



Tularemia

Investigation Guideline

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Attachments can be accessed through the Adobe Reader’s navigation panel for attachments. Throughout this document attachment links are indicated by this symbol ; when the link is activated in Adobe Reader it will open the attachments navigation panel. The link may not work when using PDF readers other than Standard Adobe Reader.

Revision History:

Date	Replaced	Comments
05/2018	11/2017	Updated Notification Section with requirements of new reporting regulations.
11/2017	08/2015	Updated case definition; updated Notification Section with requirements of with QI measures. Updated web links to working group's consensus recommendation for treatment.
08/2015	07/2012	Added table of contents and included notes on attachments. Updated links to new CDC form with updates Case Investigation Section in reference to new form. Added more details on Laboratory Analysis including investigating laboratory exposures including laboratory exposures linelist. Reformatted Standard Case Investigation section to assist with EpiTrax system data entry.
07/2012	04/2009	Updated format. Added notification section. Updated laboratory analysis section with information on laboratory exposure. Updated fact sheet. Added updated version of CDC Case Report form. (Removed references to KS-EDSS 02/2012)

Tularemia

Disease Management and Investigative Guidelines

CASE DEFINITION (CDC 2017)

Clinical Description for Public Health Surveillance:

An illness characterized by several distinct forms, including the following:

- *Ulceroglandular*: cutaneous ulcer with regional lymphadenopathy
- *Glandular*: regional lymphadenopathy with no ulcer
- *Oculoglandular*: conjunctivitis with preauricular lymphadenopathy
- *Oropharyngeal*: stomatitis or pharyngitis or tonsillitis and cervical lymphadenopathy
- *Pneumonic*: primary pleuropulmonary disease
- *Typhoidal*: febrile illness without early localizing signs and symptoms

Laboratory Criteria for Public Health Surveillance:

Supportive:

- Elevated serum antibody titer(s) to *F. tularensis* antigen (without documented fourfold or greater change) in a patient with no history of tularemia vaccination, **OR**
- Detection of *F. tularensis* in a clinical or autopsy specimen by fluorescent assay, **OR**
- Detection of *F. tularensis* in a clinical or autopsy specimen by a polymerase chain reaction (PCR)

Confirmatory:

- Isolation of *F. tularensis* in a clinical or autopsy specimen, **OR**
- Fourfold or greater change in serum antibody titer to *F. tularensis* antigen between acute and convalescent specimens

Case Classification:

Probable: A clinically-compatible case with supportive laboratory evidence.

Confirmed: A clinically-compatible case with confirmatory laboratory evidence.

Epidemiologic Linkage

Clinical diagnosis is supported by evidence or history of a tick or deerfly bite, exposure to tissues of a mammalian host of *F. tularensis*, including via an animal bite, or exposure to potentially contaminated water.

Criteria to Distinguish a New Case from an Existing Case

Serial or subsequent cases of tularemia experienced by one individual should only be counted if there is an additional epidemiologically compatible exposure and new onset of symptoms. Because the duration of antibodies to *F. tularensis* is not known, mere presence of antibodies without a clinically-compatible illness **AND** an epidemiologically compatible exposure within 12 months of onset may not indicate a new infection, especially among persons who live in endemic areas.

LABORATORY ANALYSIS

Alert laboratory personnel when tularemia (*F. tularensis*) is suspected; the laboratory needs to follow specific biosafety level (BSL) precautions.

- Cultures in which *F. tularensis* is suspected should be examined in a biological safety cabinet using BSL-3 or BSL-2 with BSL-3 precautions.
 - Because this organism may be detected in blood cultures, the same precautions should be used when working up positive blood cultures.
- Manipulation of the cultures and other procedures that might produce aerosols or droplets should also be conducted in a biological safety cabinet.
- Do not use automated or kit-based systems for identification or susceptibility testing.

Services available from Kansas Health and Environmental Laboratories (KHEL):

- ***Important:*** Contact KHEL (785) 296-2600 before sending any specimens.
- Isolates are not required by law to be sent to KHEL.
- KHEL does offer confirmatory testing of suspected *F. tularensis* isolates by standard culture methods and DFA/PCR.
- KHEL can assist with shipping serum samples for [serological testing for tularemia at CDC](#) for difficult or unusual cases, but CDC must agree to any testing prior to submission of serum to KHEL.

