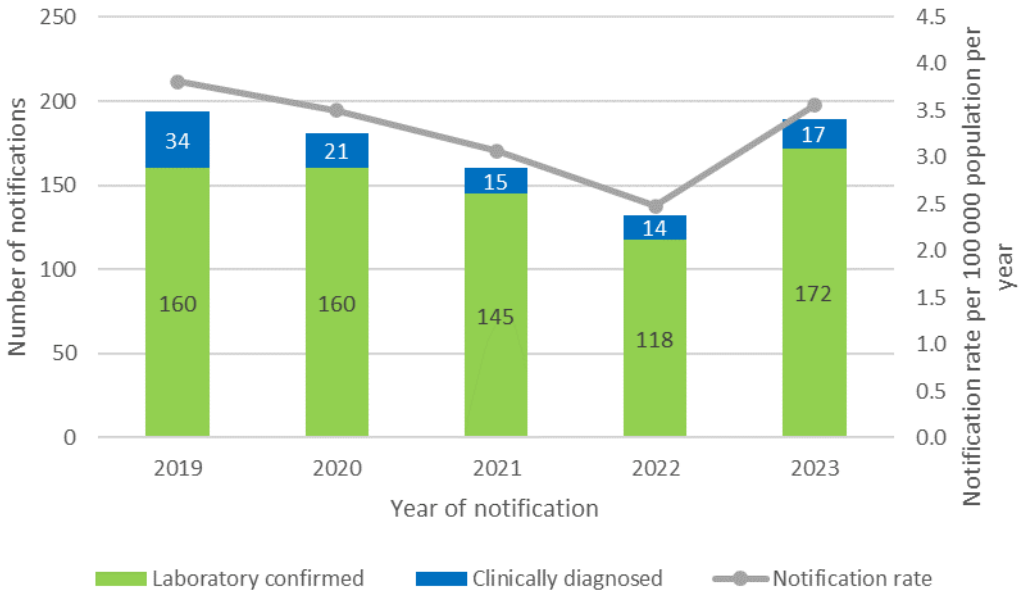


Figure 1 Number of notified cases of tuberculosis by diagnosis type and notification rate, Queensland 2019-2023

Table 1 Number of notified cases of tuberculosis by TBCU, Queensland 2019-2023

Managing TBCU	2019		2020		2021		2022		2023	
	n (%)		n (%)		n (%)		n (%)		n (%)	
Metro South	138	(71%)	138	(76%)	117	(73%)	100	(76%)	154	(81%)
Cairns	26	(13%)	19	(10%)	23	(14%)	11	(8%)	11	(6%)
Rockhampton	2	(1%)	7	(4%)	8	(5%)	5	(4%)	9	(5%)
Toowoomba	6	(3%)	2	(1%)	4	(3%)	3	(2%)	6	(3%)
Townsville	10	(5%)	10	(6%)	4	(3%)	8	(6%)	5	(3%)
Mackay Chest Clinic	6	(3%)	3	(2%)	1	(1%)	2	(2%)	2	(1%)
Torres and Cape	6	(3%)	2	(1%)	3	(2%)	3	(2%)	2	(1%)
QLD Total	**194**	**(100%)**	**181**	**(100%)**	**160**	**(100%)**	**132**	**(100%)**	**189**	**(100%)**

Demographics

In 2023, there were 84 females (44%) and 105 males (56%) notified with TB. The age range of cases was 0 to 94 years, with a median age of 42 years. The most frequently notified age groups were between 25-39 years of age (Figure 2). There were a small number of children aged under 15 years (6, 3%) notified with TB in 2023.

