Bovine Johne's Disease Program Review Future Directions – Independent Review

Report prepared for

Minister John McVeigh

By

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April 30, 2013

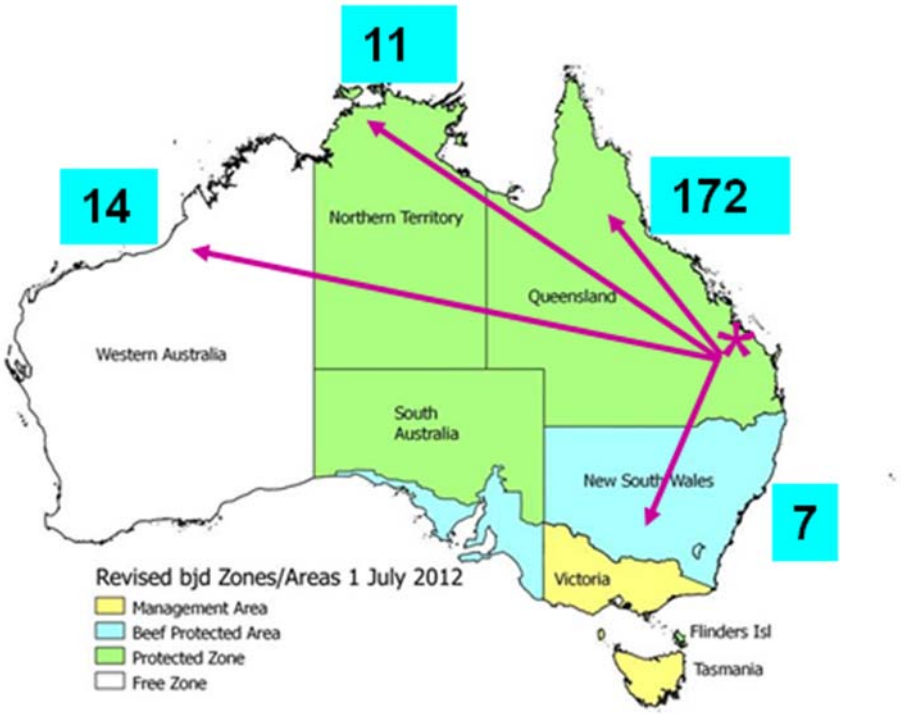

Figure 1 BJD Zones 2012 with affected trace forward properties from the index herd (*) as at December 2012 (Source: CVO Dr Rick Symons, BVD Forum, March 25, 2013)

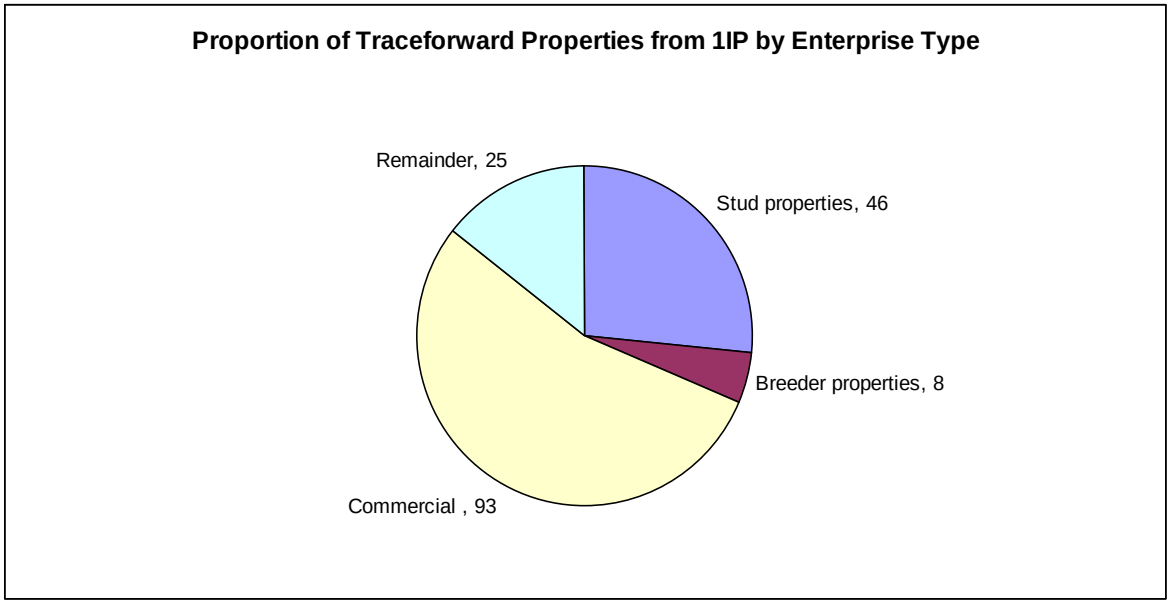

Figure 2 Trace forward properties by business type as at December 2012 (Source: CVO Dr Rick Symons, BVD Forum, March 25, 2013)

1 Executive summary

The current BJD disease incident is the 24th in QLD since 1990. Of those 24, the majority were introduced from interstate, and only three (including the current case) were home bred. The initial suspicion of BJD in October 2012 triggered a disease response according to National and State protocols for a notifiable disease.

The Department's reaction included four major activities: diagnostic testing; disease response according to National and State protocols; communications and industry engagement; assistance with pathways for movement of affected cattle. These four activities should work in parallel, however in the initial phase, implementation of the four activities appeared to be largely sequential.

At the time of the disease incident, Departmental staff faced additional challenges (both internal and external to QDAFF). Concurrent challenges such as a major internal restructure with loss of staff, revision of testing procedures, inconsistencies in guidelines or procedures and the complexities of the BJD disease itself, created a 'perfect storm' scenario. In addition, the Department's operational response to recent disease incidents has been under a high degree of scrutiny through multiple reviews. These challenges have thoroughly tested the disease preparedness of QDAFF and its linkages to the National BJD Program.

In this context QDAFF handled the response professionally and with a high level of dedication. A great deal of effort and resources was applied to the response, although the external perception was that it was initially slow in gaining momentum and cohesion. The response is now well organized, utilizing established policies and procedures and is responsive to commercial imperatives where it is appropriate to do so.

The transition from diagnosis into an actively coordinated, multi-level response would have benefited from a greater sense of urgency and authority. Operational capacity (including both the effective prioritization of resources and total resources) also appeared to be a limiting factor. Several weeks into the response these deficiencies were rectified through implementation of a disease response group that provided consistent advice, improved coordination and increased communications capabilities.

The level of communication with each industry sector was not optimised until several weeks into the response. It will be necessary to revisit the communications strategy, resourcing, and the means of delivering key messages. In mid-December, stakeholders observed a substantial improvement in communication through the initiation of industry meetings (chaired by the Minister) and appointment of the new Industry Liaison Officer.

During the early stages, a deeper understanding of industry perspectives and assistance in finding pathways to market was desirable. Industry expected earlier assistance to create options and pathways to market for affected properties. Rapid resolution of these issues is central to the current incident and to maintaining industry confidence in future disease management programs.

A very positive aspect of QDAFF management has been the capacity at high level (executive and government) to react constructively to criticism. Industry groups commended Minister John

McVeigh for his efforts to personally come to grips with the challenges faced by QDAFF and to lead consultations with industry on the disease response process and selection of options for resolution. The end result has been an interactive facilitated means of achieving agreement on the way forward to manage the BJD incident. It has also gathered valuable insight from a broad range of stakeholders to guide future management of biosecurity incidents in the northern extensive areas.

During investigations of possible disease incidents industry must have confidence in Government biosecurity capability and support. Fear of substantial economic loss will reduce industry compliance with disease surveillance/monitoring procedures. The establishment of a cattle biosecurity fund would therefore underpin compliance with national biosecurity programs. A challenging new role for QDAFF is to assist industry to define the role of a biosecurity fund then, using sound financial analysis, establish the size of that fund and then arrange the resources to enable the fund to fulfil its role.

QDAFF are to be congratulated on their perseverance in maintaining a Protected Zone through enforcement of quarantine restrictions accompanied by accurate diagnostic testing. This review found strong support for the policy of maintaining QLD's protected status for BJD and its alignment with the imperative to maintaining access to exports markets.

A biosecurity incident, incursion or outbreak can break a farm business, cripple an industry and impact on a country's economy in a short period of time. Government and industry should prioritize provision of money for biosecurity on farm and post farm gate. Australia's competitive advantage on exports is clean green high quality products and maintaining biosecurity systems underpins this.

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2 INTRODUCTION

QLD has had 24 recorded incidents of BJD in cattle. The majority of the cases were introduced animals except for 4 animals located at Mutdapilly, Sarina and now at Rockhampton (known as Q24). The suspicion of BJD in a stud herd in October 2012 triggered a disease response according to QLD's status as a 'Protected Zone' under the National Johne's Disease Program Standard Definitions and Rules for Cattle (SD&R's) (see Appendix 11.1.1). This response was guided by the SOP's for 'Responding to suspect and confirmed cases of Bovine Johne's Disease in QLD' (see Appendix 11.3.1).

Once infection with BJD was confirmed, trace forward procedures indentified an additional 150 properties that required quarantine so as to limit spread of BJD (as required by the SD&R's). The response detailed in the SOP's resulted in serious impacts on the businesses and properties quarantined. For studs that rely on constant animal movements (sale of animals) the effect is devastating. For properties that fatten animals for sale direct to abattoirs the effect is minimal.

In addition to the actual disease response, the Department faced some major additional challenges:

- BJD is a complex disease with a long period between infection and display of symptoms.
- BJD is endemic in most states of Australia yet rare in QLD. The discovery of BJD in QLD initiated a response that depended on policies and procedures that are not well tested under extensive QLD conditions
- There were inconsistencies between the documents governing responses and diagnostic procedures (SDR&G, ANZSDP, QDAFF SOP) inhibited clear decision making until several weeks into the disease investigation.
- Testing procedures were undergoing revision. A new PCR test was in the process of moving from experimental to diagnostic use [1]. The procedures for the gold standard test, the culture of the Johne's' Disease bacterium, were changing (Bac Tek culture medium replaced)
- The incident occurred whilst QDAFF was in the midst of a major restructure and change management process. This included large scale staff changes and closure of laboratories
- Concurrent occurrence of multiple natural disasters (floods, fire)

This review was announced by Minister McVeigh on March 1st 2013 and commenced on March 4th with a final report due on April 30th 2013. The methods of collecting responses were by email and follow up phone or in person interviews. Written submissions were received from 9 organizations and from 16 producers (individuals and companies). Conversations and information collected during the submissions process were treated as confidential in all cases unless the specifically requested to make the source public. Additional verbal submissions (telephone and in person) were received from more than 30 individuals and organization representatives.

Follow up interviews were held with the majority of organizations from whom written submissions were received. Consultations were held with organizations involved in the industry supply chain. Consultations were also held with QDAFF staff at all levels who were involved in the response, testing processes, policy development and implementation. Issues have subsequently been aggregated into themes.

This review was conducted during the ongoing disease response and as such this is not a historical review. This is both a review (eg of the initial response) and a current synopsis of ongoing dialogue on current issues (eg pathways to market and creation of a compensation fund). In this respect this review is indicative of the fluid environment in which QLD DAFF has operated in response to the November 2012 Q24 BJD incident.

