Notification Timeline:

Exposures to Infected Animals

The Ministry of Agriculture to Ministry of Health[1]: Within 24 hours
Ministry of Health to Local Medical Health Officer: Within 1 business day
Public Health may receive notification of potential exposures from members of the public or health care providers.

Human Cases of Q Fever

From Lab/Practitioner to Public Health: Immediate
From Public Health to Ministry of Health: Routinely, within 24-48 hours. Immediate if bioterrorism is suspected.

Public Health Follow-up Timeline: Initiate within 24-48 hours; if bioterrorism is suspected, initiation must be immediate**.**

Public Health Purpose for Notification of Q Fever

- To monitor incidence and epidemiology of Q Fever in Saskatchewan including risk factors and geographic distribution;
- To inform the public and agricultural occupational groups (e.g. stock growers, veterinarians) about this disease and how to prevent it;
- To work collaboratively with the Ministry of Agriculture and agricultural partners to reduce the risk of Q Fever;
- To identify locations where increased transmission of Q Fever may be occurring in order to inform other interventions;
- To educate at-risk individuals on disease prevention; and
- To identify source and risk for public and prevent transmission and outbreaks.

[1] Via confidential fax or mailbox 306-787-9576 or cdc@health.gov.sk.ca

Information

Table 1. Surveillance Case Definition[2]

Confirmed Case	**ACUTE** (Public Health Ontario, 2023):
	• A clinically compatible signs and symptoms of acute case[a] of Q fever with one of the following;
	  • Isolation of *C. burnetii* from a clinical specimen by culture
	OR
	  • Detection of *Coxiella burnetii* nucleic acid (e.g., PCR, NAAT) in an appropriate clinical specimen (e.g., blood, biopsy tissue, cerebrospinal fluid) Heymann (2022),
	OR
	  • Fourfold or greater rise in antibody titer[b] to *C. burnetii* phase II or phase I antigen in paired serum specimens taken 3-6 weeks apart
	
	CHRONIC (US CDC, 2009)
	• A clinically compatible case of chronic illness[a] (meets clinical evidence criteria for chronic Q fever) that has:
	  • Serological evidence of IgG antibody to *C. burnetii* phase I antigen ≥ 1:800 by IFA (while phase II IgG titer will be elevated as well; phase I titer is higher than the phase II titer),
	OR
	  • Detection of *C. burnetii* DNA in a clinical specimen via amplification of a specific target by PCR assay**,**
	OR
	  • Demonstration of *C. burnetii* antigen in a clinical specimen by immunohistochemical methods (IHC)*,*
	OR
	  • Isolation of *C. burnetii* from a clinical specimen by culture.

Probable Case	**ACUTE** (Public Health Ontario, 2023): • Clinically compatible signs and symptoms of acute infection[a] in a person with epidemiologically link to a laboratory-confirmed source (Ontario Public Health Standards, 2022) OR • An asymptomatic individual with positive serological evidence and with an epidemiologic link to a lab-confirmed source (i.e., human, animal or environment).

[2] Surveillance case definitions ensure uniform reporting to allow comparability of surveillance data. The definition is not intended to be used for clinical or laboratory diagnosis or management of cases. Consultation with a microbiologist or ID Specialist may be required to assist with interpretation and staging.

	OR • Single convalescent serum sample (IgG phase II ≥ 1: 256) from a patient who has been ill > 1 week. **CHRONIC** (US CDC, 2009) • A clinically compatible case of chronic illness[a] that has an antibody titer to *C. burnetii* phase I IgG antigen ≥1:128 and < 1:800 by IFA).
[a] Refer to **Table 2** for clinical illnesses of different presentations [b] A single positive titre alone does not meet criteria to report as a confirmed case. If repeat serology or additional tests have been ordered, the case could be classified as a PUI.	

Table 2. Staging and Associated Clinical Manifestations

Stage	Clinical Manifestations
Acute	• Fever • Chills • Headache • Malaise • Myalgia • Pneumonitis • Hepatitis, acute • Elevated liver enzymes
Chronic	• Cardiac – Endocarditis (culture negative, in a person with risk factors such as a vascular aneurysm or vascular prosthesis) ○ It may present with fever, chills, myalgia, diaphoresis (night sweats), or weight loss. • Other rare clinical syndromes including neurologic signs.

