Q Fever Guidance Document

NASPHV/NASAHO

Q Fever Committee

Q Fever Committee

- Formed in January 2012
- Joint leadership of the National Association of State Public Health Veterinarians (NASPHV) and the National Assembly of State Animal Health Officials (NASAHO)

Membership

- Alicia Anderson, Centers for Disease Control and Prevention
- Tom Boyer, American Goat Federation
- Ann Garvey*, NASPHV
- Katherine Marshall, USDA
- Paula Menzies, University of Guelph
- Julia Murphy, NASPHV
- Paul Plummer, Iowa State University
- Gatz Riddel, American Association of Bovine Practitioners
- Paul Rodgers, American Sheep Industry
- Joni Scheftel, NASPHV
- Tahnee Szymanski*, NASAHO

Goal

- To provide recommendations for a coordinated public and animal health response to a Q fever outbreak in response to the 2011 multi-state outbreak in the northwest US and the recent outbreak in the Netherlands.

2011 Multi-state Q Fever Outbreak

Washington, Montana, Oregon

May 2011

- Q fever was diagnosed in humans in both Washington and Montana
- All human cases linked to contact with goats that had originated from a single farm in Washington.
  - Earlier in 2011 this farm had experienced an abortion storm in it's goat herd (14 of 50 pregnant goats/28%).
  - *Goat placental samples submitted for diagnostics were found to be C. burnetii*-positive
- 20 farms with epidemiological link
  - 16 – Washington farms
  - 3 – Montana farms
  - 1 – Oregon farm

Joint Investigation

- CDC
- USDA
- State public health officials
- State animal health officials
- Local public health authorities

MT Farm B

- Abortions, weak kids, and ewe loss
- 33/55 goats ELISA positive
- 25/27 vaginal swabs PCR positive
- All milk samples PCR positive
- Genome equivalents per swab ranged from 544 – 2,018,400

Issues Identified During Investigation

Quarantine

- Under what conditions would quarantine be released?
  - All animals ELISA negative?
  - All animals PCR negative?

Issues Identified During Investigation

Animal product risk

- Raw milk consumption
- Sale of goat's milk soap

Issues Identified During Investigation

Environmental contamination

- Birthing stall: 1,405,496 genomes/gram
- Living room floor following carpet removal and bleach treatment: 692,099 genomes/gram

Prevention and Control of *Coxiella burnetii* infection among Humans and Animals

Guidance for a Coordinated Public & Animal Health Response, 2013

Available on NASPHV website

http://www.nasphv.org/Documents/Q_Fever_2013.pdf

Prevention and Control of *Coxiella burnetii* Infection among Humans and Animals: Guidance for a Coordinated Public Health and Animal Health Response, 2013

National Association of State Public Health Veterinarians
National Assembly of State Animal Health Officials

Q fever, an acute or chronic zoonotic illness caused by the bacterium *Coxiella burnetii*, has received international attention in recent years, primarily due to a large-scale outbreak in the Netherlands from 2007 to 2010 involving more than 4,000 human cases and the euthanasia of 50,000 goats, one of the primary reservoirs for the bacterium *(94)*. In 2011, a Q fever outbreak in the northwestern U.S. implicated 21 goat farms in three states and resulted in 20 human infections *(21)*. The Netherlands outbreak, the largest reported in history, and the recent U.S. outbreak illustrate the importance of a coordinated animal and human health response to such outbreaks and the need for comprehensive response guidance for public health and animal health officials.

In January 2012, the NASPHV Q Fever Committee was formed under joint leadership of the National Association of State Public Health Veterinarians (NASPHV) and the National Assembly of State Animal Health Officials (NASAHO) to formulate recommendations for a coordinated response to Q fever outbreaks. This document provides a brief background on the epidemiology, diagnosis and management of *C. burnetii* infections in humans and animals, as well as guidance for conducting an integrated investigation and response to *C. burnetii* infection among humans and animals. The recommendations are intended to guide public health officials, animal health officials, physicians, veterinarians, and others concerned with control of *C. burnetii* infection and protection of public health.

Committee Members:
Alicia Anderson, Centers for Disease Control and Prevention
Tom Boyer, American Goat Federation
Ann Garvey, Co-chair, National Association of State Public Health Veterinarians
Katherine Marshall, USDA Centers for Epidemiology and Animal Health
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Paul Rodgers, American Sheep Industry
Joni Scheftel, National Association of State Public Health Veterinarians
Tahnee Szymanski, Co-Chair, National Assembly of State Animal Health Officials

Content

- Background information on *C. burnetii* infection in humans and animals
  - Epidemiology
  - Clinical presentation
  - Testing methods and interpretation
  - Treatment and monitoring
  - Controlling transmission
- Joint public health and animal health investigation and response
- Recommendation for future action
- Appendices

Public Health Response

1. Interview human Q fever cases for illness and exposure history.

2. Identify people in contact with or potentially exposed, through aerosol transmission, to animals with suspected or confirmed coxiellosis.

3. Discuss with animal owners/caretakers

- Risks
- Routes of transmission
- How to prevent additional human exposure
- Need for medical attention should symptoms develop

Public Health Response

4. Alert health care providers and medical clinics in surrounding areas.

5. Provide guidance to healthcare providers on diagnostic testing options, test results interpretation, and treatment.

6. In partnership with animal health officials, provide outbreak information to media outlets and stakeholders as appropriate.

7. Perform epidemiological analysis to characterize case demographics and to identify risk factors associated with human illness.

Animal Health Response

1. Perform on-site investigation. Collect:
    - Species and number of animals on premises
    - Animal management practices
2. Contact herd/flock veterinarian.
    - Diagnostic testing
    - Treatment considerations

Animal Health Response

3. Discuss with the animal owner and herd/flock veterinarian:

- Human and animal illness
- Persons at higher risk for complications
- Routes of transmission
- Measures to prevent human exposure
- Need to seek medical attention should symptoms develop.

Animal Health Response

4. Alert veterinarians in surrounding areas.

5. In partnership with public health officials, provide outbreak information to media outlets and stakeholders as appropriate.

6. Perform epidemiological analysis to characterize outbreak animal health demographics and to identify risk factors associated with the identification of coxiellosis in animals in a premises.

Recommendations

Availability of a commercially available veterinary vaccine to respond to a Q fever outbreak.

Appendices

- Q Fever Interview Template
- Q Fever Factsheet
- PPE for Animal Owners and Caretakers
- Human Case Definition
- Healthcare Provider and Veterinary Alerts
- Coxiellosis Diagnostics and Interpretation for Veterinarians
- Manure Management and Carcass Disposal Considerations

Thank-you!

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