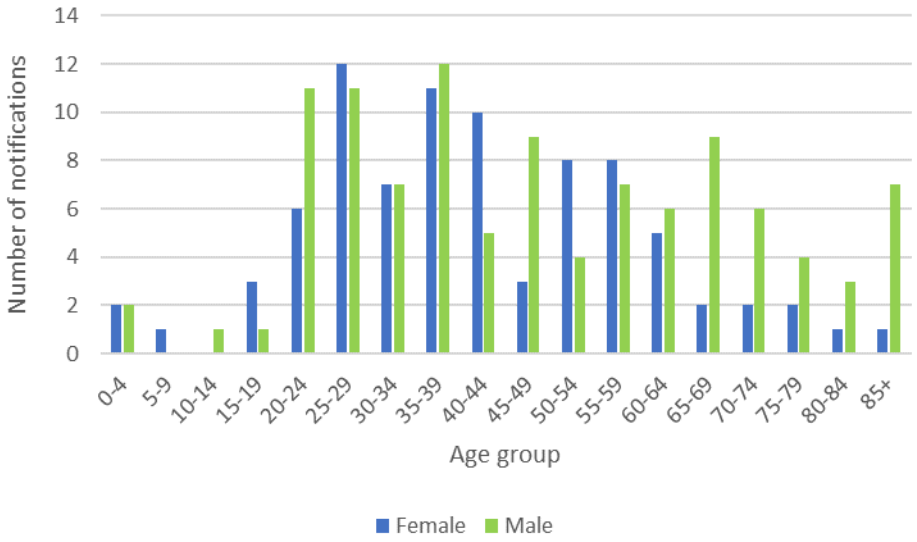


Figure 2 Number of notified cases of tuberculosis by sex and age group, Queensland 2023

Cases were predominantly residents of metropolitan Brisbane with a total of 61% of cases residing in Metro South and Metro North HHS areas in 2023 (Table 2). However, notification rates of TB are highest in Torres and Cape, followed by Cairns and Hinterland and Metro South HHS regions.

Table 2 Tuberculosis notifications (number and notification rate) by hospital and health service of residence, Queensland 2019-2023

HHS of residence	2019	2020	2021	2022	2023	Total 2019-2023	Rate 2019-2023
Torres and Cape HHS	2	1	2	3	2	10	7.7
Cairns and Hinterland HHS	25	18	23	10	9	85	6.5
North West HHS	1	1	1	1	2	6	4.2
Townsville HHS	9	8	3	4	3	27	2.2
Mackay HHS	6	4	1	2	2	15	1.6
Central Queensland HHS	1	8	7	6	9	31	2.8
Wide Bay HHS	6	5	7	5	4	27	2.4
Sunshine Coast HHS	6	8	4	4	8	30	1.3
Metro North HHS	33	35	27	35	33	163	3.1
Metro South HHS	65	74	62	41	82	324	5.3
Darling Downs HHS	4	2	4	2	6	18	1.2
West Moreton HHS	9	5	6	5	8	33	2.1
Gold Coast HHS	15	6	8	9	14	52	1.6
Overseas residents	12	6	5	5	7	35	-
QLD Total	**194**	**181**	**160**	**132**	**189**	**856**	**3.3**

Twenty-three (12%) persons notified with TB in Qld during 2023 were born in Australia (Table 3). Of these 23 cases, 6 (26%) were First Nations Queenslanders. One hundred and sixty-six (88%) cases were born overseas, of which 161 (97%) were born in a country with high TB incidence (a current TB incidence of 40 cases per 100, 000 population or greater).

Table 3 Tuberculosis cases by country of birth, Queensland 2019-2023

Country of birth	Year of notification					2019-2023	
	2019	2020	2021	2022	2023	Total	% Total
Philippines	24	33	27	29	29	142	17%
India	25	24	24	12	25	110	13%
Australia	30	19	19	12	23	103	12%
Papua New Guinea	19	16	12	10	13	70	8%
Vietnam	9	11	15	9	11	55	6%
Nepal	10	16	9	9	5	49	6%
China*	8	9	4	5	8	34	4%
Indonesia	6	4	3	7	8	28	3%
Thailand	6	6	2	3	5	22	3%
Myanmar	7	2	3	2	5	19	2%
Bhutan	2	5	1	5	4	17	2%
Zimbabwe	1	4	2	2	3	12	1%
Afghanistan	2	1	3	1	5	12	1%
England	2	2	1	3	2	10	1%
New Zealand	2	2	3	3	0	10	1%
Other	41	27	32	20	43	163	19%
QLD Total	194	181	160	132	189	856	100%

*Excludes SARS and Taiwan

There was a single PNG case notified as a resident of villages covered under the provisions of the Torres Strait Treaty Act 1984. Australian citizens and permanent residents accounted for 57% of TB cases in 2023 (Table 4).