Epidemiology and Occurrence

Q Fever in humans is uncommonly reported in Saskatchewan. There were two confirmed cases reported between 2017 and 2022. One chronic case (acquired outside Canada) and one acute case (exposure during slaughter of a wild animal). There were also lab positive individuals that did not meet the confirmed definition; one involved an occupational exposure to infected lab/animals in SK.

There is currently no information on the prevalence of Q-fever in Saskatchewan's ruminant animals (cattle, sheep, goats). The Saskatchewan Ministry of Agriculture initiated a Q Fever surveillance project in collaboration with Prairie Diagnostic Services in January 2020. Findings from the surveillance project indicate that 338 ruminant abortion cases were submitted for testing between January 1st, 2020 and May 11th, 2023 with a positivity rate of 11%. Surveillance is ongoing.

While Q fever can infect a variety of animal species, the risk of contracting infection from wildlife is very low and most cases of human infections are associated with exposure to infected livestock or domestic species.

Additional Background Information

Causative Agent
Q fever is caused by the bacteria, *Coxiella burnetii* (Heymann, 2022) which is found in excreta of infected animals with highest concentration of bacteria in birth products. The bacterium is a highly infectious agent and is highly resistant to environmental conditions and many disinfectants; as such, the US CDC lists the agent as a Category B bioterrorism agent.

An important characteristic of this pathogen is the presence of a structurally and antigenically distinctive lipopolysaccharide (LPS) molecule on its cell wall. There are two distinct antigenic forms, Phase I and Phase II. Phase I bacteria has a complete LPS molecule and are highly virulent. Phase II is avirulent form of *C. burnetii* having a truncated LPS molecule. This is particularly relevant in interpreting lab results.

Signs and Symptoms
Heymann (2022) notes that clinical presentation varies in severity and duration. Infections may be unapparent or present as fever of unknown origin. Refer to Table 2. Staging and Associated Clinical Manifestations.

A post-Q fever fatigue syndrome has been described (lethargy [fatigue, drowsiness, weakness, etc.] and neurologic involvement) in 20-30% of cases.

The case fatality rate in untreated acute cases is usually less than 1% while Q fever endocarditis is fatal if untreated.

Pregnant women may experience a spontaneous abortion (miscarriage), stillbirth (fetal death), premature delivery or a low birth weight infant.

Reservoir/Source (Heymann, 2022)
The primary reservoir is in sheep, cattle and goats, and to a lesser extent in birds and multiple vertebrate animals such as cats and dogs. Wild animal species can also act as reservoirs for both humans and domestic livestock, and ticks may play a role in natural

transmission amongst wild vertebrates and livestock. However, contact with domestic livestock and airborne transmission remain the most important risk factors for transmission to humans. Animals are typically asymptomatic. The organism is found in excreta of infected animal and in particularly high volumes in the placenta and amniotic fluid of infected animals. Duration, quantity and route of shedding can vary by host species – goats shed in birth products, feces and milk, sheep shed in birth products, vaginal discharge and feces and are less likely to persistently shed the organism in milk than cattle who may shed the organism in milk for weeks or months after calving (National Association of State Public Health Veterinarians, 2013). Abortions may occur among infected ruminants. Tick vectors maintain animal and bird reservoirs but are not important in transmission to humans.

Incubation Period
The incubation period depends on the inoculation dose and is typically 2-3 weeks with a range of 3-30 days (Heymann, 2022).

Period of Communicability
Human-to-human transmission is not usual. However, it has been described following contact with a woman in labor (Hadush, Kandi, & Pal, 2016).

Mode of Transmission (Heymann, 2022)
- Airborne – the major route of transmission is by inhaled dust or aerosols from areas where birth products and excreta of infected animals exist. Aerosolized particles can remain suspended in the air which may result in transmission up to one kilometer from infected environments.
- Direct contact with contaminated materials – wool, straw, clothing occasionally results in transmission.
- Consumption of unpasteurized dairy products from infected milk-producing animals – this is a minor source of transmission.
- Less likely from transfusion of infected blood products, during autopsies or obstetrical procedures of infected women.