The central intent of this review is to offer constructive recommendations to improve disease preparedness and enhance the capability for responding appropriately to future disease incidents of classified as exotic (eg activation of EADRA protocols) or notifiable endemic (activation of DAFF guidelines).

The review outlines the responses to the initial disease incident and the related trace forward investigations. This is followed by a section on commendations then Section 6 contains recommendations aligned to the terms of reference. Recommendations are also grouped into themes in Section 7. In section 10, the recommendations are preceded by more detailed observations gained through stakeholder discussions.

The intent of the review is to capture the lessons learnt from the response and to indentify recommendations to build upon knowledge gained. The process was not exhaustive, nor completed to everyone's satisfaction as there were more willing participants in QLD, NSW and Vic who wanted to present their views. Time constraints limited this process to representatives of the key stakeholders.

3 Disease incident in November 2012 at Rockhampton

3.1 Description of the initial BJD incident

In October 2012, BJD was suspected in homebred animals at a stud beef cattle herd near Rockhampton. The assistance of a BQ veterinarian was requested as the owners had reported a low incidence of a rapid loss of body condition in first and second calf cows soon after calving. One cow died, and 3 out of 600 cows were suffering severe weight loss. There was no diarrhoea.

The preliminary test results indicating suspected BJD were received sooner than expected. Biosecurity QLD quarantined the index property, and worked with the owners to develop a management plan that includes retention of the genetics of the herd. Cattle movements from the infected property were traced and included movements to major stud and commercial properties in QLD. By December 2013, movement restrictions were in place on approximately 130 properties that have received cattle from the infected property (trace forward animals – see Figures 1,2,3). Although it is expected that most properties under assessment are not infected, Biosecurity QLD officers are working with the property owners to investigate the risk of BJD and develop individual property management plans, where indicated. (For a summary of events see Section 11.1)

Cattle from infected and suspect properties are being consigned to feedlot or slaughter as allowed under the national program, because this poses negligible risk of disease spread. Identified trace forward movements of cattle from the index property to other States were notified to the relevant chief veterinary officers.

(source: Animal Health Surveillance Quarterly Report March 2013, 17:4;p14)

3.2 **Current situation** (sourced from QDAFF Situation Report 24th April)

There are three confirmed infected premises including the index property. Fifteen properties traced from the index property have returned positive test results. Further testing is being undertaken on existing samples from these properties and property risk assessments will be undertaken to provide additional epidemiological evidence. As of 5pm on 23 April 2013, movement restrictions remain in place on 57 QLD properties that received animals from the index property to prevent further spread of the disease. Testing of trace forward animals continues on these properties. An additional three feedlots that have received cattle from traceforward properties of the index property have movement restrictions in place as part of management strategies to allow low risk animal movements and to minimise the impact on business viability.

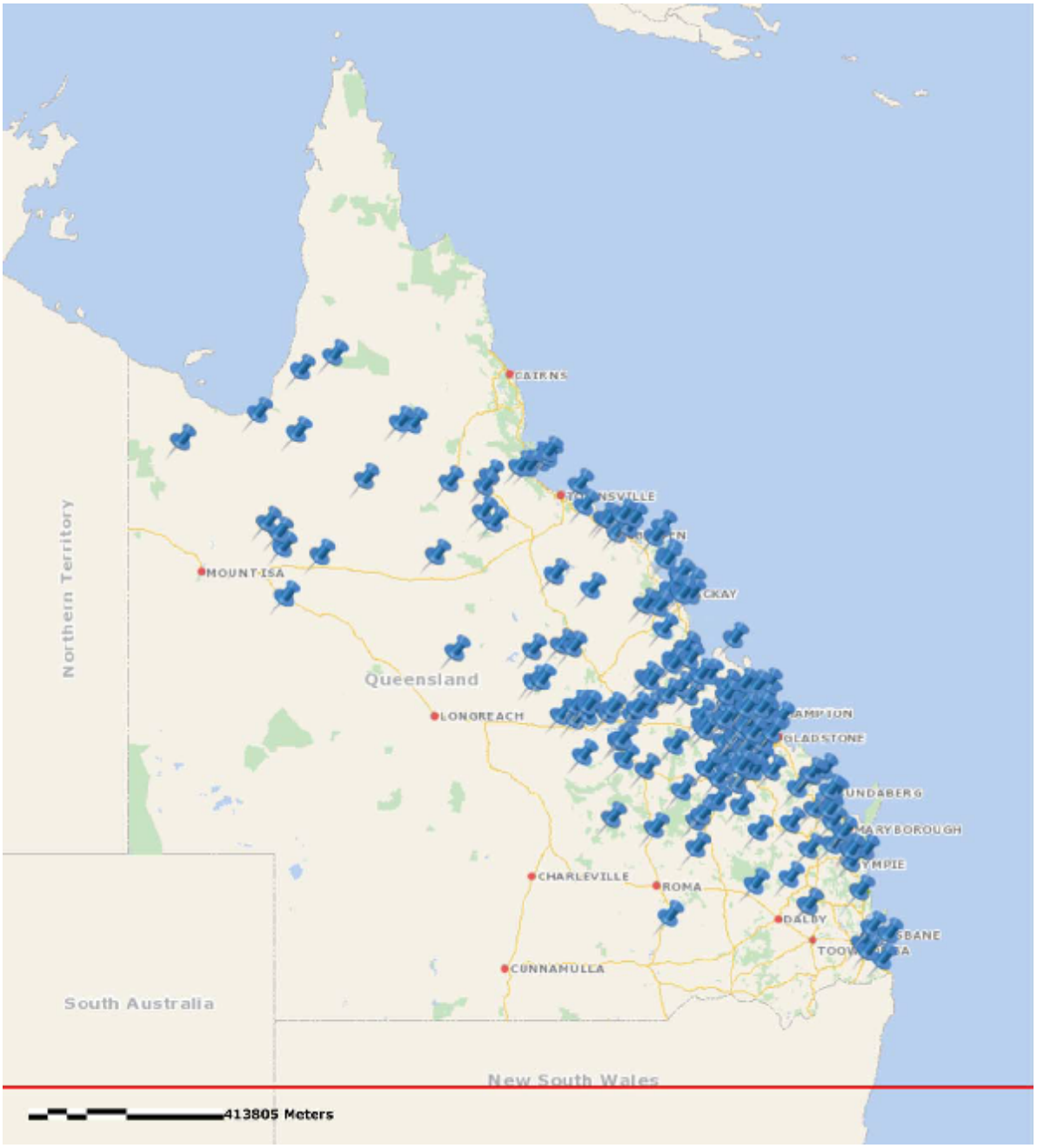

Figure 3 Distribution of quarantined properties in QLD (Source: CVO Dr Rick Symons, BVD Forum, March 25, 2013)

4 Terms of Reference

Conduct a program review to feed into a continual improvement process should the program be continued.

Provide an independent assessment of the future direction of the BJD program based on the results received and current knowledge.

Consult with the department and industry to undertake the review and identify potential actions which the department can consider regarding long term disease eradication programs.

5 Commendations matched against the terms of Reference

Program review & continual improvement process

1. **QDAFF responded with a high level of professionalism and dedication to the current BJD incident in the face of significant challenges.**
2. **QDAFF displayed a high level of expertise in its response to the technical complexities inherent to both management of the disease and the implementation of testing procedures.**
3. **QDAFF responded appropriately using national and state protocols and guidelines.**
4. **Detailed information on BJD was available from QDAFF for producers and was updated during the response period.**
5. **The formation of a Technical Reference Group was a significant initiative and provided clarity on what needed to be done on the ground to achieve clearance.**
6. **Industry reported generally very positive interactions with local operations staff who were interpreting the response as it evolved.**
7. **From 2013 there was good guidance of affected industry participants through the difficult process of planning, management and cleanup**
8. **Situation reports were detailed and informative**
9. **An intensive effort was applied to contact as many producers as possible prior to receipt of quarantine properties notices by post.**
10. **During the quarantine, trace forward and testing stages the very high work load, diligence and commitment of front line QDAFF staff was greatly appreciated.**
11. **The laboratory teams show a high level of adaptability and skill to work with new testing protocols.**
12. **The improved flow of communications from December 2012 was highly valued to clarify the complexities of the BJD disease response. A particular example was clarifying the difference between low risk and no risk approaches to on property BJD management.**
13. **Guidelines produced by the Technical Reference Group facilitated decisions to enable speedy release of at partial or entire herds from quarantine.**
14. **Regional meetings coordinated by the Minister and Biosecurity QLD for affected producers were highly valued.**

15. **High level industry engagement was effective through the Technical Reference Group, BJD Industry Advisory Council and ongoing Ministerial forums.**
16. **By mid December 2012 QDAFF developed a comprehensive and effective communication strategy, including regional meetings and roadshows, to convey information to the public and producers.**
17. **From mid December, a well organized interactive communications system included high level meetings and on farm information sessions.**
18. **The personal involvement of the Minister (and Deputy Premier) in meetings to bring stakeholders together was greatly appreciated.**
19. **Industry associations were well informed of the Department's position and have been able to raise issues with Executive staff.**

Assessment of the future direction of the BJD program

20. **Overall there was recognition that the national reputation for quality beef derived from healthy animals benefits from maintaining the National BJD program and specifically from QLD's protected status for BJD.**
21. **QDAFF are to be congratulated on their perseverance in maintaining a Protected Zone through enforcement of quarantine restrictions accompanied by accurate diagnostic testing.**
22. **There was strong support for the policy of maintaining QLD's protected status for BJD and its alignment with the imperative to maintaining access to exports markets.**

Regarding long term disease eradication programs

23. **This incident has thoroughly tested the disease preparedness of QDAFF and its linkages to the National BJD Program.**
24. **QDAFF officers have been 'battle hardened' by several major recent animal disease incidents (EI, Hendra, Lyssavirus, BJD). The experience and corporate knowledge gained in handling these incidents is valuable and provides a strong platform for future responses.**

6 Recommendations matched against the Terms of Reference

6.1 Immediate implementation

Program review & continual improvement process

1. **Recommendation: A stronger sense of urgency should be applied to future disease incidents (as required by SOP's and guidelines). Responses of this scale should therefore utilize established emergency procedures which require immediate implementation.**
2. **Recommendation: The BQ structure and staff numbers should be reassessed to ensure the level of authority and staff resources are appropriate to enact a coordinated multilevel response to a notifiable or emergency disease.**
3. **Recommendation: Balance the capabilities and staff numbers within QDAFF to meet both requirements for both 'peace time' (disease incidents under control) and 'war time' (early stage high impact disease response) scenarios**

4. **Recommendation: Establish a Technical Reference Group for selected complex, long term disease responses and charge the Technical Reference Group with the task to creatively devise pathways for movement of low risk (eg tested, young animals) quarantined cattle to fattening properties or feedlots**
5. **Recommendation: Reassess the communications strategy and delivery of key messages. It is essential to employ people with communication skills to develop these key messages through consultation with stakeholders.**