Table 4 Tuberculosis cases by visa status, Queensland 2023

Visa status	**Number of cases**	**(%)**
Australian born	23	(12%)
Overseas born Australian citizens or Permanent Resident	85	(45%)
Overseas Visitor	15	(9%)
Overseas Student	29	(15%)
Refugee/Humanitarian	7	(4%)
Treaty Visitation Rights (PNG/TSI treaty zone)	1	(1%)
Unauthorised Person	0	(0%)
Other	29	(15%)
Unknown	0	(0%)
Total	**189**	**(100%)**

Clinical presentation

The majority of TB cases in 2023 were new cases (176, 93%) with a small number of relapse cases following treatment overseas (n=11) or in Australia (n=2). The reasons for initial presentation were TB symptoms TB for 115 cases (61%) active TB screening for 27 cases (14%) and an incidental diagnosis when presenting for an unrelated illness for 47 cases (25%).

Sixty-eight percent of cases had pulmonary TB involvement (Table 5). The most common extrapulmonary sites of disease were lymph node and pleural disease (Table 6).

Table 5 Number of tuberculosis cases by pulmonary involvement, Queensland 2023

Pulmonary involvement	Number of cases	(%)
Pulmonary only	101	(53%)
Pulmonary plus other sites	28	(15%)
Extra pulmonary only	60	(32%)
Total	**189**	**(100%)**

Table 6 Extra pulmonary sites of disease reported in tuberculosis cases, Queensland 2023*

Sites of disease	Number of cases
Lymph node	39
Pleural	22
Bone /Joint	8
Abdominal	8
Central Nervous system	7
Other	5
Genitourinary	5
Pericardial	2
Eye	2
Soft tissue	1

*More than one site of disease may be reported per person

Ninety percent (n=170) of 2023 TB cases were tested for HIV, of which two were coinfected with HIV.

Drug susceptibility testing results were available for 169 of 172 laboratory confirmed cases in 2023. Drug susceptibility results indicate the majority of 2023 cases have fully susceptible disease (Table 7). There was one case of MDR-TB in a person born in a high TB incidence country.

Table 7 Drug susceptibility testing of laboratory confirmed cases, Queensland 2023.

Drug susceptibility	Number	(%)
Fully susceptible	124	(72%)
Sensitive to rifampicin in the absence of any other testing	15	(9%)
Isoniazid (H) resistance (but susceptible to rifampicin R)	11	(6%)
Rifampicin (R) resistant	2	(1%)
Rifampicin resistance indeterminate	3	(2%)
Multi-drug resistance (resistant to at least H & R)	1	(1%)
Pyrazinamide resistance	13	(8%)
No DST data*	3	(2%)
Total	**172**	**(100%)**

*There were 2 patients diagnosed via in-house PCR where no susceptibility information is available, a third patient grew non-tuberculosis mycobacterium from a separate specimen.

There was 1 case diagnosed during 2023 related to the ongoing MPT64 antigen negative outbreak. At the time of this report (July 2024) there were 51 cases identified within the outbreak including 46 confirmed cases linked by whole genome sequencing (WGS) and 3 probable cases epi-linked to a confirmed case where WGS data is not available. First Nations

people residing in Northern Queensland are over-represented in this outbreak (with 88% of cases). The first case identified was diagnosed with TB in 2002 (retrospectively linked by WGS) and the most recent diagnosis was June 2024.

TB treatment outcomes for drug susceptible cases are reported for the previous year (Table 8). The majority (85%) of cases completed their TB treatment while 8% transferred out of Australia. A small number of 2022 cases died of TB (3%).

Table 8 TB treatment outcome for drug susceptible cases, Queensland 2022.

TB treatment outcome	Number	(%)
Completed Treatment	110	(85%)
Transferred out of Australia	10	(8%)
Died of TB	4	(3%)
Died of Other cause	4	(3%)
Patient Still on Treatment	2	(2%)
Lost to follow up	0	(0%)
Total non-MDR TB cases	**130**	**(100%)**

Of the 4 MDR-TB cases notified in 2021, 3 completed treatment and 1 was transferred out of Australia.

Discussion

Following a decrease in notifications in Queensland during the COVID-19 global pandemic years of 2020-2022, 2023 represents a return to pre pandemic levels for TB. This is consistent with Australian trends and was expected once migration and cross border travel increased with easing of COVID-19 disease control measures at Australia's borders.

The majority of TB burden in Qld is found in persons born in South East Asia and Western Pacific regions where estimates of TB incidence rates (per 100 000 population per year) were reported as 234 and 96 cases respectively in 2023 (WHO report). In contrast, the TB rates seen in Queensland are low. However, reducing the disparity between rates seen in First Nations people compared with other Australian born persons remain an objective of the national strategy to reduce TB transmission within Australia. Queensland has an opportunity to explore public health approaches with First nation populations to reduce transmission within the current TB outbreak.