

## **Hendra - Operational Debrief**

**Monday 27 October 1200 -1600 hrs**

**Facilitator:** Noel Gillard, Director Emergency Management Unit

**Objective:**

To review the internal Queensland Health public health incident response performance during the 2008 Hendra outbreak in order to learn from that experience so that the response system and actions can be improved both in terms of agency preparedness and health service response capability.

**The debrief rules:**

- The facilitator is the “Chair”
- One person to speak at anytime
- Responses to another speaker will occur through the Chair
- Response systems and recourses are being reviewed (NOT individual’s performance)
- The facilitator is prepared to receive further input following this formal debrief session if individuals feel more comfortable doing so or if they feel that an issue has not received adequate discussion
- A report will be provided to all participants as a record of the debrief

## **HENDRA OUTBREAK (HUMAN CASES) OUTCOMES**

### **Attendees:**

Christine Selvey, Noel Gillard, Ranil Appuhamy, Steven Donohue, Trevor Barnes, Brad McCall, Greg Smith, Emma Field, Karen Heel, Robyn Kinne, Vicki Slinko, Andrew Langley, Kathleen Smith

### **Apologies:**

Frank Beard, Debra El Saadi, Margaret Young

1. **Introduction and welcome:** Christine Selvey
  
2. **Debrief process:** Noel Gillard
  - The debrief objective was agreed by all members.
  - The key elements of the debrief have been captured in the template.
  - The purpose of the debrief is to identify what worked well, lessons learned, 'what ifs', opportunities, risks to be captured for the future, the process to publish learnings to cover all audiences.
  
3. **Background to Hendra incident:** powerpoint presentation and discussion led by Brad McCall
  - Brad acknowledged the work performed by all participants during the outbreak.
  - DPI&F takes the lead for biosecurity issues. Queensland Health takes the lead for human health issues
  - Bats have been identified as the reservoir for Hendra virus.
  - Prior to 2008, there have been 11 outbreaks of Hendra virus in horses - 10 in Queensland.
  - There have been 4 cases in humans to 2008 resulting in 2 deaths contracted through contact with sick or deceased horses.
  - The incubation period in humans has been 7, 7 and 8 days. The case of death due to delayed encephalitis had an aseptic meningitis with onset "shortly after" exposure, and encephalitis with onset about 13 months after exposure.

- Each Hendra outbreak provides new information. In 2008, neurological signs were predominant in horses. This may have been responsible for the delayed recognition of the outbreak in horses. The equine case definition has subsequently been changed to include neurological signs as a presenting sign.
- The Brisbane South Population Health Unit (BSPHU) role was to identify people who may have been exposed to Hendra virus, and to provide counselling and testing to potentially exposed people. In total, there were 91 people who received some sort of follow-up by BSPHU.
- Of the human contacts, 18 developed symptoms requiring clinical review.
  - Two people tested PCR positive after developing a flu like illness.
  - Both human cases had been involved in nasal lavage of a horse whose symptoms of Hendra virus infection began only on the day after the nasal lavage was performed. No respiratory or eye protection was worn by either person during the procedure. However, both cases had other potential exposures, including in one case attendance at an autopsy of a horse confirmed to have Hendra virus infection. Cases developed symptoms within 48 hours of each other.
  - Overall there were 20 people who described contact with body fluids of infected horses, indicating a possible attack rate of 10%. The attack rate in the 1994 Hendra outbreak was also 10%. Fourteen people had “high risk” exposures of contact with horse body fluids to mucous membranes, broken skin or via the respiratory tract. Six had “low risk” exposures to intact skin.
  - There was no evidence of human to human transmission. All household contacts of cases were negative on repeated PCR and serological testing.

The following issues and suggested actions were raised during the debrief. There was no decision at the Debrief in regards to who will be responsible for progressing and prioritising the actions identified. The Senior Director Communicable Diseases Branch will facilitate further discussion on the proposed actions to determine timelines and identify Units/Services/ Branches responsible for implementing specific actions.