Upon verification of *F. tularensis*:

- Any laboratory handling any specimens or isolates must use appropriate forms to report the identification of the select agent and of the final disposition of that agent and specimens, as well as any seizure of the select agents or toxins by federal law enforcement agencies.
- Refer to: www.selectagents.gov/Forms.html

For additional information and/or questions concerning isolate submission, specimen collection/transport and laboratory kits call (785) 296-1620 or refer to online guidance at www.kdheks.gov/labs/lab_ref_guide.htm.

Managing potential laboratory exposures to *Francisella tularensis*

F. tularensis is highly infectious when grown in culture, and laboratory-acquired infections have been documented. The isolation of *F. tularensis* from clinical specimens, **especially if unanticipated**, can generate concern among laboratory workers about possible exposure.

Management options for potentially exposed workers include:

- Fever watch: workers monitor their temperature with instructions to seek immediate treatment for tularemia if they develop a fever (usually defined as a single oral temperature above 101 °F or 38.5 °C).

- or -

- Antimicrobial prophylaxis: Doxycycline (100 mg orally BID X 14 days) is generally recommended for prophylaxis in adults. Ciprofloxacin (500 mg orally BID) is not FDA-approved for prophylaxis of tularemia but has demonstrated efficacy in various studies, and may be an alternative for patients unable to take doxycycline.

There are no set criteria for determining who should be managed by fever watch and who would benefit from immediate prophylaxis, but factors to consider when making this decision include:

- 1) Nature of the exposure — Workers who report sniffing a culture plate or conducting procedures that generate aerosols are probably at greater risk than those who simply worked with the organism on the bench.
- 2) Incubation period — Incubation period for tularemia is 3-5 days (range 1-14 days). Much of this period may have passed by the time of identification, in which case, the remaining risk of infection is low.
- 3) Level of concern — Varies; laboratory workers may be very anxious regarding the risk of infection or may be more concerned about taking medications unnecessarily.

All potential laboratory contacts are managed using the [Lab Exposure Line List](#) .

For postexposure treatment recommendations: consult the CDC Resources:

- [Treatment \(from Abstract of "Consensus Statement: Tularemia as a Biological Weapon: Medical and Public Health Management"\)](#)
Or see also the [full version of the "Treatment" section of the "Consensus Statement"](#) (JAMA 2001; 285(21):2763-73).

EPIDEMIOLOGY

Tularemia occurs in North America, Europe, the former Soviet Union, China and Japan. In the United States, it occurs year round; incidence may be higher in adults in early winter due to contact with rabbits during hunting seasons. In children, it is more common during the summer when ticks and flies are abundant. Accidental transmission in laboratory settings has occurred.

DISEASE OVERVIEW

A. Agent:

F. tularensis is a gram-negative bacterium. Type A and B in the United States.

B. Clinical Description:

Symptoms could include sudden fever, chills, headaches, diarrhea, muscle aches, joint pain, dry cough, and progressive weakness. Pneumonia, chest pain, bloody sputum and trouble breathing may develop. Without treatment, infection could progress to respiratory failure, shock, and death. The symptoms are dependent upon the site and/or route of transmissions, symptoms include:

- Ulceroglandular: focal ulcer at the site of entry of the bacteria, regional lymphadenopathy, fever, prostration, myalgia, and headache.
- Oropharyngeal: ingestion of organisms in food or water may result in a painful pharyngitis and/or gastrointestinal disease.
- Pleuropulmonary: inhalation may be followed by pneumonia accompanied by pleurisy, which has a high fatality rate.
- Typhoidal: septicemia causes a typhoid fever-like illness with a 30-60% fatality rate.

C. Reservoirs:

Type A infections may be acquired from rabbits or ticks. Type B infections are often associated with other hosts including: hares and rodents. Domestic mammals may also be a reservoir. Ticks, mosquitoes and flies may also play a role in the transmission of disease.