Assessment of the future direction of the BJD program

6. **Recommendation: Maintain QLD's protected status for BJD to align with the imperative to maintaining access to exports markets.**
7. **Recommendation: The procedures governing the handling of the BJD incident were unclear and need to be updated and clarified. Ensure compatibility and consistency between the three guidelines and protocols for BJD through the harmonization of**
    a. **SDR&G (Standard definitions, rules and guidelines)**
    b. **ANZSDP (Aus & NZ Standard Diagnostic Procedures)**
    c. **QDAFF's SOP for 'Responding to suspect and confirmed cases of BJD in QLD'**
8. **Recommendation: Animal Heath Committee (via QLD's CVO) to review National Disease Protocols for BJD (and other diseases) to include information that is specific to tropical/Northern cattle production systems**
9. **Recommendation: Ensure clarity and precision in the guidelines for feedlots accepting BJD affected cattle.**
10. **Recommendation: Complete the trace back investigation. A number of groups and individuals are strongly supportive of full testing of the Q24 herd to enable pinpointing (trace back) of the source animal.**

Regarding long term disease eradication programs

11. **Recommendation: Prioritize acquisition of IT systems including financial and human resources to enable efficient real time interrogation of the NLIS database**
12. **Recommendation: Assess the financial impact particularly on business continuity for properties affected by disease quarantine procedures in order to better understand industry issues and to assist in finding pathways to market (if the disease allows this) for affected animals. Include industry advisors in this review**
13. **Recommendation: Critically assess whether the current information management systems are 'fit for purpose'**

6.2 Short term

Program review & continual improvement process

14. **Recommendation: Increase response capacity by ramping up the intensity of training/updates for BQ staff and industry representatives for notifiable diseases**
15. **Recommendation: Establish an emergency response unit to lead the initial response to disease incidents**
    a. **Select and train a core team followed by regular rotation of members**

16. **Recommendation: Conduct a skills audit for BQ staff assigned to operations management and 'front line' tasks**

Assessment of the future direction of the BJD program

17. **Recommendation: Update SOP's for QLD DAFF and for the National SDR&G's and the SCAHLS sub-committee to accommodate the new PCR test**
18. **Recommendation: Update the business continuity plan to account for expected changes in workload (sample submission) whilst continuing ongoing activities. It should include plans for accessing additional staff, facilities for high volume periods (see BQ Emergency Operations Manual Section 10.4)**
19. **Recommendation: Ensure consistency in advice given by BQ Officers**
    a. **relevant QDAFF officers are all aware of the processes and decisions required to manage affected positive herds**
20. **Recommendation: QDAFF engages with industry, stakeholders and research institutions to prioritize R&D requirements to enhance knowledge of BJD in northern Australia.**
    - **Surveillance and testing procedures**
    - **Management of BJD on infected or suspect properties**
    - **Options and pathways for affected properties**

Regarding long term disease eradication programs

21. **Recommendation: Initiate establishment of a Northern Australia industry liaison group to monitor, respond and advise on biosecurity issues in QLD, NT and WA**
22. **Recommendation: Establish closer links between QDAFF and private veterinarians to facilitate their training and inclusion in future disease investigations (ie Australian Veterinary Reserve).**
23. **Recommendation: Be proactive in assisting industry to develop capacity, awareness and leadership skills in managing biosecurity so as to reduce the risk of a biosecurity incursion**
24. **Recommendation: During disease incidents maintain the practice of appointing an industry liaison officer(s) with credibility and standing in the chosen industry to build connections between QDAFF and livestock industry to fulfil the need for ongoing explanation of quarantine actions**
25. **Recommendation: QDAFF to assist industry with their intentions to**
    a. **define the role of a fund**
    b. **use sound financial analysis to establish the size of the compensation fund**
    c. **identify the sources of funds to enable the fund to fulfil its role**
26. **Recommendation: Review BQ emergency operations manual in light of the BJD response**

6.3 Medium term

Program review & continual improvement process

27. **Recommendation: Initiate an exchange program where QDAFF officers are 'embedded' in short term industry positions to gain understanding of agribusiness systems**

28. **Recommendation: Initiate a range of scholarships and cadetships (partially or fully funded) to encourage entry into biosecurity positions and awareness of these positions as a career option**
29. **Recommendation: Ensure guidelines for livestock owners and veterinarians are updated within 3 months of new information becoming available. Increase availability and accessibility of simple and complete fact sheets (ie difficult to obtain on the web)**
30. **Recommendation: Be proactive in the regular release of Situation Reports containing general information to update testing and progress through the media and stakeholder networks**

Assessment of the future direction of the BJD program

31. **Recommendation: Reassess the operational effectiveness and capacity (including staff numbers) of the Coopers Plains Laboratory in the light of the current BJD testing load. It is suggested that the Steering Committee established for the planning of consolidation from the 3 labs into the single laboratory be consulted for this role.**
32. **Recommendation: For laboratory scientists, include time for R&D and maintenance of quality systems**
33. **Recommendation: A risk analysis to be undertaken of routine cattle movements into QLD from areas of lesser BJD status**

Regarding long term disease eradication programs

34. **Recommendation: Conduct rigorous testing of disease response plans and include input from stakeholders to ensure rapid, appropriate response to future disease incidents or outbreaks**
35. **Recommendation: Identify the limiting steps in the testing process and provide redundancy in equipment and (additional) staff to allow for expected operational variability.**
36. **Recommendation: Review lifetime traceability of the NLIS-RFID system (issues raised included tag retention in bulls, property PIC transfers/amalgamations, delay in tagging until close to market)**
37. **Recommendation: QDAFF should have officers on staff (or failing that have arrangements to immediately second such expertise) who are**
    a. **personally familiar with each listed notifiable disease**
    b. **available for rapid deployment**
    c. **capable of providing practical, accurate and appropriate advice.**

6.4 Longer term

Program review & continual improvement process

38. **Recommendation: Governments (State & Federal) engage and train public and private veterinarians to undertake surveillance activities as required by QDAFF to meet national and international obligations**
39. **Recommendation: Monitor fatigue and stress support mechanisms during the early stage of an incident in QDAFF staff and affected producers**

40. **Recommendation: Delivery of quarantine notices to occur with a high degree of sensitivity and that case managers are appointed as a clear point of contact between affected producers and QDAFF**
41. **Recommendation: The word 'outbreak' is restricted for use in disease responses included under EADRA and 'incident', 'investigation' or 'response' is used for other notifiable disease investigations .**

Assessment of the future direction of the BJD program

42. **Recommendation: Review protocols and the level of monitoring for 'at risk' imported animals imported from interstate (and overseas)**
43. **Recommendation: Reassess the design of the QLD monitoring, surveillance and compliance program required under 2.13.2 of the National Johne's Disease Program SDR&G's.**

Regarding long term disease eradication programs

44. **Recommendation: To create pathways to market (eg for BJD affected cattle) ensure within QDAFF there is immediate access to the commercial expertise required to creatively assist in troubleshooting the regulatory impediments to prepare cattle for finishing to market weights eg access to feedlots or finishing paddocks for infected cattle.**
45. **Recommendation: Create an industry biosecurity risk assessment template and facilitate its voluntary adoption by industry**

7 Recommendations arranged in themes

7.1 Initial response

Recommendation: QDAFF should have officers on staff (or failing that have arrangements to immediately second such expertise) who are

a. **personally familiar with each listed notifiable disease**
b. **available for rapid deployment**
c. **capable of providing practical, accurate and appropriate advice.**

Recommendation: Ensure consistency in advice and that relevant QDAFF officers are all aware of the processes and decisions required to manage affected positive herds

Recommendation: Complete the trace back investigation. A number of groups and individuals are strongly supportive of full testing of the Q24 index herd to enable pinpointing (trace back) of the source animal.

Recommendation: A stronger sense of urgency should be applied to future disease incidents (as required by SOP's and guidelines). Responses of this scale should therefore utilize established emergency procedures which require immediate implementation.

Recommendation: Ensure compatibility and consistency between the three guidelines and protocols for BJD

a. **SDR&G (Standard definitions, rules and guidelines)**
b. **ANZSDP (Aus & NZ Standard Diagnostic Procedures)**
c. **QDAFF's SOP for 'Responding to suspect and confirmed cases of BJD in QLD'**

Recommendation: For notifiable diseases other than BJD, ensure compatibility and consistency of guidelines and protocols.

7.1.1 Interactions with QDAFF staff from Individual producers

Recommendation: Re-establish the emergency response unit for disease incidents

- **Select and train a core team followed by regular rotation of members**

Recommendation: Increase response capacity by ramping up the intensity of training/updates for BQ staff and industry representatives for notifiable diseases

Recommendation: Initiate establishment of a Northern Australia industry liaison group to monitor, respond and advise on biosecurity issues in QLD, NT and WA

7.2 Quarantine process

Recommendation: Delivery of quarantine notices to occur with a high degree of sensitivity and that case managers are appointed as a clear point of contact between affected producers and QDAFF

Recommendation: Monitor fatigue and stress support mechanisms during the early stage of an incident in QDAFF staff and affected producers

For further recommendations on the quarantine process, see section on records management

7.2.1 Speed of resolution

Recommendation: Establish closer links between QDAFF and private veterinarians to facilitate their training and inclusion in future disease investigations (ie Australian Veterinary Reserve).

7.2.2 Impact of a strict quarantine process

For recommendations, see business continuity plans

7.3 Policies and procedures

Recommendation: The procedures governing the handling of the BJD incident were unclear and need to be updated and clarified. Ensure compatibility and consistency between the three guidelines and protocols for BJD through the harmonization of

a. **SDR&G (Standard definitions, rules and guidelines)**
b. **ANZSDP (Aus & NZ Standard Diagnostic Procedures)**
c. **QDAFF's SOP for 'Responding to suspect and confirmed cases of BJD in QLD'**

Recommendation: Advocate energetically (via AHC) to change National Disease Protocols for BJD (and other diseases) to include information that is specific to tropical/Northern cattle production systems

7.3.1 Attitude towards maintaining protected status

Recommendation: Maintain QLD's protected status for BJD to align with the imperative to maintaining access to exports markets.

7.3.2 Future responses to on farm diseases

Recommendation: Review BQ emergency operations manual in light of the BJD response

Recommendation: Assess the financial impact particularly on business continuity for properties affected by disease quarantine procedures in order to better understand industry issues and to assist in finding pathways to market (if the disease allows this) for affected animals. Include industry advisors in this review

Recommendation: Reassess the design of the QLD monitoring, surveillance and compliance program required under 2.13.2 of the National Johne's Disease Program SDR&G's.

Recommendation: Review protocols and the level of monitoring for 'at risk' imported animals imported from interstate (and overseas)

Recommendation: Industry must be consulted to construct a clear case that advocates for the benefit of market access linked to BJD protected status

7.4 Communications

Recommendation: Be proactive in the regular release of Situation Reports containing general information to update testing and progress through the media and stakeholder networks

Recommendation: Reassess the communications strategy and delivery of key messages. It is essential to employ people with communication skills to develop these key messages through consultation with stakeholders.