## 1. Command and control

Issue	Action
<p>QH was first advised of a positive Hendra virus horse on the morning of 8 July 2008, and an emergency teleconference was held with DPI&amp;F within a couple of hours. Daily teleconferences at 4.30pm between QH and DPI&amp;F were commenced to discuss the animal and human responses. There was initially lack of clarity regarding who was the chair of these teleconferences; no minutes were initially recorded (although BSPHU and CDB took notes); and no clear lead or responsibility was in place. Following a discussion with the CVO around 18 July, CDB provided a chairperson for the teleconferences and recorded minutes and action items for follow-up at the next teleconference.</p> <p>The BSPHU action plan for pandemic response was in place within 24 hours, with one person identified as the co-ordinator. The plan was used to guide decisions and worked well.</p> <p>BSPHU took the lead for all public health responses for the RVC outbreak including media. Similarly, Townsville TPHU took the lead for the Proserpine outbreak.</p> <p>As there were no outbreaks that crossed into another PHU area, CDB was responsible for providing support to the relevant PHU, coordinating and providing information nationally and statewide.</p> <p>The CVO publicly congratulated all staff involved in the outbreak on television.</p>	<ul style="list-style-type: none"><li>• A formal structure with clear responsibility and formal recording is needed for all major incidents commencing immediately.</li><li>• A formal process must be undertaken for incident management, when the PHU is still in 'regular business'.</li><li>• Identify the trigger between 'regular business' and 'major incident'</li><li>• Establish an alert system to assist decision makers and to prepare to engage resources.</li><li>• Issue of communication about clinical events within the PHMO network should be discussed by the PHMO network.</li><li>• Communication of clinical events to the broader QH medical community also needs discussion. How to manage those who think they need to know.</li></ul>

2. Resources	
Issue	Action
<p>BSPHU used the PHU Action Plan to guide decisions and actions and it worked well.</p> <p>Human resources at BSPHU were stretched, but coped well.</p> <p>Four staff from BSPHU worked on the outbreak, while the rest of CDC maintained communicable diseases business.</p> <p>Workload and staff were rearranged as needed.</p> <p>The strategy for surge capacity was to engage secondments from Gold Coast to assist BSPHU. DEH was briefed for telephone assistance, but not required.</p> <p>There was no fact sheet for Hendra virus initially. The fact sheet was revised on 21st August 2008 following the death of the first human case and when more information became available. CDB had central role in developing this resource</p> <p>Laboratory resources were adequate.</p> <p>The single communications officer was stretched, and media calls anytime from 5am to 11pm, seven days a week for 8 weeks was stressful for her family.</p>	<ul style="list-style-type: none"> <li>• Review telephone contact for PHMO and the PHU during a major incident to avoid being 'swamped' by calls.</li> <li>• Have a single point of call for all calls – eg EOC.</li> <li>• Use a silent number for mobiles and blackberries during a major incident.</li> <li>• Workload being sustained by each member of the team needs to be regularly assessed, and additional resources sought early on.</li> <li>• Where a prolonged response is needed, staff need to be released.</li> <li>• Ensure personal support systems are in place.</li> <li>• Develop processes to sustain and support availability of staff at the PHU level, particularly routine administration and telephone staff.</li> </ul>
<p>Current evidence and information for up to date decision making and guidance was obtained from Medline and Pubmed searches. ID physicians also contributed literature and expert advice.</p> <p>Ranil experienced some difficulty in obtaining up to date information in a short space of time.</p>	<ul style="list-style-type: none"> <li>• QHFSS library can provide prompt response (journal articles within 24 hours) and could be used in future.</li> </ul>

<b>3. Documentation</b>	
Issue	Action
<p>No formal minutes were taken at initial multisectoral teleconferences. A decision was eventually made that CDB would chair/lead the teleconferences and a formal process with formal minutes commenced.</p> <p>BSPHU maintained records of meetings and conversations.</p>	<ul style="list-style-type: none"> <li>• Minutes to be recorded for every teleconference.</li> </ul>
<p>The laboratory IT system is not designed to record horse details and there were difficulties with recording horse names (often more than one name per horse), matching with where in the clinic the horses were stabled, and matching with multiple horse owners to identify contacts.</p> <p>BSPHU, West Moreton and laboratories coordinated information, mostly manually.</p>	<ul style="list-style-type: none"> <li>• Record horses on IT system with a prefix of EQ (see later)</li> <li>• Establish a protocol with DPIF for notifying sick horses and Hendra test requests. Process for providing contact details of people in contact with the sick horse needs to be tightened.</li> </ul>
<p>Initially there was no exposure assessment form. This was developed by BSPHU. Used a 'one pager' with the bare basics. BSPHU was unable to get detailed information. Case exposure form was designed for a single exposure, but in this case there were multiple exposures per person (a number of sick horses, and multiple contacts with each sick horse).</p>	<ul style="list-style-type: none"> <li>• Develop generic exposure history form for novel or unknown diseases and routes of transmission</li> </ul>