D. Mode(s) of Transmission:

Through the bite of certain arthropods; by inoculation of skin, conjunctival sac or oropharyngeal mucosa with contaminated water, blood or tissue while handling carcasses of infected animals; by handling or ingesting insufficiently cooked meat of infected animals hosts; by drinking contaminated water; by inhalation of dust from contaminated soil, grain or hay; rarely, from bites of coyote, squirrel, skunk, hog, cat and dog whose mouth presumably was contaminated from eating an infected animal; and from contaminated pelts and paws of animals. Laboratory infections occur and frequently present as a primary pneumonia or typhoidal tularemia.

E. Incubation Period:

Range 1-14 days; average 3-5 days.

F. Period of Communicability:

Tularemia is not directly transmitted from person-to-person. However, the drainage from tularemia lesions is potentially infectious. Flies can remain infective for 14 days and ticks throughout their lifetime.

G. Susceptibility and Resistance:

All ages are susceptible and long-term immunity follows infections; however re-infection has been reported.

H. Treatment:

Antibiotics used to treat tularemia include streptomycin, gentamicin, doxycycline, and ciprofloxacin. Treatment usually lasts 10 to 21 days depending on the stage of illness and the medication used.

NOTIFICATION TO PUBLIC HEALTH AUTHORITIES

Suspected cases of tularemia, including laboratory exposures, shall be reported within 24 hours, except if the reporting period ends on a weekend or state-approved holiday, the report shall be made by 5:00 p.m. on the next business day after the 24-hour period:

1. Health care providers and hospitals: report to the local public health jurisdiction or KDHE-BEPHI (see below)
2. Local public health jurisdiction: report to KDHE-BEPHI (see below)
3. Laboratories: report to KDHE-BEPHI (see below)
4. KDHE-BEPHI will contact the local public health jurisdiction by phone within one hour of receiving any suspected tularemia report.

**Kansas Department of Health and Environment (KDHE)
Bureau of Epidemiology and Public Health Informatics (BEPHI)
Phone: 1-877-427-7317 Fax: 1-877-427-7318**

OUTBREAKS, UNUSUAL OCCURRENCE of tularemia, and SUSPECT INTENTIONAL RELEASES should be reported WITHIN 4 HOURS by telephone to 1-877-427-7317.

Further responsibilities of state and local health departments to the CDC:

As a nationally notifiable condition, intentional tularemia cases require an IMMEDIATE, EXTREMELY URGENT or naturally occurring cases require a STANDARD report to the Center of Disease Control and Prevention (CDC):

1. Tularemia cases associated to a suspected intentional release require **IMMEDIATE, EXTREMELY URGENT** reporting prior to final classification.
 - KDHE epidemiologist must call the CDC EOC at 770-488-7100 within 4 hours of a being notified of the case.
 - KDHE-BEPHI will notify the **Local public health jurisdiction** immediately to coordinate on follow-up for the report information needed to complete the electronic form before the next business day.
 - KDHE-BEPHI will file an electronic case report the next business day.
2. Tularemia cases that are naturally-occurring or occupational require STANDARD reporting.
 - KDHE-BEPHI files an electronic report for cases within the next reporting cycle. (KDHE files electronic reports weekly with CDC.)
 - Local public health jurisdiction will report information as requested in the EpiTrax, as soon as possible, completing within 3 days of notification.

INVESTIGATOR RESPONSIBILITIES

- 1) [Report](#) all confirmed, probable and suspect cases to the KDHE-BEPHI.
- 2) Contact medical provider to collect additional information and confirm diagnosis using current [case definition](#).
 - Collect all information requested in [Step 1](#)) of case investigation.
 - [Tularemia CDC Case Reporting Form](#) can help with data collection.
 - Establish whether symptoms and localized signs are present.
 - Ensure that case/proxy is aware of the diagnosis.
- 3) Continue a [case investigation](#) to identify potential source of infection.
 - Initiate the case investigation within 1 day of notification of a case.
 - Review the EpiTrax [[Investigation-Exposure](#)] tab or the Epidemiologic Investigation section of the [CDC Case Reporting Form](#) prior to interviews.
 - Complete the investigation within 3 days of the notification.
- 4) Conduct [contact investigation](#) to identify additional cases.
 - For culture positive cases, laboratories handling isolates must be investigated for potential exposures. ([Lab Exposure Line List](#) )
- 5) Identify whether the source of infection is major public health concern.
 - *Source is unknown, or bioterrorism or mass exposure is indicated?*
- 6) Initiate [control and prevention](#) measures to prevent spread of disease.
 - Conduct [Case](#) or [Contact Management](#) as needed.
- 7) [Record](#) data, collected during the investigation, in the KS EpiTrax system under the data's associated [[tab](#)] in the case morbidity report (CMR).
- 8) As appropriate, use the disease [fact sheet](#)  for notification and education.