Risk Groups (Heymann, 2022)

Acute infections
- Veterinarians, farmers of sheep, goats and cattle, veterinary researchers, animal health laboratory staff, abattoir workers.

Chronic infection following acute infection

- Persons with valvular heart disease or vascular defects, immunocompromised and pregnant women.

Lab Reports and Interpretation

There are two distinct antigenic phases (phase I and phase II) to which humans develop antibody responses. In acute infection, an antibody response to *C. burnetii* phase II antigen is predominant and is higher than antibody levels to phase I antigen; in chronic infection, the reverse is true where there is a rising phase I IgG titer which may be higher than phase II IgG (CDC, 2019).

IgM antibodies usually rise at the same time as IgG, near the end of the first week of illness, and remain elevated for extended periods of months or longer and therefore provide limited diagnostic value on their own. Additionally, IgM antibodies are less specific than IgG antibodies and more likely to result in a false positive. Therefore, IgG titres should be requested at the same time as IgM serologic titers (CDC, 2019).

Mayo Clinic Laboratories[3] provides practical interpretive criteria to help classify the appropriate staging. Consultation with a microbiologist or ID Specialist may be needed to assist with interpretation and staging:

- Phase I antibody titers greater than or equal to phase II antibody titers are consistent with chronic infection or convalescent phase Q fever.
- Phase II antibody titers greater than or equal to phase I antibody titers are consistent with acute/active infection.
- A negative result argues against *Coxiella burnetii* infection. If early acute Q fever infection is suspected, collect a second specimen 2 to 3 weeks later and retest.
- In Q fever sera, it is common to see IgG titers of 1:128 or greater to both phase I and phase II antibody titers. IgG class antibody titers appear very early in the disease, reaching maximum phase II titers by week 8 and persisting at elevated titers for longer than a year. Phase I titers follow the same pattern, although at much lower levels, and may not be initially detected until convalescence.

[3] https://www.mayocliniclabs.com/test-catalog/Overview/83149#Clinical-and-Interpretive

Treatment/Supportive Therapy

The primary care provider is responsible for the treatment and clinical management of cases in consultation with an infectious disease specialist and local Medical Health Officer (MHO). The following serves as a reference for the public health investigator:

- *Acute Q fever is generally self-limited and many patients recover without antimicrobial therapy, however timely administration of antibiotics can reduce the duration and severity of symptoms.*
- *Treatment for acute Q fever is not routinely recommended for asymptomatic persons or for those whose symptoms have resolved, although it might be considered in those at high risk of developing chronic Q fever.*
- *Once Acute Q Fever progresses to Chronic Q fever, the treatment time is prolonged and recurrence of the disease is not uncommon (Ullah, Jamil, Saqib, Iqbal &Neubauer, 2022).*
- *Chronic Q Fever requires combination therapy for 18-24 months (Heymann, 2022).*
- *Pregnant women may require treatment throughout their pregnancy.*

Public Health Investigation

I. Case

History

Classify case in consultation with the attending physician and the case definitions.

Refer to Attachment – Q Fever Data Collection Worksheet to assist in the investigation.

- Investigate for the possible source of exposure – consult with the Ministry of Agriculture to enquire about known sources (in the absence of a direct exposure, consider airborne exposure from contaminated environments), whether other cases may have been exposed to an identified source. Onset dates can help identify exposure timelines.
- Considerations include the following and the associated timelines:
  - Animal exposure – contact with animals known to be infected (sheep, goats, or cattle on farms or in research facilities);
  - Animal exposure – farms
  - Occupational exposure – farmer

  - Occupational exposure – Veterinarian or related worker (e.g. animal health laboratory staff), including adequacy of preventive measures;
  - Recent history of travel within Saskatchewan, outside of Saskatchewan or outside of Canada; and
  - Behaviour – consuming high-risk foods (unpasteurized dairy products)
- Specify where the exposure occurred.
- Assess for risk of Chronic Q Fever:
  - Chronic Medical Condition – Cardiac (i.e. valvular heart defect or vascular disease)
  - Chronic Medical Condition – Immunocompromised

Outcome

- Did the patient require:
  - Hospitalization
  - ICU admission or intensive medical care
  - Was the outcome fatal?