4. Epidemiology	
Issue	Action
Inclusion of neurological signs in 2008 resulted in a change to the equine case definition	<ul style="list-style-type: none"> <li>• Communicate any change to the equine case definition to vets as soon as possible.</li> </ul>
<p>The principal human contact exposures in the two human cases were thought to be by holding the head of the horse at autopsy and involvement in nasal lavage.</p> <p>Eye protection and respiratory PPE were inadequate because the diagnosis was not considered in the early stage. Only 7% of vet staff reported wearing PPE</p> <p>After 10 days an infection control issue was identified at the veterinary clinic.</p>	<ul style="list-style-type: none"> <li>• Review routine infection control competencies in veterinary hospitals including training and use of PPE used by vets.</li> </ul>
<p>The QH protocol for public health response to the notification in horses is to contact trace human contacts after confirmation of an equine case.</p> <p>A 10/15 minute interview was conducted with 30/40 people. The questionnaire focussed on a single exposure which made it difficult, but still possible, to capture multiple exposure details.</p> <p>There was limited information available re Hendra virus as there have been only 4 human cases.</p> <p>Information is needed quickly on numbers, type of involvement from staff, and probable level of exposure</p> <p>There is a limited concept of vet language – what does nasal lavage and autopsy mean in terms of exposure?</p>	<ul style="list-style-type: none"> <li>• Complete a questionnaire on day 0 when blood levels are taken.</li> <li>• Allow for recording of multiple exposures.</li> <li>• A strict case definition for Hendra virus in horses and humans is needed and early communication if the case definition changes</li> <li>• Increase communication between QH and DPI&amp;F to understand language and processes used by each department.</li> </ul>

5. Environmental Investigation	
Issue	Action
Difficulties were encountered with environmental contamination of samples for testing. QH was not involved with sample collection.	<ul style="list-style-type: none"> <li>• Raise contamination issue with DPI for further discussion and action.</li> <li>• Review process for sample collection.</li> </ul>
6. Laboratory	
Issue	Action
Significant difficulties were encountered due to the inability of the current Laboratory Information System (LIMS) to adequately register and track horse samples which require fields for horse names, owner's names and outbreak/property identifiers.	<ul style="list-style-type: none"> <li>• Ensure roll-out of new LIMS system at QHFSS addresses inadequacies of current system to deal with public health samples.</li> <li>• Design sample collection form which is suitable for the IT system.</li> </ul>
Time delays occurred initially for samples from QML to reach QHFSS. A process was developed and worked well from day 14.	<ul style="list-style-type: none"> <li>• Develop a formal process between QML and PHU to speed up the transport process for samples to be delivered</li> <li>• Review current process for sample transport.</li> </ul>
Results of interstate blood testing were slow (up to 4 days); VIDRL does a PCR test. Difficulties were encountered with transport of samples and obtaining results quickly (these problems were outside	<ul style="list-style-type: none"> <li>• Raise issues of interstate blood sample transport and timely laboratory results with PHLN.</li> </ul>



<p>QH jurisdiction, mainly with two labs, one in NSW and one in Vic). Everything that could be done to facilitate smooth transport of specimens was done, but the system there could not handle the request, even when the head of their CDC was involved.</p>	<ul style="list-style-type: none"> <li>• Develop communication strategy with interstate and private labs to reduce time waiting for clinicians.</li> </ul>
<p>QFSS currently does not have validated tests for horse serology. Horse serology was sent to AAHL, though this resulted in significant delays. QFSS therefore developed and modified a test 'on the run'.</p> <p>Estimates of test sensitivity and specificity must be cautious when interpreting data based on minimal information. False positive ELISAs were an issue.</p> <p>Estimated timeframe for results is:</p> <ul style="list-style-type: none"> <li>- 24 hours for serology</li> <li>- 6 – 12 hrs for confirmed PCR (after the sample has been received)</li> </ul>	<ul style="list-style-type: none"> <li>• Should QFSS be doing horse serology? Would need to develop validated tests.</li> <li>• An alternative is for DPI&amp;F to send the samples to AAHL.</li> <li>• An agreement is needed between DPI and QH to establish whether QH will be called upon to perform serological testing of horses in the future. Include discussion on urgency of results required</li> <li>• Plan for ongoing capacity to meet this timeframe.</li> </ul>
<p>Laboratory staff in a PC3 lab should wear full PPE (including masks and cut proof gloves) when working in the cabinet.</p>	<ul style="list-style-type: none"> <li>• Review infection control procedures in the lab</li> </ul>
<p>Autopsy of the human death was not conducted at QFSS, although it was possible.</p>	