* Please note the red [[tab](#)] names listed in this investigation guideline are notations on the location in EpiTrax where the collected data should be recorded.

STANDARD CASE INVESTIGATION AND CONTROL METHODS

Case Investigation

- 1) Contact the medical provider who ordered testing of the case and obtain the following information. (This includes medical records for hospitalized patients.)
 - Initial symptom onset date (approximate if exact date is unknown) [Clinical]
 - Diagnosis date [Clinical]
 - Date first seen by medical provider (specify provider/facility) [Clinical]
 - Hospitalizations: location and duration of stay [Clinical]
 - Symptoms, including fever/sweats/chills, confusion/delirium, vomiting/diarrhea/abdominal pain, sore throat, cough, chest pain, shortness of breath, or others [Investigation – Symptoms].
 - Localized signs: lymphadenopathy, skin lesions, conjunctivitis, pharyngitis/tonsillitis, infiltrates/nodules or pleural effusion on chest x-ray [Investigation – Symptoms]
 - Treatment: antibiotics received and start date [Clinical]
 - Primary clinical syndrome with initial diagnosis date [Investigation – Symptoms]
 - Complications and patient underlying medical conditions [Investigation – Complications]
 - Pregnancy [Clinical]
 - Illness outcomes: Recovered or date of death [Clinical]
 - Examine the laboratory testing that was reported. [Laboratory]
 - If needed, obtain copies of laboratory reports and/or medical records needed to confirm the case and attach copies to the EpiTrax record. [Add Attachment]
 - Collect case's demographics and contacting information (address, birth date, gender, race/ethnicity, primary language, and phone number(s)) [Demographic]
- 2) Interview the case or proxy to determine source and risk factors; focus on incubation period 2 weeks prior to illness onset.
 - Travel history 2 weeks prior to onset. [Investigation – Exposure]
 - Travel out of county or Kansas; list city/county/state and dates visited
 - Travel out of United States; list city/country and dates visited
 - Occupation; specific job duties, industry type and location. [Epidemiologic]
 - At risk occupations include outdoor occupations, landscaping or mowing, hunting and contact with animals or laboratory worker.
 - Animal Contact; specify type of animal and nature of contact [Investigation – Exposure]
 - Tick or deerfly bite or other biting insect [Investigation – Exposure]
 - Contact or ingestion of untreated water [Investigation – Exposure]
 - Consumption of hunted game meat [Investigation – Exposure]
 - Environmental aerosol-generating activities (examples: brush-cutting, mowing, high pressure spraying) [Investigation – Exposure]
 - Laboratory exposure [Investigation – Exposure]
 - Exposure to any other tularemia cases [Investigation – Exposure]
- 3) Examining the epidemiological information, record where the infection was most likely imported from. (Indigenous or out-of-county, out-of-state, or out-of-U.S.) [Epidemiologic]

- 4) Collect information from case for the [Contact Investigation](#). (See below).
- 5) Investigate epi-links among cases (clusters, household, co-workers, etc).
 - For suspected [outbreaks](#) to [Managing Special Situations](#) section.
- 6) For unusual presentation (no known risk factors; clusters of illness), start to consider [intentional contamination or bioterrorism situations](#).