Recommendation: Ensure guidelines for livestock owners, veterinarians are updated within 3 months of new information becoming available. Increase availability and accessibility of simple and complete fact sheets (ie difficult to obtain on the web)

Recommendation: During disease incidents maintain the practice of appointing an industry liaison officer(s) with credibility and standing in the chosen industry to build connections between QDAFF and livestock industry to fulfil the need for ongoing explanation of quarantine actions

Recommendation: The word 'outbreak' is restricted for use in disease responses included under EADRA and 'incident', 'investigation' or 'response' is used for other notifiable disease investigations .

7.5 Records and information management

Recommendation: Prioritize acquisition of IT systems including financial and human resources to enable efficient real time interrogation of the NLIS database

Recommendation: Critically assess whether the current information management systems are 'fit for purpose'

Recommendation: Review lifetime traceability of the NLIS-RFID system

7.6 Business continuity plans for industry

7.6.1 Range of impacts of BJD on property production systems

Recommendation: A risk analysis to be undertaken of routine cattle movements into QLD from areas of lesser BJD status

Recommendation: Create an industry biosecurity risk assessment template and facilitate its voluntary adoption by industry

Recommendation: Be proactive in assisting industry to develop capacity, awareness and leadership skills in managing biosecurity so as to reduce the risk of a biosecurity incursion

Recommendation: Assess the financial impact particularly on business continuity for properties affected by disease quarantine procedures in order to better understand industry issues and to assist in finding pathways to market (if the disease allows this) for affected animals. Include industry advisors in this review.

7.6.2 Pathways to market

Recommendation: Establish a Technical Reference Group for selected complex, long term disease responses and charge the Technical Reference Group with the task to creatively devise pathways for movement of low risk (eg tested, young animals) quarantined cattle to fattening properties or feedlots

Recommendation: To create pathways to market (eg for BJD affected cattle) ensure within QDAFF there is immediate access to the commercial expertise required to creatively assist in

troubleshooting the regulatory impediments to prepare cattle for finishing to market weights eg access to feedlots or finishing paddocks for infected cattle.

Recommendation: Ensure clarity and precision in the guidelines for feedlots accepting BJD affected cattle.

7.6.3 Biosecurity Fund

Recommendation: QDAFF to assist industry to define the role of a fund then, using sound financial analysis establish the size of the compensation fund and then the source of funds to enable it to fulfil its role

7.7 Testing process

Recommendation: Identify the rate limiting steps in the testing process and provide redundancy in equipment and staff to allow for expected operational variability.

Recommendation: Reassess the operational effectiveness and capacity of the Coopers Plains Laboratory in the light of the current BJD testing load. It is suggested that the Steering Committee established for the planning of consolidation from the 3 labs into the single laboratory be consulted for this role.

Recommendation: For laboratory scientists, include time for R&D and maintenance of quality systems

Recommendation: Update SOP's for QLD DAFF and for the National SDR&G's and the SCAHLS sub-committee to accommodate the new PCR test

Recommendation: Update the business continuity plan to account for expected changes in workload (sample submission) whilst continuing ongoing activities. It should include plans for accessing additional staff, facilities for high volume periods (see BQ Emergency Operations Manual Section 10.4)

Recommendation: Complete trace back investigation.

7.8 Structure and future capabilities for BQ

7.8.1 Disease preparedness

Recommendation: The BQ structure and staff numbers should be reassessed to ensure the level of authority and staff resources are appropriate to enact a coordinated multilevel response to a notifiable or emergency disease.

Recommendation: Balance the capabilities including staff numbers within QDAFF to meet both requirements for both 'peace time' (disease incidents under control) and 'war time' (early stage high impact disease response) scenarios

Recommendation: Conduct rigorous testing of disease response plans and include input from stakeholders to ensure rapid, appropriate response to future disease incidents or outbreaks

Recommendation: Conduct a skills audit for BQ staff assigned to operations management and 'front line' tasks

7.8.2 The role of QDAFF in establishing options and pathways to market

Recommendation: Assess BQ frontline staff knowledge and understanding of industry production systems

Recommendation: Initiate an exchange program where QDAFF officers are 'embedded' in short term industry positions to gain understanding of agribusiness systems

Recommendation: Initiate a scholarship system to encourage recent graduates to positively view a career with QDAFF

Recommendation: Engage and train practitioners to undertake surveillance activities as required by QDAFF to meet national and international obligations

Recommendation: Initiate a range of scholarships and cadetships (partially or fully funded) to encourage entry into biosecurity positions

7.9 R&D required

Recommendation: QDAFF engages with industry, stakeholders and research institutions to prioritize R&D requirements to enhance knowledge of BJD in northern Australia.

8 Bovine Johne's Disease

8.1 BJD worldwide

BJD has a world-wide distribution, with only a few countries, for example Norway & Sweden, claiming freedom. In the USA it is estimated that around 68% of dairy herds and 8% of beef herds are infected. It causes around $200-250 million in lost productivity per annum in the US dairy industry. The situation in Europe is similar and it is widespread in New Zealand. In Japan the apparent prevalence is very low and the entire Japanese herd is currently tested every five years. There is compensation for herds classified as infected and under their Food Sanitation Laws, and animal products from infected or suspect animals are not allowed to be supplied for human consumption (from Ron Glanville's speech to the Rural Press Club March 2013).

In all stud herds, living with BJD is not a viable option because of the restrictions imposed on the sale of cattle through current policy and regulations [2]. In many commercial beef herds worldwide, living with BJD may be a viable option. In these herds the effect of BJD will be variable depending on the discounts applied to stock sold, length of time cattle trading restrictions are in place and the strategy adopted to eradicate BJD.

There are essentially three categories of infected animals.

1. Infected internally but are not shedding the bacteria
    a. Cannot detect infection using faecal tests
    b. no outward signs of disease
2. Infected internally and also shedding the bacteria in the faeces
    a. Can detect infection using faecal tests
    b. No outward signs of disease
3. Infected internally (extensive infection) and shedding bacteria in the faeces

a. Can detect infection using faecal and blood tests
b. Outward signs of disease (eg weight loss, diarrhoea)

8.2 BJD in Australia

In Australia there are around 1100 known BJD infected herds, with the majority (over 900) in Victoria, and mostly in the dairy industry.

As part of the national BJD Strategic Plan, Australia is divided into a number of zones, with QLD, Northern Territory and parts of South Australia classed as 'Protected' and Western Australia classified as 'Free'. Victoria and Tasmania are classed as management areas, which imply that BJD is endemic. The intermediate classifications are NSW and the southern part of SA. Here separate compartments within the cattle industry (dairy and beef) are recognised. The beef compartment is recognised as 'Protected' (as is QLD) and the dairy compartment is recognized as a 'management compartment' where BJD is endemic (as with Vic and Tas) (from Dr Ron Glanville's speech to the Rural Press Club March 2013).

8.3 BJD in a QLD context

QLD is a Protected Zone within Australia's National Johne's Disease Program, with a very low prevalence of bovine Johne's disease (BJD). Under the national program, strict regulatory control is implemented when the disease is detected, to prevent further spread and eliminate property-level infection and environmental contamination.

Prior to the 2012 disease incident, familiarity with the disease was low amongst the majority of frontline QDAFF staff, producers, their advisors and their veterinarians. Movement requirements under BJD guidelines allow animals to enter QLD. This is a compromise between preventing animal introductions (zero risk for total disease control) and the need to facilitate trade.

Qld Surveys http://www.daff.QLD.gov.au/4790_12159.htm

'A state wide survey of dairy and beef herds was undertaken in 1997 and a survey of dairy herds in 2007. In 1997, all animals four years old and over were sampled in 89 dairy herds (representing 5% of dairy herds) that were selected as being at high risk of Johne's disease infection. Additionally, 154 beef herds were randomly sampled with approximately 30 mature animals per herd tested. During the 2007 survey, large and small dairy farms were randomly selected and animals on these farms were randomly sampled over a four-year period. During both surveys, no animals were found to be infected with Johne's disease.'

9 Legislative framework

9.1 National Animal Health Information System – endemic disease information system –National Johne's Disease Control Program

9.2 BJD program Standard definitions, rules and guidelines

http://www.animalhealthaustralia.com.au/wp-content/uploads/2012/06/BJD_SDRGs_8thED_May2012.pdf (Introduction Page 1)

'The SDR&G's provides guiding principles and practices upon which industries and state and territory governments can formulate disease control and management programs to suit their circumstances. These guidelines have been approved by Animal Health Committee (AHC) and provided to the Primary Industries Standing Committee (PISC) and the National Biosecurity Committee (NBC) for information'.

'The Protected Zone (PZ) is an area in which BJD occurs at very low prevalence, and strict regulatory control is implemented upon detection to prevent further spread and lead to eradication.'

Definition of an infected animal (SDR&G Page 5)

'Where infection is detected in a herd for the first time, a range of definitive tests (histopathology investigation, culture of faeces or tissues, or other definitive tests conducted in accordance with the ANZSDPs for bovine Johne's disease) should be applied and interpretation based on the results of all tests conducted.'

AHA survey recommendations

http://www.animalhealthaustralia.com.au/wp-content/uploads/2011/04/bjd_survmethods.pdf
Objectives of Surveillance (BJD Survey methods Page 1)

'To assist with measuring and demonstrating success or progress with surveillance, there is a strong argument in favour of setting quantitative, statistically measurable objectives for the various zones. As an example, the objective of surveillance to declare or maintain a Free Zone could be to provide evidence, with a 95% confidence, to show that if Johne's disease is present in the zone, it is present in less than 0.1% of the herds. Similarly, the objective of surveillance to declare or maintain a Protected Zone could be to provide evidence, with a 95% confidence, to show that if Johne's disease is present in the zone, it is present in less than 1% or 0.5% of the herds.

The AHA Working Group has concluded that: While it is tempting to express surveillance objectives in terms of a selected confidence level to detect a selected minimum herd prevalence, no affordable method has yet been identified which could meet such objectives with any statistical rigour. Qualitative rather than quantitative objectives may have to suffice.'

National Johne's Disease Control Program http://www.daff.QLD.gov.au/4790_12160.htm

'The National Johne's Disease Control Program (NJDCP) aims to help livestock industries to reduce the spread and impact of Johne's disease in Australia. It is a cooperative program involving Australian livestock industries, government and the veterinary industry. Animal Health Australia manages the program on behalf of these key stakeholders.

Controlling Johne's disease involves limiting its spread and reducing the impact in affected herds. The NJDCP aims to achieve this through coordinated projects in market assurance, disease control, research, communication and information, training and extension and diagnostic methods.

The key components of the NJDCP are the:

- National Guidelines and Standard Definitions and Rules (SDRs) for zoning, inter-zone movement controls and official disease control programs in the respective states.

- Voluntary Australian Johne's Disease Market Assurance Program, which works to identify, protect and promote individual herds and flocks that are objectively assessed as having a low risk of being infected.

- Australian and New Zealand Standard Diagnostic Procedures for Johne's Disease.'

For Further information see the AHA website Animal Health Australia

9.3 Stock Act

http://www.legislation.QLD.gov.au/LEGISLTN/CURRENT/S/StockA15.pdf

10 Issues identified and recommendations proposed

10.1 Initial response

There was an expectations gap between industry and QDAFF on the sense of urgency and speed of response required, possibly due to a predominantly reactive rather than proactive culture.