7. Communication	
Issue	Discussion/Action
<p>Public media:</p> <p>The DPI&amp;F info line was available and was diverting calls to QH.</p> <p>The PHMO BSPHU was also the media spokesperson which was extremely taxing and time consuming, but was a good strategy otherwise.</p> <p>The main agencies requesting information were ABC, AAP Newswire, Medianet, Courier Mail. Each phoned 3-4 times a day for updates (if extrapolated the number of calls could number 4000).</p> <p>Email and bloggers were providing public information, then media followed up with an enquiry. For example, Ben Cuneen's condolences page; euthanising of Tamworth was filmed by the media and put on web.</p> <p>Hendra virus fact sheet and the key media releases were loaded onto the website within 24-48 hours. Emails were sent to ID physicians and Divisions of General Practice.</p> <p>Eight media releases from BSPHU were available, but only 3 were placed on the website.</p>	<ul style="list-style-type: none"> <li>• Ensure specific, consistent and timely information is available on the QH Home Page as soon as possible.</li> <li>• Support is needed from Corporate Public Affairs for press conferences.</li> <li>• Review all fact sheet/protocols on an annual basis, with correct review date on each fact sheet/protocol.</li> <li>• Ensure joint QH/DPI&amp;F media releases when there is human contact. Health did not always have input into the media releases.</li> <li>• Monitor email/blogg sites to find out how the public feels about public health issues and emerging diseases, they could also be useful as a communication strategy for surveys/ratings.</li> <li>• All media releases to be uploaded to QH internet site as soon as cleared.</li> </ul>
<p>Internal &amp; interagency communication (external to control team):</p> <p>*Robyn Kinne was engaged as the designated communications officer for the unit and management team.</p> <p>BSPHU staff made themselves available to help with the outbreak and provide information.</p> <p>Need to define the scope of communication in a major incident and</p>	<ul style="list-style-type: none"> <li>• Define what communication is needed by PHU networks, ID physicians and laboratories regarding clinical details as the outbreak evolves, including when there is no new human exposure information.</li> <li>• Institute formal reporting mechanisms (eg sit reps) that have a</li> </ul>

<p>define internal and external communication in terms of disaster management. Numerous requests were received by PHUs prior to confirmation. .</p> <p>*BSPHU communication at the unit level worked well. There is a good relationship with laboratories, DPI&amp;F and PHUs. Positive feedback was received from the ID physicians treating the cases.</p>	<p>set format and a planned release time.</p>
<p>Other stakeholders:</p>	<ul style="list-style-type: none"> <li>• Generic information should be available as a strategy to allay fear and reduce the large volume of calls for information being received by the PHU.</li> </ul>
<p><b>8. Unforeseen difficulties</b></p>	
<p><b>Issue</b></p>	<p><b>Action</b></p>
<p>Public media: In this outbreak the vet from Redlands provided the 'media face'. This actually took some of the media pressure off BSPHU.</p> <p>QH adequacy in influencing media:</p> <ul style="list-style-type: none"> <li>- QH maintained consistent key messages. As it was a new virus, journalists were putting a new 'spin' on information.</li> <li>- QH maintained privacy and confidentiality.</li> <li>- QH did not have input into DPI&amp;F media releases</li> </ul>	<ul style="list-style-type: none"> <li>• Ensure consistent QH messages and delegate spokesperson for the media.</li> </ul>

<p>Horse euthanasia</p> <p>Horses are euthanised in accordance with the AUSVET plan. QH was requested to provide input to support decision making. It is DPI responsibility to implement legislation.</p>	
<p><b>9. Final report</b></p>	
<p><b>Issue</b></p>	<p><b>Action</b></p>
<p>Outbreak summary report</p>	<ul style="list-style-type: none"> <li>• Validate with other participants.</li> <li>• Ensure consistent issues and actions with DPI&amp;F.</li> </ul>
<p>Debrief recommendations and who should receive copies of debrief</p>	<ul style="list-style-type: none"> <li>• Conduct a debrief session with DPI to validate learnings</li> <li>• Conduct internal review with expertise from around Australia</li> <li>• SD CDB to present information to CDNA and PHLN</li> <li>• Brief to Minister/Premier</li> <li>• Media release to be coordinated with DPI&amp;F.</li> </ul>
<p>How do we address gaps in capacity to investigate these types of outbreaks / prepare for next event</p> <p>There is a need to increase competency of staff in the routine and correct usage of PPE including, donning and doffing, within PHU and</p>	<ul style="list-style-type: none"> <li>• Work with DPI to review infection control competencies for veterinary hospital vets and vet staff especially in the use of PPE.</li> <li>• Develop a community education package with key messages.</li> </ul>

relevant stakeholders	<ul style="list-style-type: none"><li>• Ensure a consistent-whole-of-government message about the bat virus, to reduce confusion re lyssavirus and Hendra.</li></ul>
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Debrief concluded at 3.30 p.m.