Public Health Interventions

Assessment

- Assess for exposure source – if no source is obvious, the Ministry of Agriculture may be aware of recent Q fever detections among animals or farms;
- Assess for contacts that have had exposure to the same source; obtain contact information of these individuals.
- Assess for risk factors that may make individuals at risk for Chronic Q Fever.
- Assess for pregnancy and refer to primary care provider or obstetrician for appropriate treatment and follow-up.

Education

- All cases should be provided disease information (including risks for chronic Q fever) as well as information on prevention and control measures.
- Women should be advised of the risk to the fetus should they become pregnant during the treatment or monitoring period for acute or chronic Q fever (CDC, 2013) and the potential risk in subsequent pregnancies.
- Patients should be advised to seek medical care immediately should symptoms occur at any time throughout their lives, because those with valvular defects or vascular abnormalities remain at high risk for chronic Q fever for life (US CDC, 2013).

Exclusion

- Individuals should not donate blood, blood products or tissues until completion of treatment and fully recovered, whichever is longer.
- Refer to the Canadian Blood Services screening questionnaire to assess eligibility for donation: Canadian Blood Services Donor questionnaire or call 1 888 2 DONATE (1-888-236-6283) to discuss before arriving.
- Standard Precautions should be used during post mortem examinations and when performing aerosol-generating procedures.

Environmental Health

- When acquisition is linked to an agricultural setting, the Ministry of Agriculture will communicate with the herd veterinarian and/or the owner to ensure human health risks are understood. The herd veterinarian will inform the owner of proper management and disposal of carcasses.

Immunoprophylaxis

- None

Referrals

- Refer to Infectious Disease Specialist to confirm treatment and medical management, particularly for individuals at high risk for chronic Q fever and pregnant individuals.
- When a case of Q Fever is associated with an occupational exposure, Section 9 of *The Disease Control Regulations*[4] stipulates that the medical health officer (MHO) shall notify the director (as defined in *The Occupational Health and Safety Act, 1993*[5]). In order to fulfill this obligation, they must complete and send the form in Appendix L – Notification of Occupational Health and Safety within 14 days.
- If history of donation of blood, blood products or tissues, notify CBS. Refer to Appendix K.

Testing

- Patients with identified risk factors for chronic disease should be serologically monitored and receive a physical examination at intervals of 3, 6, 12, 18 and 24 months of acute Q fever diagnosis (Heymann, 2022)

[4] http://www.qp.gov.sk.ca/documents/english/Regulations/Regulations/p37-1r11.pdf.
[5] http://www.qp.gov.sk.ca/documents/English/Statutes/Statutes/P37-1.pdf.

II. Contacts/Contact Investigation

Contact Definition

There is no specific contact definition, however CDC (2018) indicates that exposures can result when individuals have:

- touched feces, urine, milk or blood from an infected animal without appropriate use of personal protective equipment (PPE);
- Breathed in dust from environments contaminated with Q fever bacteria;
- Touched a newborn animal or birthing products (placenta, amniotic fluid) form an infected animal without appropriate use of PPE; or
- Drinking unpasteurized milk or dairy products from an infected animal.

Public Health Interventions

Assessment

- Assess for exposure and signs and symptoms.

Communication

- Individuals should be notified directly.

Education

- Individuals exposed should be informed of the disease, its characteristics, the nature of the risk, prevention measures and risk factors that are associated with chronic Q fever.

Exclusion

- None

Monitoring

- Contacts should self-monitor for signs and symptoms

Testing

- Contacts that develop signs and symptoms should seek medication attention and testing for Q Fever.

Referrals

- Contacts at high risk of chronic Q fever should be referred to their physician for testing because early detection and treatment of acute Q fever is the best prevention for chronic Q fever (European Center for Disease Control, 2010).

III. Environment

Control Measures to prevent occupational exposures

Q fever spreads easily throughout agricultural regions affecting anyone who works outdoors in contact with infected soil or dust. Airborne particles containing the Q fever microbe may be carried downwind for a considerable distance (up to one kilometer).

Q fever also spreads easily within buildings from room to room. Workers in research facilities can contract Q fever even if they only visit a contaminated room or hallway once or twice.