The early weeks were challenging for QDAFF as it gathered sufficient evidence from tests conducted on 3 affected cows to justify the diagnosis of BJD. Industry recognized that QLD was obliged to act upon the positive BJD test results using national protocols and guidelines. While industry understood that the response would follow the national plan they did not perceive that QDAFF had an effective operational plan until several weeks after the incident. Industry suggested that the incident broke through a period of a 'false sense of security' within the industry and that the incident has applied a strong focus onto on-farm biosecurity. This particularly applies to properties where inward animal movements are common.

Industry comments

- BJD Information, advice and communications from DAFF were available.
- There was a shortage of QDAFF staff in middle management positions in the initial stages that felt a strong sense of urgency and were willing to deal with the issues in a timeframe that matched commercial environment.
- The early appointment of an Industry Liaison Officer (Ted Parish for an introductory period, then Ron Glanville) assisted communications and tracing operations.
- There was widespread support for the role played by Dr Ron Glanville following his appointment as Industry Liaison Officer. He was complemented on his capacity to appreciate the seriousness of the financial situation confronting industry and then to provide appropriate urgency, direction to the response.
- From 2013 there was good guidance of affected industry participants through the difficult process of planning, management and cleanup
- The formation of a Technical Reference Group was a significant step forward and provided much needed clarity on what needed to be done on the ground to achieve clearance.
- QDAFF has handled isolated incidents well but the requirements for a larger response (160+ herds) stretched the system beyond its capacity. QDAFF and Biosecurity QLD were not initially prepared for the magnitude of the challenge being faced.

- Affected producers have indicated that staffing issues were evident at a field and senior level. This included a clear lack of experience and trained managers. There was a lack of practical knowledge and familiarity with BJD from veterinary staff despite it being a notifiable disease under the QLD biosecurity framework http://www.daff.QLD.gov.au/4790_11656.htm.
- The information packages sent to producers contained a degree of complexity in the information and options available to producers. This required additional explanations which were mainly provided by the Industry Liaison Officer.
- Animal health consultants were not initially included in early discussions nor was the lab at Coopers Plains ready for the volumes received yet the impression was that that lab was reluctant to send samples onto Sydney for testing.
- Situation reports are very useful and it was preferred that they be distributed weekly on the same day (eg Friday). However they have been infrequent. Regular Sit Reps would provide leadership to communications particularly in the media.
- A proactive approach was required to ensure the correct information was distributed to the appropriate groups. The communications strategy was passive when it needed to be assertive so as to lead the response.
- Communications were greatly enhanced by the seminars.

Recommendation: QDAFF should have officers on staff (or failing that have arrangements to immediately second such expertise) who are

a. **personally familiar with each listed notifiable disease**
b. **available for rapid deployment**
c. **capable of providing practical, accurate and appropriate advice.**

Recommendation: Ensure consistency in advice and that relevant QDAFF officers are all aware of the processes and decisions required to manage affected positive herds

- QDAFF initially appeared to move slowly in the reporting of the index case and appeared too rigid in its application of the Australian and New Zealand Standard Diagnostic Procedures in terms of notifying key industry people. Earlier notification to senior policy makers, for example, would have allowed better preparation for the response and for dealing with the public. While QDAFF held concerns over potential breaches in confidentiality, Cattle Council contends this was overstated.
- Industry recognizes that within the northern beef cattle industry there was generally a low recognition of the risks of BJD and of the likely operational impact of a diagnosed BJD case on individual properties.
- Although Qld was obliged to act according to the National BJD plan, Qld did not appear to have a plan detailed and ready to go for the Q24 incident.
- There was support to fully test the Q24 herd , although this required consideration for the interests of the herd owners and of resource impacts on QDAFF early in the response (resolved by 2013)
- Industry reported generally very positive interactions with local staff who were interpreting the response as it evolved. There were a minority of instances where interactions were sub-optimal and different skills/expertise would have been preferable in the front line staff. The

initial coordination effort would have benefited from greater authority, leadership and technical knowledge.

- Staffing levels as less than adequate to cope with the management of quarantine restrictions on a large number of properties.
- Industry supports a complete herd investigation for the index herd to identify the entry point of BJD into QLD.

Recommendation: A number of groups and individuals are strongly supportive of full testing of the Q24 herd to enable pinpointing (trace back) of the source animal

The organization of the disease response with associated changes in roles and responsibilities lagged behind the diagnosis of BJD in the Q24 index herd. This was illustrated by the lack of full preparedness at the time the index herd owners made a public announcement regarding their infected status. Thus there was a lag between the time taken during the disease investigation/testing and the required responses such as response planning and strategic use of communications.

Disease investigation events

On 9th October a BQ veterinarian visited the index property to investigate 3 cows in poor condition. A positive blood test was received on 23/10/12 followed by histopathology consistent with BJD on 26/10 followed by further positive histology results on 5/11/12. Culture results were positive on 19/11/12 which resulted in a confirmed case of BJD on 20/11/12 then final culture positive results were confirmed on 9/1/13.

Disease response events

During October/November there was some confusion as to what constituted a diagnosis of BJD. The key reference documents for QDAFF staff are the SDR&G, ANZSDP and the QDAFF SOP for 'Responding to suspect and confirmed cases of BJD in QLD'. The SDR&G and ANZSDP appear to require culture results for confirmation yet also indicate a diagnosis of BJD may also be made using the balance of probability of a positive ELIZA in a herd with clinical signs, followed by histological signs 'consistent with BJD'.

Formal confirmation of the diagnosis of BJD

The SDR&G document outlines the Interpretation of Tests in Appendix 1:Cattle . That states *'Decisions on the Johne's disease status of an individual animal, or of a herd, require consideration of the herd history and local conditions. The results of diagnostic procedures will be reported as described by the ANZSDPs'*.

The ANZSDP states on Page 2: *'Diagnosis of Johne's disease is made on clinical grounds confirmed by the demonstration of M. paratuberculosis in the faeces by microscopy, culture, or by the use of DNA-based techniques. Diagnosis is made at necropsy by the finding of the pathognomonic lesions of the disease in the intestines, either grossly, histologically with detection of acid fast organisms, or by detection of M. paratuberculosis using culture or DNA-based techniques'.*

And, *'The isolation of M. paratuberculosis from faeces or tissue is the definitive test for Johne's disease. It is the most sensitive diagnostic tool and is considered to be 100% specific. The serological tests… relative sensitivity and specificity are often determined by reference to results of faecal culture'.*

According to the SOP for handling suspect BJD cases, once a positive ELIZA test is returned, a risk assessment should be conducted for high risk cases. The index case would qualify as high risk (animal > 2 years old, with signs of wasting, born on the property) and thus actions listed in the SOP 4.3.2.3 to be followed by the BQ Field Officer would include placing the property in immediate quarantine. Quarantine would appear to be have been enacted (verbally) shortly after the positive ELIZA result. As a notifiable disease should also be reported at that time, further definitive actions would be expected to be initiated by QDAFF management.

However there was a significant delay from when BJD was suspected (late October) until actions required by the SOP were initiated (13th November). During this delay additional resources were not diverted to the incident area to assist with the quarantine process or the trace forward process as required by the SOP. Response planning was commenced on 13/11/12 which was 21 days after the positive ELISA test, 18 days after the first positive histology test and 8 days after the second positive histology test.

Recommendation: The procedures governing the handling of the BJD incident were unclear and need to be updated and clarified. Ensure compatibility and consistency between the three guidelines and protocols for BJD through the harmonization of

- **SDR&G (Standard definitions, rules and guidelines)**
- **ANZSDP (Aus & NZ Standard Diagnostic Procedures)**
- **QDAFF's SOP for 'Responding to suspect and confirmed cases of BJD in QLD'**

Recommendation: For notifiable diseases other than BJD, ensure compatibility and consistency of guidelines and protocols.

Industry comments

- There were very different expectations between QDAFF staff and producers about an appropriate time interval between diagnosis (or quarantine imposition) until completion of PDIP's and initial testing.
- The 'rules' appeared to change during the initial period as early on the advice was that the most definitive means of testing (+ or -) was to euthanase and collect samples whereas later the advice was to assess the animal's infectivity via paired faecal PCR tests.

Recommendation: A stronger sense of urgency should be applied to future disease incidents as required by SOP's and guidelines. Responses of this scale should therefore utilize established emergency procedures which require immediate implementation.

10.1.1 Interactions with QDAFF staff from Individual producers

Industry comments

- The response from QDAFF officers was confusing in that the quarantine notice declared all animals on the property were classified as suspect. This didn't appear logical or was it manageable as the intent should be to identify the true 'at risk' animals due to contact.
- The means of delivering the quarantine notice was variable and if not handled carefully caused resentment amongst property owners. Some producers receiving an explanatory phone call prior to the notice in the mail and others not.
- It was apparent that some BQ staff were required to take on excessive workloads during the incident response
- High level QDAFF staff could be difficult to contact for direct animal health advice for affected producers in the early stages
- Many Biosecurity Officers based in the field were unable to explain technical aspects of BJD, not having had any training, organisational briefing or previous experience on the matter.

Recommendation: Re-establish the emergency response unit through training of a core team on rotation

Recommendation: Increase response capacity by ramping up the intensity of training/updates for BQ staff and industry representatives for notifiable diseases

Recommendation: Lead establishment of a Northern Australia industry liaison group to monitor, respond and advise on biosecurity issues in QLD, NT and WA

10.2 Quarantine process

QDAFF initiated trace forward activities shortly after the positive ELIZA tests. This next phase faced significant difficulties in accessing and efficiently extracting information from the NLIS database (for recommendations see the section on 'Records management'). QDAFF staff did not have an access database to interrogate NLIS and instead printed Excel spreadsheets to manually scan for animal movement information. This also involved calling purchasers to confirm transactions and required local knowledge to track some animals using other movement tracking systems such as records from crossing tick lines.

Industry comments

- During handling of quarantine notice distribution, there was a focus on following regulations rather than engendering cooperation and this resulted in avoidable tension between QDAFF staff and producers.
- During the public consultation phase in mid December through to January, there were multiple messages and some inconsistency in the messages reaching property owners and industry groups resulted.
- The confidentiality of the quarantine process can unintentionally exacerbate the isolation felt by affected producers through quarantine. This can impede access of affected producers to business and community support networks (including those of industry groups, community support networks, agents and lending agencies).

The delivery of notices to quarantine properties was by both post and by phone calls. Difficulty was found in contacting property owners prior to receiving their quarantine notice in the post which had the unintended consequence of causing additional stress and confusion to property owners.

However quarantine notices were accompanied by a fact sheet, Q&A sheet, Cattle Council fact sheet and website links.

The work load of local QDAFF staff was spread between contacting property owners in regard to quarantine notices and pushing ahead with the imperative to follow up on trace forward information from NLIS.

Recommendation: Delivery of quarantine notices to occur with a high degree of sensitivity and that case managers are appointed as a clear point of contact between affected producers and QDAFF

Recommendation: Monitor fatigue and stress support mechanisms during the early stage of an incident in QDAFF staff and affected producers

For further information see section on records management

10.2.1 Speed of resolution

The use of risk assessments within the broad framework of the National Standard Definitions, Rules and Guidelines (SDR&G) for the Control and Management of Bovine Johne's Disease, was accepted by the majority of industry organizations.

