Identifying Approaches to Reduce Q Fever in NSW

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Q fever is a bacterial infection (*Coxiella burnetii*)

First identified in Australia (1930's) - initially called *Query Fever* because the cause was not known.

Main hosts - *cattle, sheep, goats*, cats, dogs, rodents, kangaroos & wallabies.

Transmission most frequently from inhaling Q-fever contaminated dust or aerosols after shedding in birth fluids and placental tissue. Bacteria also present in urine, faeces and milk. Ticks also play a role in transmission. Direct contact or ingestion of contaminated materials or animal products may also result in transmission.

*Coxiella burnetii* can remain in the environment for long periods of time.
Who is at risk?

- Agricultural workers
  - Shearers
  - Wool sorters
  - Livestock transporters
  - Tanning and hide workers
- Farmers
- Abattoir workers
- Dairy workers
- Animal herders
- Stockyard workers
- Maintenance engineers, electricians and plumbers etc. in at-risk environments
- Visitors to at-risk environments, e.g. research workers, teachers, school students, insurance agents and sales people etc.
- Wildlife and zoo-workers working with high-risk animals
- Laboratory personnel handling veterinary specimens or working with *C. burnetii*
- Anyone exposed to cattle, camels, sheep, goats and kangaroos or their products (including products of conception)
- Veterinarians, veterinary staff and veterinary students
- Professional dog and cat breeders and handlers
Health Impacts

› Flu-like symptoms: including high fever, chills, headache, extreme fatigue, nausea, muscle and joint pain and severe sweats.

› Post Q Fever Fatigue Syndrome (QFS) occurs in ~ 10-20% of cases.

› Small number of people develop severe illness such as pneumonia or endocarditis and other conditions.
Long Term Trend

Q fever cases, NSW 1990 - 2015

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### Q Fever Notifications, NSW 2010-2015

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*Std notif rate (per 100,000)*
Aim & Method

Aims:
1. To determine knowledge of the risks, experiences and prevention options available for sheep, cattle and dairy farmers.
2. To ascertain how to improve communication with producers to reduce Q Fever risks.

Methods:
1. Individual interviews (n=4: 3 male/1 female) - Beef, Dairy, Sheep (2)
2. Focus groups across NSW (n=3: 21 male/6 female) - Western, North Coast, Hunter LHD’s
3. Community Meeting (n=1: 16 male/11 female) - Western LHD
4. Proceedings recorded, transcribed (exc. Community mtg), coded - Grounded Theory
“We haven't had any diagnosed Q fever within our operation and I don't know of anyone personally who has had it.” (North Coast)

“I've had two friends that have had the disease; the first one didn't suffer badly. It certainly incapacitated him for a little while, but the second one - both farmers …, he was not very useful on the farm at all. (North Coast)

“Yes my husband's had Q fever, and really was quite sick for about six weeks. He had quite bad malaise. He had time off work, which was his actual work outside of home, plus the work on the farm; put a lot of pressure on those - myself and the rest of the family, because he slept or he was in pain, and since then he hasn't been able to drink any alcohol. He's tried to have a drink. He gets really severe liver issues.” (Western)

“I got it mulesing lambs and it put me in intensive care for a week. I was pretty crook actually. I got pneumonia on top of it and, yeah, it nearly cleaned me up.” (HNE)
There was mixed knowledge about risk & transmission pathways. Individuals that had Q Fever had a better understanding:

”Yeah well it's caught from placentas that sheep, but any blood products. I got it from mulesing sheep actually. I was mulesing sheep and exposure to the blood of weaners.” (HNE)

“I don't know anything at all about Q fever and how it's transmitted - quite green in that department.” (Western)

“I just think we were surprised back in the drought that people were contracting it in small rural towns that were full of dust like Trangie. We didn't really realise that that's how it was transferred. We just thought it was - I don't know what we thought, but we just thought it was - people who milked cows were at higher risk.” (Western)
Hygiene practices varied and were not always considered practical. In cases when used they were reported as less than optimal.

“I wear gloves and try to avoid contact, and wash fairly thoroughly after I've done the job. Probably it's good practice to cover up any open wounds. Whether that's actually effective or not I don't know, but basically gloves and a good wash with soap and probably warm water afterwards is where we'd go.” *(North Coast)*

“I must admit I don't take any precautions whatsoever. [I don't either mate]. They're horrible. I can't stand them [laughs].” *(North Coast)*

“I just keep thinking back to my situation, how I break most of the rules because I mark my lambs when they're a day old when they're out in the paddock, and I'm often picking up animals and then I'm recording the details and three hours later I come back and wash my hands. It's not practical to be putting gloves on and off while I'm doing the job and I guess maybe I paid the price; I've had Q fever.” *(HNE)*
Vaccination was seen as the best prevention mechanism.