- Improved screening of animal herds used by research facilities may decrease the risk of infection.
- Restricting access to sheds, barns, and laboratories harbouring potentially infected animals.
- Education of employees in high-risk occupations about the risk for exposure and clinical presentation of Q fever. Educational efforts should describe the groups who are at higher risk of chronic Q fever if infected, including workers who have pre-existing valvulopathy, a prosthetic heart valve, a vascular prosthesis, an aneurysm, are pregnant or might become pregnant, or are immunosuppressed. Workers who start jobs with increased risk of Q fever should be offered blood tests to determine if they have resistance to Q fever.

Avoidance of occupations at risk for Q fever exposure by pregnant women, or persons with underlying medical conditions including valvulopathy and immunologic suppressive disorders known to be risk factors for acquisition of more severe Q fever.

For more information, refer to the Canadian Centre for Occupational Health and Safety Q fever fact sheet.

Primary control measure applied in positive herds is prolonged treatment with tetracycline. Once the animals are treated and recovered, they no longer pose a risk to human health.

IV. Outbreak or Epidemic Measures

Prevention Measures

Animal and human health issues are complex and require a multidisciplinary approach that takes into account ecological, environmental, social and economic factors, a One Health approach. Q fever prevention strategies should utilize a One Health approach to incorporate human, animal, and environmental domains (Rahaman, Milazzo, & Marshall, 2019)

Immunization
Currently there is no vaccine available for animals or humans in Canada and the only commercially available vaccine for humans is in Australia (Heymann, 2022).

Education
Only pasteurized milk and dairy products should be consumed (Heymann, 2022).

Educate individuals who have contact with animals, animal products, and animal waste about:

- the disease, its characteristics, and the nature of the risk;
- washing hands thoroughly with soap and water after contact with animals and their body excretions;
- using proper PPE[6] such as palpation sleeves and gloves when performing ruminant obstetrical procedures;
- the sources of infection and the need for adequate disinfection and disposal of animal products of conception (placenta, birth products, fetal membranes and aborted materials) (AHS, 2021).

Environmental Controls
The environment is an important One Health domain as it allows host-reservoir interactions and propagates disease transmission. Environmental management is a key factor in disease control since soon after *C. burnetti* is shed, it settles in dust, becomes aerosolized and can infect humans. Environmental management has been shown to be a key factor in successful control of outbreaks. In outbreaks in Australia and the

[6] https://www.cdc.gov/niosh/npptl/topics/protectiveclothing/default.html

Netherlands, manure management was incorporated, whereas the Netherlands also implemented human and transport restrictions (Rahaman et al., 2019).

A few prevention strategies outlined by Ullah (2022) include:

- Manure management including covering and composting of manure or treating manure with lime,
- Use of isolated calving pens;
- Disinfection of calving pens;
- Restrictions on free animal movement;
- Proper disposal and burial of aborted materials are important measures to prevent the spread; and,
- Quarantine measures to prevent mixing of infected animals with uninfected animals.

Surveillance

Q fever is a Notifiable Disease in Saskatchewan under *The Animal Health Act*. It is not a nationally reportable disease in animals under the *Health of Animals Act* and *Reportable Diseases Regulations.*

Surveillance programs can help to identify overall risk in the population. Animal serology can identify asymptomatic carriers and can identify species that have previously been infected and which may help in identifying flocks or herds in which *C. burnetii* is endemic. However, because there is no association between antibody response and shedding of the organism, the utility of this approach in identifying true public health risk is limited (Rahaman et al., 2019).

On the other hand, animal infection surveillance (which may manifest with abortions) is an important warning system for public health professionals to activate an alert mechanism as this precedes human outbreaks. Human serology can help to quantify disease burden in the general population. The integration of the two surveillance systems could reduce communication pitfalls, save resources, and provide zoonotic data for national and global coordination.

Revisions

Date	Change
September 2023	New

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Government of Saskatchewan

Q Fever Data Collection Worksheet

PANORAMA

Please complete **all** sections.