An improved flow of communications was of particular importance in articulating the complexities of the BJD disease response. A particular example was clarifying the difference between low risk and no risk approaches to BJD management. Moving from a no-risk to risk management approach provided greater flexibility and control. A no risk approach shows low flexibility and results in a very slow disease response compared to adopting a low risk response with some flexibility according to the risk of BJD spread.

Once the decision to quarantine properties is reached, the Department should rapidly move to resolution phase. The timeframes must be appropriate to industry with a high level of awareness of the financial cost to industry.

Specifically the timetable should be 'customer focused' and aimed at delivering clarity of options. When trade is impaired or ceased, industry expects Commonwealth and/or State DAFF to act quickly using pre-determined and tested protocols to offer a combination of compensation and options for affected producers. This expectation for a speedy response arises from the presumption that the Department's role includes an obligation to assist whilst also functioning as a regulator.

The preparation of each PDIP required individual attention which slowed the process. The pathways for affected producers generally were custom designed. An early appreciation of this process (ie prior to the disease incident) would have resulted in the preparation of guidelines for each industry segment (eg studs, breeders, store producers, fattening properties, back grounding and feedlots) in different management conditions (eg intensive, extensive, group mating, individual sires). These guidelines were produced internally by the Technical Reference Group and are now facilitate decisions that enable speedy release of at partial or entire herds from quarantine.

Veterinary groups believe that a shortage of government veterinarians has meant that progress in investigating remote properties has been slow. Private veterinarians have been engaged by

producers and those veterinarians report that while there has been some support and advice from QDAFF to help them undertake these tasks, this has not always been sufficiently helpful. At the same time they struggle with charging the client for activities that have previously been undertaken by the government.

Recommendation: Balance the capabilities within QDAFF to meet both requirements for both 'peace time' (disease incidents under control) and 'war time' (early stage high impact disease response) scenarios

Recommendation: Conduct rigorous testing of disease response plans and include input from stakeholders to ensure rapid, appropriate response to future disease incidents or outbreaks

Recommendation: Establish closer links between QDAFF and private veterinarians to facilitate their training and inclusion in future disease investigations

10.2.2 Impact of a strict quarantine process

The quarantine process has imposed a crippling impact on some sectors of the industry. It is perceived by some industry groups that this impact is unfairly borne by a minority of producers under quarantine from the trace forward investigations.

There is a less appreciated affect upon other agribusinesses such as feed companies and feedlotters that have internal biosecurity procedures that initially prevent them from entering onto 'quarantined properties'.

The flow on effect of quarantine is that some producers may be very hesitant to offer sick animals for diagnostic workup in the future. The caveat to this is that movement restrictions were flexible to create pathways to market for young or store animals and compensation for affected properties. There is a tipping point for producers in balancing the greater good vs individual self interest. In a slow moving disease such as BJD where it's on farm impact is often difficult to quantify, the balance is often towards self interest and therefore not reporting an animal showing signs consistent with BJD. However the tipping point for highly infectious diseases with rapid impact on animals and farm production (eg FMD or Bluetongue) is towards disclosure and seeking external advice.

For further information see Business continuity plans

10.3 Policies and procedures

The inconsistencies between the documents governing responses and diagnostic procedures (SDR&G, ANZSDP, QDAFF SOP) inhibited clear decision making until several weeks into the disease investigation. This is an issue for national decision makers to address.

The policy of 'low risk' vs 'no risk' was not completely understood. 'Low risk' leaves some flexibility in the options available to QDAFF in interpreting response to properties with BJD.

An important industry group perceived that SOP's were not always followed and that they were not fully adapted (ie impractical) for QLD conditions. This created uncertainty. The flexibility in following the SOP's was illustrated by the approach of the Technical Response Group. This group indicated that they would have preferred to see further alterations to the SOP's that included moving to managed market access programs and modification of movement restrictions.

One industry group changed its position to become opposed to quarantine and the Protected BJD status for QLD be changed to a Management Area. This was due to the impact of the quarantine process on producers and the belief that the number of animals affected warrants the introduction of market assurance programs.

Industry indicated that the understanding of policy and procedures was good for higher level QDAFF staff but this understanding was more variable at the local level. This was illustrated by the initial advice to producers to slaughter animals immediately.

In following policies and procedures QDAFF staff were also aware of the high level of scrutiny placed on their actions. The recent 'Hendra virus report' from the QLD Ombudsman highlighted the need for consistent policies, procedures and guidelines.

Recommendation: The procedures governing the handling of the BJD incident were unclear and need to be updated and clarified. Ensure compatibility and consistency between the three guidelines and protocols for BJD through the harmonization of

- **SDR&G (Standard definitions, rules and guidelines)**
- **ANZSDP (Aus & NZ Standard Diagnostic Procedures)**
- **QDAFF's SOP for 'Responding to suspect and confirmed cases of BJD in QLD'**

Recommendation: Animal Health Committee to review National Disease Protocols for BJD (and other diseases) to include information that is specific to tropical/Northern cattle production systems

10.3.1 Attitude towards maintaining protected status

The majority of producers are strongly in favour of maintaining protected status but an improved safety net is required (compensation fund, speedy reopening of trading) for affected producers. There is acceptance (with some dissent) of the high level of biosecurity promoted by the beef industry as a whole through peak bodies such as Animal Health Australia and DAFF. The national reputation for quality beef derived from healthy animals, benefits from maintaining the National BJD program and specifically from QLD's protected status for BJD. Export market access is underpinned by Australia's disease monitoring programs.

A section of industry is unconvinced of the value of QLD's protected status for BJD. This opposition to maintaining protected status is largely based on the relative impact of BJD to the industry compared to the impact of quarantine actions on affected producers. The assertion was that response and quarantine actions that ceased trade were out of proportion to the effect of the disease on individual farms.

Producers are aware of the need to recognize diseases on their properties that could spread rapidly to affect neighbours and the industry as a whole. They thus feel a strong moral responsibility to report significant disease incidents. However there is a tipping point where a disease must reach a significance warranting the impact of quarantine on the individuals' operation. BJD in many cases does not reach that tipping point and the reporting of BJD and possibly other diseases will 'go underground' unless the penalties (quarantine trade restrictions) are lessened and fair compensation is available.

Industry must have confidence in their Governments' biosecurity capability and support before producers will freely investigate possible biosecurity incursions/diseases without fear of substantial economic loss. This is a difficult issue to resolve as there are strong individual commercial issues that may conflict with industry wide issues and impacts.

Overall there was recognition that the national reputation for quality beef derived from healthy animals benefits from maintaining the National BJD program and specifically from QLD's protected status for BJD. This translates to better market access for a broad range of export markets.

Recommendation: Maintain QLD's protected status for BJD to align with the imperative to maintaining access to exports markets.

10.3.2 Future responses to on farm diseases

BJD is an example of a disease that has an apparent low impact due to slow spread and comparatively low economic impact on productivity. That contrasts with diseases that spread rapidly with demonstrably high impact on production, animal health/mortality and market access (eg FMD, bluetongue). As the significance of BJD is questioned due to a perceived lack of consequences to individual producers, there will be hesitation to report suspect animals. This will result in the disease 'going underground'.

Establishment of a cattle biosecurity fund is deemed important to underpin compliance with national biosecurity programs. A biosecurity incident, incursion or outbreak can break a farm business, cripple an industry and impact on a country's economy in a short period of time. Government and industry must prioritize provision of money for biosecurity on farm and post farm gate. Australia's competitive advantage on exports is clean green high quality products and maintaining biosecurity systems underpins this. A challenging new role for QDAFF is to assist industry to define the role of a biosecurity fund then, using sound financial analysis, establish the size of that fund and then arrange the money to enable the fund to fulfil its role.

Recommendation: Review BQ emergency operations manual in light of the BJD response

Recommendation: Assess the financial impact particularly on business continuity for properties affected by disease quarantine procedures in order to better understand industry issues and to assist in finding pathways to market (if the disease allows this) for affected animals. Include industry advisors in this review

Recommendation: Reassess the design of the QLD monitoring, surveillance and compliance program required under 2.13.2 of the National Johne's Disease Program SDR&G.

Recommendation: Review protocols and the level of monitoring for 'at risk' imported animals imported from interstate (and overseas)

Recommendation: Industry must be consulted to construct a clear case that advocates for the benefit of market access linked to BJD protected status

10.4 Communications

There was an expectation for greater authority from QDAFF to lead the public and private debate through clear communications and timely situation reports. Whilst communications were initially

slow, by the end of 2012, the level of interactions was meeting expectations. This progressed in 2013 to a well organized interactive communications system that included high level meetings and on farm information sessions. Regional meetings coordinated by the Minister and Biosecurity QLD for affected producers were of high value as some of these producers had difficulty accessing technical advice and/or information. High level industry engagement was effective through the Technical Reference Group, BJD Industry Advisory Council and ongoing Ministerial forums.

The response to the initial diagnosis of BJD (trace forward, quarantine) was dictated by National and State protocols. Accordingly communications with media should reflect this regulatory framework and the limited options available for QDAFF and affected producers. Overall, communications from QDAFF were irregular. This particularly applies to Situation Reports - timely and public statistics on number of quarantined properties, number of live exposed animals, and a breakdown of business types quarantined. Release of this information would assist accurate reporting in the media and reduce levels of industry and individual concern.

Recommendation: Be proactive in the regular release of Situation Reports containing general information to update testing and progress through the media and stakeholder networks

Industry comments

- Industry suggested that while the level of consultation with industry was initially slow, QDAFF developed a comprehensive and effective communication strategy, including regional meetings and roadshows, to convey information to the public and producers.
- There is a strong need for better industry engagement to increase compliance.
- Industry groups commended Minister John McVeigh for his efforts to personally come to grips with the challenge being faced and consult with industry on the way to move forward.
- The personal involvement of the Minister (and Deputy Premier) in meetings to bring stakeholders together was greatly appreciated.
- Industry associations were well informed of the Departments position and have been able to raise issues.
- A common thread from many submissions was the need for improved communication at most levels. After the initial stages, communications with industry improved particularly through the Minister's initiatives and through Dr Ron Glanville.
- Communication could have been more frequent and more informative. It is apparent that training in the content and style of communication would improve the capacity of QDAFF staff to transfer information to producers during a disease incident. For essential information seek feedback from target audiences on their level of comprehension and assessment of clarity, brevity and succinctness.
- The responsibility for communications was not clear when there was a need for communications at many levels including advice to producers/veterinarians/Industry groups.
- Industry sometimes felt it was difficult to assist as information on current disease status was difficult to access.
- A high level of secrecy (confidentiality) in the initial stages hampered the sharing of information. Situation reports were not as regular and informative as desired. The result was a delay in formulating the methodology for release from quarantine.

- Communications with National BJD bodies: The National BJD Strategic Plan reflects a partnership between all governments and relevant industries; nevertheless, apart from interactions with the National Technical Advisor, the flow of information to the National BJD Steering Committee has been patchy; additional transparency on State policies and operational practices would have been beneficial.

Recommendation: Reassess the communications strategy and delivery of key messages. It is essential to employ people with communication skills to develop these key messages through consultation with stakeholders.