Contact Investigation

- 1) Any person in contact with the source of infection or laboratory isolates is defined as a contact. This may include physical contact with an infected animal or a contaminated product, ingestion of contaminated food or water, or potential inhalation infected aerosols.
- 2) Examine all potential exposures based on the possible source and potential modes of transmission to define who may be at-risk.
- 3) All laboratories that handled the *F. tularensis* isolates are investigated to identify possible contacts. Classify based on exposure risk:
 - Investigate the clinical laboratory determine if procedures were in place to minimize the risk of transmission.
 - High-risk exposure: Performing a specifically implicated practice such as sniffing bacteriological cultures, manipulating cultures while on an open bench, or mouth pipetting; being within 5 feet of work with cultures on an open bench, or being present in the lab during an aerosol-generating event.
 - Low-risk exposure: In lab at the time of manipulation on an open bench but no other high-risk exposures.
 - Refer to [Laboratory Analysis – Management of Laboratory Exposures](#) for a further description of fever watch and or use of antimicrobials.
- 4) Identify those who participated in at-risk activities and contact them to identify if they are experiencing any symptoms. Refer to [Contact Management](#).
- 5) For laboratory exposures, a contact listing is always created to assess risk and monitor contacts. The [Lab Exposure Line List](#)  document is attached to this document or contact KDHE-BEPHI.
- 6) For non-laboratory exposures, if a risk of transmission exists a listing of contacts at-risk of developing disease is entered into EpiTrax. **[Contact]**
 - Enter high risk contact on the **[Contact]** tab, indicate the disposition of contact (treatment, testing, or infection status), and contact type.
 - After the CMR is saved and updated successfully, click **'Edit'** beside the contact on the listing to enter any further details on the contact.

Isolation, Work and Daycare Restrictions

- 1) Isolation: Not recommended. Contact precautions should be taken for open lesions and universal precautions during patient care.
- 2) Concurrent disinfection of discharges from ulcers, lymph nodes or conjunctival sacs.
- 3) No restrictions are indicated for outpatient management.

Case Management

Report on any changes in patient status (i.e., discharge, death). **[Clinical]**

Contact Management

- 1) Symptomatic contacts (as determined by risk of exposure to source) should be strongly urged to contact their physician for a medical evaluation and are followed-up as suspect cases. Ensure that the physician is aware of possible exposure, in order to facilitate proper diagnosis and therapy.
 - To upgrade the symptomatic contact to a case: click 'Show' beside the contact on the listing. With the **View Contact** open in show mode, select 'Promote to CMR'; update, as needed.
- 2) Contact Monitoring:
 - Asymptomatic persons who were potentially exposed should continue to monitor themselves for any fever illness throughout a 14-day period following exposure.
 - Contacts developing fever or flu-like illness within 14 days of presumed exposure should be referred to their medical provider for evaluation.
- 3) Antimicrobial prophylaxis is usually not recommended, except in certain situations in the laboratory and/or where there is aerosolized exposure to significant quantities of agent.
 - Refer to [Laboratory Analysis – Management of Laboratory Exposures](#) and/or [Intentional Contamination – Postexposure Prophylaxis](#).
- 4) The [Lab Exposure Line List](#)  (if need) should be completed and attached to the case record. [\[Add Attachment\]](#)

Environmental Measures

- 1) Laboratory personnel should be alerted when tularemia is suspected.
 - Cultures in which *F. tularensis* is suspected should be examined in a biological safety cabinet using BSL-3 or BSL-2 with BSL-3 precautions.
 - Because this organism may be detected in blood cultures, the same precautions should be used when working up positive blood cultures.
 - Manipulation of the cultures and other procedures that might produce aerosols or droplets should also be conducted in a biological safety cabinet.
 - Do not use automated or kit-based systems for identification or susceptibility testing.
- 2) Bodies of patients who die of tularemia should be handled using standard precautions, but autopsy procedures likely to produce aerosols or droplets should be avoided.
- 3) Clothing or linens contaminated with body fluids of patients with tularemia should be disinfected per standard hospital procedure.
- 4) *Francisella tularensis* can remain alive for weeks in a cold, moist environment including water and soil.

Education

- 1) Use [fact sheet](#)  to educate individuals and groups.
- 2) As opportunities allow, the following general messages should be distributed:
 - Don't mow over sick or dead animals.
 - Use dust masks when mowing to reduce the risk of inhaling bacteria.
 - Use insect repellent containing containing 20% to 30% DEET (N,N-diethyl-meta-toluamide), picaridin or IR3535.