Panorama QA complete: ☐ **Yes** ☐ **No**
Initials:

Panorama Client ID: _____
Panorama Investigation ID: _____

A) CLIENT INFORMATION

SUBJECT -> CLIENT DETAILS -> PERSONAL INFORMATION

Last Name:	First Name: and Middle Name:	Alternate Name:
DOB: YYYY / MMM / DD Age: _____	Alt. Contact _____ Alt.Contact phone: _____	ETHNICITY: ☐ Indigenous
Health Card Province: _____ Health Card Number (PHN): _____	Relationship: _____	Gender: ☐ M ☐ F ☐ Unknown ☐ Other
Place of Employment/School: _____	Email Address: _____	Gender Identity: ☐ Transgender Male-to-female ☐ Transgender Female-to-male ☐ Undifferentiated ☐ Other (specify)
Phone #: ☐ Primary Home: ☐ Mobile contact: ☐ Workplace: Preferred Communication Method _____	Address Type: ☐ No fixed ☐ Postal Address ☐ Primary Home ☐ Temporary ☐ Legal Land Description Mailing (Postal address): Street Address or FN Community (Primary Home):	
Panorama Client ID: _____ Panorama Investigation ID: _____		

B) IMMIGRATION INFORMATION

SUBJECT -> CLIENT DETAILS -> PERSONAL INFORMATION->IMMIGRATION INFORMATION

Country Born in: _____

Country Emigrated from: _____ Arrival Date: YYYY / MMM / DD OR Arrival Year_____

C) INVESTIGATION INFORMATION

SUBJECT SUMMARY->CDC ENCOUNTER GROUP->CREATE INVESTIGATION

Disease Summary Classification: CASE:	**Date**	**Classification: CONTACT:**	**Date**	**LAB TEST INFORMATION:**
☐ Confirmed	YYYY / MMM / DD	☐ Contact	YYYY / MMM / DD	Date specimen collected: YYYY / MMM / DD
☐ Does Not Meet Case	YYYY / MMM / DD	☐ Not a Contact	YYYY / MMM / DD	
☐ Person Under Investigation	YYYY / MMM / DD	☐ Person Under Investigation	YYYY / MMM / DD	
☐ Probable	YYYY / MMM / DD			
☐ Suspect	YYYY / MMM / DD			

Disposition:
FOLLOW UP:

☐ In progress	YYYY / MMM / DD	☐ Complete	YYYY / MMM / DD
☐ Incomplete - Declined	YYYY / MMM / DD	☐ Not required	YYYY / MMM / DD
☐ Incomplete – Lost contact	YYYY / MMM / DD	☐ Referred – Out of province (Specify where)	YYYY / MMM / DD
☐ Incomplete – Unable to locate	YYYY / MMM / DD		YYYY / MMM / DD

REPORTING NOTIFICATION Name of Attending Physician or Nurse:	Location:
Provider's Phone number:	Date Received (Public Health): YYYY / MMM / DD

Type of Reporting Source: ☐ Health Care Facility ☐ Lab Report ☐ Nurse Practitioner ☐ Physician ☐ Other_____

D) DISEASE EVENT HISTORY

INVESTIGATION->DISEASE SUMMARY (UPDATE)->DISEASE EVENT HISTORY

Staging: ☐ Acute ☐ Chronic

Q Fever Data Collection Worksheet

Please complete **all** sections.

Panorama Client ID: _____
Panorama Investigation ID: _____

E) SIGNS & SYMPTOMS

INVESTIGATION->SIGNS & SYMPTOMS

Description	No	Yes – Date of onset	Description	No	Yes - Date of onset
Abdominal - cramping		YYYY / MMM / DD	Lethargy (fatigue, drowsiness, weakness, etc)		YYYY / MMM / DD
Abortion – spontaneous (miscarriage)		YYYY / MMM / DD	Malaise		YYYY / MMM / DD
Cardiac - endocarditis		YYYY / MMM / DD	Myalgia (muscle pain)		YYYY / MMM / DD
Chills		YYYY / MMM / DD	Neurologic - ataxia (loss of muscle coordination)		YYYY / MMM / DD
Fetal death – stillbirth		YYYY / MMM / DD	Pain - abdominal		YYYY / MMM / DD
Fever		YYYY / MMM / DD	Pain - chest		YYYY / MMM / DD
Headache		YYYY / MMM / DD	Pneumonitis		YYYY / MMM / DD
Hepatitis		YYYY / MMM / DD			
Other Signs & Symptoms if applicable					