Recommendation: Ensure guidelines for livestock owners, veterinarians are updated within 3 months of new information becoming available. Increase availability and accessibility of simple and complete fact sheets (ie difficult to obtain on the web)

Recommendation: During disease incidents maintain the practice of appointing an industry liaison officer(s) with credibility and standing in the chosen industry to build connections between QDAFF and livestock industry to fulfil the need for ongoing explanation of quarantine actions

The wording of communications is important and the use of 'outbreak' is seen as inappropriate by some industry groups. In a formal regulatory sense 'outbreak' is a term used for diseases requiring an emergency response under the EADRA protocols whereas 'incident' or 'disease investigation or response' is used to describe non-EADRA endemic notifiable diseases such as BJD.

Recommendation: The word 'outbreak' is restricted for use in disease responses included under EADRA and 'incident', 'investigation' or 'response' is used for other notifiable disease investigations .

10.5 Records and information management

The NLIS database showed inadequacies that were compounded by an ineffective interface between NLIS with QDAFF systems.

The lower than desirable compliance in recording NLIS transfers, particularly property-to-property transfers, has impacted negatively on the ability to trace cattle movements. While this problem is not a product of QDAFF's response to the BJD incident, there are lessons to be learned, particularly in the context of any future management of an emergency disease outbreak.

It appears from the initial delay in tracking the trace forward animals that QDAFF has underinvested in record management capacity. This particularly applies to real time systems to handle NLIS data and to monitor status of suspect or infected properties / animals. There appeared to be an underestimation of the resource requirement for the trace forward process and for the subsequent quarantine process.

To streamline the situation reporting process and aid efficiency of case management an efficient case management system should be sourced and installed.

Recommendation: Prioritize acquisition of IT systems including financial and human resources to enable efficient real time interrogation of the NLIS database

Recommendation: Critically assess whether the current information management systems are 'fit for purpose'

Recommendation: Review lifetime traceability of the NLIS-RFID system

10.6 Business continuity plans for industry

At the time quarantine restrictions were imposed, the scarcity of options and pathways available to industry unnecessarily added to the financial burden of quarantine. Clear unambiguous guidelines are required for moving affected stock onto feedlots and fattening properties. A whole of industry perspective was required to facilitate effective solutions for quarantined properties.

10.6.1 Range of impacts of BJD on property production systems

Industry comments

- Range of impacts on production systems varied (negligible for operations producing terminal animals compared to crippling for studs).
- Overreaction to a disease with little commercial consequence.
- Major human cost and recognition that stud breeding is a vocation as well as a business.

Because of the longevity and difficulty of detection of the BJD organism in both the animals and the environment, the capital value of the affected property is uncertain which places additional stress on the book value of the business and its viability.

Animal movement is central to the industry business model, and thus overall business system performance relies on avoidance of drastic events such as biosecurity failures, or even other systemic issues such as weather events, transport or power failures. To avoid adverse events such as major disease incursions depends on the recording of animal health status both during movements and when on-farm – ie both individual and aggregate. It is essential that the 'system' through QDAFF is able to analyse 'errors' and 'near miss events' under a 'no-blame' culture. This then leads to continuous system improvement, better communication within the industry (and between neighbours), improved biosecurity practice, improved animal health and ultimately improved customer or market satisfaction.

Leading producers identified the risk to beef cattle businesses of not separating animal groups (eg separate properties and maintaining separate Property Identification Codes, PICS). In some cases, the practice of combining PICS can potentially increase the impact of quarantine on a beef cattle business.

Recommendation: A risk analysis to be undertaken of routine cattle movements into QLD from areas of lesser BJD status

Recommendation: Create an industry biosecurity risk assessment template and facilitate its voluntary adoption by industry

Recommendation: Be proactive in assisting industry to develop capacity, awareness and leadership skills in managing biosecurity so as to reduce the risk of a biosecurity incursion

There is a very high need for urgency for the most affected groups (eg stud breeders and breeder only producers) to resolve the quarantine status. For stud breeders trade (and income) is totally

stopped through movement restrictions. Where there is a commitment from individual producers to complete negotiations on a PDIP, a high priority should be placed on a speedy resolution.

When quarantine is enacted affected producers require access to independent financial advice (eg from Government financial counsellor) as quarantine has an immediate impact on their short term viability.

Recommendation: Assess the financial impact particularly on business continuity for properties affected by disease quarantine procedures in order to better understand industry issues and to assist in finding pathways to market (if the disease allows this) for affected animals. Include industry advisors in this review.

10.6.2 Pathways to market

Groups such as feedlotters and fattening properties are willing to assist in providing pathways to market for affected cattle. This would greatly assist in relieving the financial impact of quarantine on the sectors that cannot sell direct to abattoirs. However it is essential that all uncertainty regarding movement of animals and the impact of accepting the BJD affected cattle onto the next property or feedlot are clearly documented well in advance of a disease incident.

Feedlots are accustomed to working with detailed, unambiguous animal health & handling protocols and require this level of clarity in QDAFF guidelines. Feedlotting groups commented that while guidelines for feedlotting BJD cattle were mailed to them (and available on the web) they saw value in QDAFF staff being proactive and making direct contact to make those guidelines 'industry ready'.

Recommendation: Establish a Technical Reference Group for selected complex, long term disease responses and charge the Technical Reference Group with the task to creatively devise pathways for movement of low risk (eg tested, young animals) quarantined cattle to fattening properties or feedlots

Recommendation: To create pathways to market (eg for BJD affected cattle) ensure within QDAFF there is immediate access to the commercial expertise required to creatively assist in troubleshooting the regulatory impediments to prepare cattle for finishing to market weights eg access to feedlots or finishing paddocks for infected cattle.

Recommendation: Ensure clarity and precision in the guidelines for feedlots accepting BJD affected cattle.

10.6.3 Biosecurity fund

The industry biosecurity fund needs to be of sufficient size to give livestock owners the confidence to seek investigation of an unusual (or notifiable) animal disease. Compensation must be of sufficient size to 'tip the balance' in favour of reporting a suspicious disease. Calculation of the size of the compensation fund should have sound economic basis.

There is strong interest to establish a biosecurity fund. That fund may derive contributions from a variety of individuals, organizations and public agencies that have are stakeholders in the cattle industry. The level of contributions cold reflect the stakeholder's exposure to biosecurity risk such that there were majority contributions from industry, supplemented by funds from the community – government- plus contributions from lenders (banks), animal health companies and agribusinesses.

Recommendation: QDAFF to assist industry to define the role of a fund then, using sound financial analysis establish the size of the compensation fund and then the source of funds to enable it to fulfil its role

10.7 Testing process

The capability to conduct testing has been reduced in critical areas which risks being 'one deep' in key areas. Critical paths are therefore easily obstructed with potentially significant operational delays.

At the time of the BJD incident the number of laboratories was in the process of being reduced from 3 to 1 with the closure of the labs at Townsville and Toowoomba. It is noted that the current disease incident occurred during the relocation process, during changes in culture methods and prior to full integration of the PCR test as a BJD diagnostic test.

The laboratory team at Coopers Plains is motivated, skilful, organized and hard working. However the staffing profile that was available across the 3 labs has changed substantially following the restructure into a single lab at Coopers Plain. The current staffing profile lacks redundancy and is often effectively 'one deep' in key positions which leaves the testing process vulnerable to the impact of routine HR occurrences (leave due to sickness, vacation, public holidays etc). Because many of the laboratory positions require specific skills and knowledge of current processes they are not easily back filled. The testing processes therefore can easily become the rate limiting step for the entire quarantine process.

The management and coordination of incoming tests is not optimized. This is illustrated by the large demands that arise from the testing of multiple cattle sent to slaughter on the same day. Such labour intensive processes may overwhelm test laboratory capacity if not coordinated properly with laboratory workloads.

Industry comment

- There was concern about the resourcing for the laboratories performing testing for BJD. There was doubt as to whether resourcing is sufficient for an effective disease response effort while maintaining other necessary laboratory functions.

Recommendation: Identify the limiting steps in the testing process and provide redundancy in equipment and (additional) staff to allow for expected operational variability.

Recommendation: Reassess the operational effectiveness and capacity (including staff numbers) of the Coopers Plains Laboratory in the light of the current BJD testing load. It is suggested that the Steering Committee established for the planning of consolidation from the 3 labs into the single laboratory be consulted for this role.

Recommendation: For laboratory scientists, include time for R&D and maintenance of quality systems

The early adoption of new testing technology, (fecal PCR) was accepted enthusiastically by industry.

The new testing procedures, particularly the PCR test, remains under development and additional validation/harmonization of procedures should be undertaken with the University of Sydney and EMAI laboratories that initially developed the test.

Recommendation: Update SOP's for QLD DAFF and for the National SDR&G's and the SCAHLS sub-committee to accommodate the new PCR test

Business continuity plans for BQ

During periods of large scale disease investigations, greater work-loads will inevitably test out the capacity of the laboratory equipment, staff and procedures. It is essential that proper planning is enacted to cope with the surge in work load whilst also maintaining day to day operations.

Recommendation: Update the business continuity plan to account for expected changes in workload (sample submission) whilst continuing ongoing activities. It should include plans for accessing additional staff, facilities for high volume periods (see BQ Emergency Operations Manual Section 10.4)

Tracing back from the index case to the original source is viewed as a priority by most groups. This would clarify the source and indicate the probability of additional nodes of infection across QLD. There is common industry-wide perception that the owners of the Q24 Index herd have not received sufficient support (technical, general advice). The index herd owners are therefore understandably reticent to engage in further testing unless they see can some benefit to their industry/animals/business.

Recommendation: Complete trace back investigation.

10.8 Structure and future capabilities for BQ

This disease incident demonstrated a disconnect between mid to high level policy groups and local operations staff. A major disease incident requires a substantial shift in roles, focus and urgency from those usually encountered in day to day activities. There should be greater capacity to manage these significant changes in operational roles and responsibilities.

10.8.1 Disease preparedness

Widespread dispersal of animals from the index property required an early appreciation of the implications of dispersal. However it appeared to take several weeks before QDAFF scaled up their response to match the scale and impact of the quarantine measures on each segment of the beef cattle industry.

Industry comments:

- Industry does not have full industry confidence in the current structure, staffing profile and staffing number to adequately cope with or to lead disease incident outbreaks.
- There is a gap between policies and their implementation at an operational level.
- The presence of Ron Glanville as a conduit between industry and QDAFF was greatly appreciated but also showed that succession planning had not yet been completed.

Recommendation: The BQ structure should be reassessed to ensure the level of authority is appropriate to enact a coordinated multilevel response to a notifiable or emergency disease.

The descriptions of Dr Ron Glanville's key skills and strengths that made an impact on the response are insightful and they indicate capabilities that are a priority for QDAFF to nurtured and/or acquire. These capabilities are generally aligned with the capacity for effective dialogue with industry groups that encourage bilateral understanding of issues and roadblocks. This enables identification of actions and pathways for handling diseased animals and thus lessening the impact on producers.