“Well there's a vaccine for it, that's the best way. Or if you've had it, you won't get it again. So ordinary hygiene about avoiding those placentas. But largely in the job that I'm in, or abattoir workers, those sort of people, you can't avoid it. I mean you've got to be vaccinated. That's the only way to avoid getting it I'd have to say, but not put your hands in your mouth and stuff I suppose, yeah.” (HNE)

“I don't think you can avoid it on farm unless you're vaccinated. That's the only way I know of prevention.” (Western)
Findings - Experience of those vaccinated

“It's a bit of a pain to have to go in twice, but that's about it.” (Western)

“Pain in the arse factor for sure… Yeah, it is and then you're going to sit at the doctor's waiting for them to get your vaccination and the whole lot.” (HNE)

“It's probably the fact that you've got to go a couple of times to get it done and a bit inconvenient but, yeah, it's a pity it's not, yeah I don't know [unclear] can't get it in one hit.” (HNE)

“Some of the doctors, they might be in a rural area, but know nothing about the rural enterprises around them and the business…. You go to [town] I'd say none of them - it'd be very few of the doctors would know anything about it. So I think they would have to be targeted.” (North Coast)
Barriers To Vaccination

1. Time

“..they'll always use the occasion I haven't got time, I haven't got the money, or it's not going to happen to me.” (Western)

2. Costs

“Reduce the cost of it and you'll get a heap more people vaccinated. It's the money; it's all about money.” (HNE)

3. Access (GP & Vaccine)

“My doctor's in Armidale and I ended up having to go to four pharmacies before I found it. I was just about to give up and I thought I'd have to order it in because I'd done the test and I was due for the shot.” (HNE)

“It seemed to be a little bit problematic …, because I was told there was basically a fellow in Blayney that was doing it, and that's an hour and a half's drive for me. (Western)
4. Adverse Reactions

“...the wife of the share farmer took their son to get a Q fever needle. After they left the surgery, he was on L plates ... He had a seizure about probably two minutes from the surgery. He was driving a LandCruiser 100 at 100 kilometres an hour through town because he'd seizure - he had locked the accelerator flat.” (HNE)

5. Anti-Vax

“...there are a number of people who are very against any sort of vaccine. We probably don't see many of those in agriculture though, because we're so routine ..., they're probably not as anti-vaccine.” (Western)

6. Managing Staff

“Well workers aren't cooperative. We come across that all the time … people who come from non-dairy farming backgrounds haven't [been tested and vaccinated], and ..... they're really resistant.” (Western)
Summary of Issues - The River

› Upstream
  • Risk knowledge/perception
  • Consequences (personal, family, business)
  • Prevention methods
  • Adverse reactions
  • Anti-vax views

› Backlogs
  • Easy access to screening/vaccination

› Downstream
  • Cost
  • Time
  • GP knowledge
  • Managing staff
Key Strategies

1. Identified need to improve public awareness & knowledge of Q Fever
   - risks
   - consequences
   - prevention

   “I think it's just an awareness issue; if the education was there of the potential risks of not being vaccinated, I think the situation would be dramatically different, now.” (Western)

2. Channels of communication noted

Existing networks e.g. ABC radio (Country Hour/ Rural Report), TV - Landline, Newspapers - The LAND, regional papers, Social Media?, NSW Farmers, commodity groups, Local Land Services, local Stock & Station agents, Workcover, Primary Health Networks
3. Group screening / vaccination approaches e.g. at saleyards

“It seemed to be a little bit more problematic to get organised to go through the testing as an individual. So when groups can be organised, I think it makes the whole process easier. (Western)

4. Subsidies were supported to maximise uptake

“Having a strong campaign in a particular area, promoting that it's going to be done as a group. I think there are benefits in that sort of solidarity within an area, to get people together and get it done en masse, and there are probably economies of scale as well, and it's possible that the process could be done a little bit cheaper if there's those groups. If there's a way of augmenting the cost that always helps.” (Western)

5. GP Skills

Continue to develop GP skills in relation to zoonoses including Q Fever
Where to Next?

› Obtain funding for a trial program in a sentinel site - incorporating key strategies outlined e.g. saleyards for higher-risk persons and other community members.

› Conduct trial.

› Evaluate and make recommendations based on results for application within NSW and other states.

› On-going development work with GP’s on zoonotic illnesses