F) RISK FACTORS

INVESTIGATION-> SUBJECT->RISK FACTORS

DESCRIPTION	YES	N – No NA – not asked U - Unknown	DESCRIPTION	YES	N – No NA – not asked U - Unknown
Animal Exposure - Farms (Add'l Info)	YYYY / MMM / DD		**Travel** - Outside of Canada (Add'l Info)	YYYY / MMM / DD	
Animal Exposure – Infected animal (Add'l Info)	YYYY / MMM / DD		**Travel** - Outside of Saskatchewan, but within Canada (Add'l Info)	YYYY / MMM / DD	
Animal Exposure - Other (Add'l Info)	YYYY / MMM / DD		**Travel** - Within Saskatchewan (Add'l Info)	YYYY / MMM / DD	
Animal Exposure - Wild animals (other than rodents) (Add'l Info)	YYYY / MMM / DD		**Special Population** - Pregnancy	YYYY / MMM / DD	
Chronic Medical Condition – Cardiac Disease			**Special Population -** Occupation - Farmer		
Immunocompromised – Related to underlying disease or treatment			**Special Population -** Occupation - Veterinarian or related worker		

G) MEDICATIONS

INVESTIGATION-> MEDICATIONS->MEDICATIONS SUMMARY

Medication ***(Panorama = Other Meds) :*** _____

Prescribed by:_____ Started on: YYYY / MMM / DD

H) TREATMENT

INVESTIGATION-> MEDICATIONS->MEDICATIONS SUMMARY

Medication ***(Panorama = Other Meds) :*** _____

Prescribed by:_____ Started on: YYYY / MMM / DD

I) INTERVENTIONS

INVESTIGATION->TREATMENT & INTERVENTIONS->INTERVENTION SUMMARY

Intervention Type and Sub Type:	
Assessment: ☐ Assessed for contacts YYYY / MM / DD Investigator name	**Environmental health**: ☐ Inspection YYYY / MM / DD Investigator name
Communication: ☐ Other communication (see Investigator Notes) YYYY / MM / DD Investigator name ☐ Letter (See Document Management) YYYY / MM / DD Investigator name	**Referral**: ☐ Saskatchewan Occupational Health and Safety YYYY / MM / DD Investigator name ☐ Canadian Blood Services YYYY / MM / DD Investigator name
Contact Notification: ☐ Contact Notification/education	**Education/counselling:** ☐ Prevention/Control measures YYYY / MM / DD ☐ Disease information provided YYYY / MM / DD Investigator name
General: Investigator name ☐ Disease-Info/Prev-Control YYYY/ MM / DD ☐ Disease-Info/Prev-Cont/Assess'd for Contacts YYYY/ MM / DD	**Other Investigation Findings:** ☐ Investigator Notes YYYY / MM / DD ☐ See Document Management YYYY / MM / DD

Q Fever Data Collection Worksheet

Please complete **all** sections.

Panorama Client ID: _____
Panorama Investigation ID: _____

Date	Intervention subtype	Comments	Next follow-up Date	Initials
YYYY / MM / DD			YYYY / MM / DD	
YYYY / MM / DD			YYYY / MM / DD	
YYYY / MM / DD			YYYY / MM / DD	
YYYY / MM / DD			YYYY / MM / DD	
YYYY / MM / DD			YYYY / MM / DD	
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YYYY / MM / DD			YYYY / MM / DD	
YYYY / MM / DD			YYYY / MM / DD	
YYYY / MM / DD			YYYY / MM / DD	
YYYY / MM / DD			YYYY / MM / DD	
YYYY / MM / DD			YYYY / MM / DD	
YYYY / MM / DD			YYYY / MM / DD	
YYYY / MM / DD			YYYY / MM / DD	

J) EXPOSURES

Acquisition Event LHN-> INVESTIGATION-> EXPOSURE SUMMARY-> ACQUISITION QUICK ENTRY

Acquisition Event ID:_____

Exposure Name: _____

Acquisition Start YYYY / MM / DD to **Acquisition End:** YYYY / MM / DD

Location Name: _____

Setting Type

☐ Travel ☐ Most likely source

K) OUTCOMES (if applicable) INVESTIGATION->OUTCOMES

☐ ICU/intensive medical care: ☐ Hospitalization
☐ Fatal

Cause of Death: (if Fatal was selected) _____

Initial Report completed by:		Date initial report completed: YYYY / MMM / DD