Industry comments on desirable skills and capabilities:

- Engage effectively and directly with quarantined producers
- Effectively communicate high level technical advice to industry directly and through the Industry Advisory Committee
- Disseminate relevant and timely advice that provides clarity to stakeholders
- Appreciate the seriousness of the financial situation confronting industry
- Use industry knowledge and context to provide appropriate urgency and direction to the disease response
- Guide affected industry participants through the difficult process of planning, management and cleanup

Industry comment

- To ensure confidence in QDAFF's capacity to manage disease incidents (or outbreaks) the current and future livestock disease response plans should be challenged (ie simulation testing) and rigorously evaluated for performance. Stakeholders should be included in the testing and evaluation process as should a variety of diseases (both rapid and slow moving diseases). The key objective of testing should be to identify areas where delays in implementation occur.

Recommendation: Balance the capabilities within QDAFF to meet both requirements for both 'peace time' (disease incidents under control) and 'war time' (early stage high impact disease response) scenarios

Recommendation: Conduct rigorous testing of disease response plans and include input from stakeholders to ensure rapid, appropriate response to future disease incidents or outbreaks

Industry asserts that resources (from additional government positions or through partnerships with industry) should increase to improve the management of current quarantined properties, restore surveillance activities to meet national and international obligations for a broad range of notifiable diseases, and improve laboratory testing capacity to meet surge requirements.

Recommendation: Conduct a skills audit for BQ staff assigned to operations management and 'front line'

10.8.2 The role of QDAFF in establishing options and pathways to market

Industry comments:

There is significant room for improvement in the circumstances of quarantined properties, principally through:

- The development of flexible movement solutions for quarantined producers
- Providing greater support from Government outside of the Financial Assistance Package
- Proactively addressing misinformation and clearly stating the Government policy position

- Providing timely, accurate disease data for producers, industry decision makers and media outlets at regular intervals.

There is a relatively recent expectation that QDAFF should play a leading role in facilitating movement of animals from affected (quarantined) properties into the supply chain. This will require assistance to create pathways so that producers can finish their animals via feedlots and/or onto fattening pastures. Pathway options focus on modifications to movement restrictions and clarification of feedlot regulations.

The current model of QDAFF staff as primarily regulators focused on compliance may need to change to include a component of industry advocacy. Currently within QDAFF the balance of skills, approach and culture are weighted towards enforcing regulations. Additional training and communications skills would be required to cope with changing technical requirements and the flexibility to develop then choose options. A culture of customer service with an understanding of agribusiness and markets would enhance the delivery of services and bring QDAFF closer to industry.

Recommendation: Assess BQ frontline staff knowledge and understanding of industry production systems

Recommendation: Initiate an exchange program where QDAFF officers are 'embedded' in short term industry positions to gain understanding of agribusiness systems

Recommendation: Initiate a scholarship system to encourage recent graduates to positively view a career with QDAFF

Industry strongly asserts that training of private veterinarians should be an ongoing priority to add capacity and build QDAFF resources (eg expansion of the Australian Veterinary Practitioner Surveillance Network)

Recommendation: Engage and train practitioners to undertake surveillance activities as required by QDAFF to meet national and international obligations

Recommendation: Initiate a range of scholarships and cadetships (partially or fully funded) to encourage entry into biosecurity positions

Industry comments

- The majority of interactions with BQ staff were very positive
- There are suggestions for improvement based on observations that some field staff
  - could not competently address technical questions posed by producers.
  - immediately quarantined properties without offering sufficient explanation to producers.
  - 'lost track' of test results.
  - were unsure as to the process to develop a Property Disease Investigation Plan.
- Interactions with Departmental management staff:
  - The initial Industry Liaison Officer (who has since left the Department) was not given enough support and training for the disease crisis management role.

- There was a perceived or actual reluctance by Biosecurity QLD managers to prioritise the Q24 disease response in the course of the initial announcement in terms of human and financial resourcing.
- Overall, the general impression was that Biosecurity QLD would be ill-equipped and under-resourced to deal with a disease response for a serious rapid moving disease such as Foot and Mouth Disease.
- Statistics on the BJD disease investigation (i.e. number of quarantined properties, types of business, the profile of positive tested properties) were not readily available despite repeated requests.

10.9 R&D required

Greater knowledge of BJD under QLD (tropical, extensive and arid) conditions is advocated with a clear focus on R&D that is aligned to maintaining export market access.

Further information in relation to BJD in northern environments.

a. Surveillance and test (eg PCR) development
b. Management of BJD on infected or suspect properties
    a. Survival of BJD in QLD conditions
       eg Test the 12-month decontamination (destocking) period of pastures in QLD
    b. Study vertical and horizontal transmission within infected herds
c. Options and pathways for affected properties
    a. Further information on the behaviour of the BJD organism on feedlots
    b. Economic and personal impact of BJD

Recommendation: QDAFF engages with industry, stakeholders and research institutions to prioritize R&D requirements to enhance knowledge of BJD in northern Australia

- **Surveillance and testing procedures**
- **Management of BJD on infected or suspect properties**
- **Options and pathways for affected properties**

11 Description of the QDAFF response at Rockhampton

11.1 Summary of events

Date	Disease Event	Disease response event	Communications/engagement activities
9/10/12	Collect samples from Cows #1 & #2 from the index herd (faeces, serum) near Rockhampton		
17/10/12	Index herd cow #3 euthanasia, necropsy		
23/10/12	Johne's ELISA positive result for cows #1, #2.		
26/10/12	Histopathology consistent with Johne's for cow #3		
31/10/12	euthanased and necropsied Cows #1, #2		
5/11/12	Histopathology consistent with Johne's Cows #1, #2.		
13/11/12		Internal planning of BJD response	
19/11/12	Johne's positive interim faecal culture Cows #1, #2		
26/11/12		Meeting with BQ laboratories to assess BJD testing capacity and procedures	
27/11/12		BQ BJD Disease Response Strategy developed	
28/11/12		Regular meetings of BQ BJD Response Team	

Date	Disease Event	Disease response event	Communications/engagement activities
30/11/12		Animal tracing is conducted on the index case to identify risks and the spread of the disease.	Minister convenes industry meeting in Rockhampton.
3/12/12			BJD Meeting between QLD, NT, and WA CVOs .
7/12/12		Owners of BJD affected premises contacted to advise of the situation. Movement restrictions placed on the initial 138 properties. Movement restrictions removed from two feedlots. BJD Operating procedures & assessment templates developed to support field activities.	Two media releases, revised webpage an information pack, and guidelines for veterinarians distributed.. Weekly industry update meetings commenced.
10/12/12			Minister convenes industry meeting in Brisbane to update industry representatives.
14/12/12		Development of Property Disease Investigation Plans (PDIPs)	Bi-weekly media releases
19/12/12			Minister hosts industry forum in Brisbane
21/12/12	Diagnostic samples submitted to Biosecurity QLD laboratories from 41 properties	PDIPs completed for 34 properties; Risk assessment to prioritise sampling and testing completed for 65 properties. Quarantine released for 10 properties (6 feedlots)	New Industry Liaison Officer appointed (Dr Ron Glanville) BJD Veterinary guidelines & FAQs updated
4/1/13		BJD Technical Reference Group first meeting	
09/01/13	Confirmed Johne's positive faecal cultures for Cows #1, #2	BJD Industry Advisory Committee first meeting	

Date	Disease Event	Disease response event	Communications/engagement activities
10/01/13	Confirmed Johne's positive tissue cultures for Cows #1, #2		
15/1/13 16/1/13			Minister visits 5 affected properties near Rockhampton
18/1/13		Premier and Minister announce $2M grant plus $3M loan to initiate QLD Cattle Industry Biosecurity Fund	
23/1/13 24/1/13			Minister, CVO, Industry Liaison Officer host workshops for affected producers in: Gympie, Biloela, Rockhampton, Emerald
5/2/13		The policy 'Management of bovine Johne's disease' was completed.	
6/2/13	Tracing of potentially infected animals from 2nd and 3rd infected properties completed.		Fact sheet 'Key information for affected producers' outlining testing and management strategies uploaded to the DAFF website.
20/2/13 21/2/13			Minister, CVO and Industry Liaison Officer hold workshops for affected producers in: Mackay, Charters Towers; Cloncurry, Roma
6/3/13	One confirmed infected property (index property) Two presumptive infected properties waiting definitive (culture) test results.	80 properties remain under quarantine. 78 properties have been released from quarantine.	

12 Appendices

12.1 Animal Health Australia publications

12.1.1 National BJD Disease Control Program

http://www.animalhealthaustralia.com.au/programs/johnes-disease/national-johnes-disease-control-program-njdcp/

12.1.2 National Johne's Disease Program standard definitions, rules and guidelines (SDR&G)

http://www.animalhealthaustralia.com.au/wp-content/uploads/2012/06/BJD_SDRGs_8thED_May2012.pdf

12.2 QLD DAFF publications

12.2.1 Guidelines for veterinarians

http://www.daff.qld.gov.au/documents/Biosecurity_GeneralAnimalHealthPestsAndDiseases/guidelines-for-veterinarians-BJD.pdf

12.2.2 BJD Information for cattle producers

http://www.daff.QLD.gov.au/documents/Biosecurity_GeneralAnimalHealthPestsAndDiseases/bovine-johnes-disease-information-pack.pdf

12.2.3 PDIP

http://www.daff.QLD.gov.au/documents/Biosecurity_GeneralAnimalHealthPestsAndDiseases/PDIP-template-V2-3.pdf

12.2.4 Key information for affected producers

http://www.daff.QLD.gov.au/documents/Biosecurity_GeneralAnimalHealthPestsAndDiseases/key-info-for-affected-producers.pdf

12.2.5 Key information for feedlot owners/operators

http://www.daff.QLD.gov.au/documents/Biosecurity_GeneralAnimalHealthPestsAndDiseases/key-info-for-feedlot-owners-operators.pdf

12.3 QLD DAFF SOP's

12.3.1 Biosecurity Emergency Operations Manual

12.3.2 SOP for Responding to suspect and confirmed cases of Bovine Johne's Disease in QLD

12.3.3 SOP for Reporting of bovine Johne's disease laboratory results to owners

12.4 Other references

1. Kawaji, S., et al., *Detection of Mycobacterium avium subsp. paratuberculosis in ovine faeces by direct quantitative PCR has similar or greater sensitivity compared to radiometric culture.* Vet Microbiol, 2007. **125**(1-2): p. 36-48.

2. Webb Ware, J.K., J.W. Larsen, and P. Kluver, *Financial effect of bovine Johne's disease in beef cattle herds in Australia.* Aust Vet J, 2012. **90**(4): p. 116-21.

3. Animal Health Surveillance Quarterly Report March 2013, 17:4;p14

http://www.animalhealthaustralia.com.au/elibrary?page=elibrary/edition/7059

4. Epidemiology and Pathogenesis of Johnes Disease in Cattle. Prepared for AHA by Dr John Craven.

http://www.animalhealthaustralia.com.au/wp-content/uploads/2011/04/Epidemology-and-Pathogenesis-of-Johne%E2%80%99s-Disease-in-Cattle.pdf

5. Frawley P.T. (2003) Review of rural veterinary services report. Dept. of Agriculture, Fisheries & Forestry & Department of Education, Science and Training, Australia.

http://www.ava.com.au/sites/default/files/documents/Other/Frawley%20report.pdf