- Wear long pants, long sleeves, and long socks.
- Remove attached ticks promptly with fine-tipped tweezers.
- Wash your hands often, using soap and warm water, especially after handling animal carcasses.
- Hunters should be instructed to wear gloves when skinning wild game and to keep their hands/gloves away from their eyes. They should thoroughly wash their hands after handling wild game carcasses.
- Wild game meat should be cooked to at least 150° F (65°C).
- Drink only treated water when camping and/or hiking.
- Note any change in the behavior of your pets (especially rodents, rabbits, and hares) or livestock, and consult a veterinarian, as needed.

MANAGING SPECIAL SITUATIONS

A. Outbreak Investigation:

- Outbreak definition: No formal outbreak definitions; however, the investigator may consider the possibility of an outbreak when there is an unusual clustering of cases in time and/or space.
- Notify KDHE immediately, 1-877-427-7317.
- Active case finding will be an important part of any investigation.

B. Intentional Contamination

If the case has no remarkable risks, consider intentional events. A weapon using airborne tularemia would likely result 3 to 5 days later in an outbreak of acute, undifferentiated febrile illness with incipient pneumonia, pleuritis, and hilar lymphadenopathy. Specific epidemiological, clinical, or microbiological findings that suggest the possibility of an intentional release of tularemia should result in the immediate issue of a health alert.

If suspected:

- Notify local law enforcement and state public health officials.
- Implement “Chain of Custody” procedures for all samples collected, as they will be considered evidence in a criminal investigation.
- Work to define population at risk which is essential to guide response activities. The definition may have to be re-evaluated and redefined at various steps in the investigation and response.
- Once the mechanism and scope of delivery has been defined, identify symptomatic and asymptomatic individuals among the exposed and recommend treatment and/or chemoprophylaxis.
- Establish and maintain a detailed line listing of all cases and contacts with accurate identifying and locating information.

Safety Considerations:

- Risks to response personnel are not significant.

Diagnosis:

- Physicians who suspect inhalational tularemia should promptly collect specimens of respiratory secretions and blood and alert the laboratory to the need for special diagnostic and safety procedures.

- *F. tularensis* may be identified through direct examination of secretions, exudates, or biopsy specimens using Gram stain, direct fluorescent antibody, or immunohistochemical stains.
- Rapid testing is not widely available. Fluorescent-labeled antibodies are used only in designated reference laboratories in the National Public Health Laboratory Network; test results can be available within several hours of receiving the specimens, if the laboratory is alerted and prepared.
- Growth of *F. tularensis* in culture is the definitive means of confirming the diagnosis of tularemia. It can be grown from pharyngeal washings, sputum specimens, and even fasting gastric aspirates in patients with inhalational tularemia. It is only occasionally isolated from blood.

Vaccination:

- In the United States, a live attenuated vaccine derived from avirulent *F. tularensis* biovar *palaeartica* (type B) is currently under review by the Food and Drug Administration.

Treatment:

- In a mass casualty setting, doxycycline and ciprofloxacin, administered orally, are used for treatment of both adults and children. (See table from the [Working Group Consensus Recommendations](#))
- Drug-resistant organisms might be used as a weapon, conduct antimicrobial susceptibility testing quickly and alter treatments as needed.
- Antibiotics for treating patients infected with tularemia in a bioterrorist event are included in the national pharmaceutical stockpile maintained by CDC, as are ventilators and other emergency equipment.

Postexposure prophylaxis (PEP):

- If an attack is discovered before individuals become ill, exposed persons should receive PEP of oral doxycycline or ciprofloxacin for 14 days.
- If an attack is discovered only after individuals become ill, persons not ill but who were potentially exposed should begin a fever watch. Those who develop an otherwise unexplained fever or flu-like illness within 14 days of presumed exposure should begin treatment as outlined above.
- PEP of close contacts of tularemia patients is not recommended because person-to-person transmission is not known to occur.
- Consult: [Treatment \(from Abstract of "Consensus Statement: Tularemia as a Biological Weapon: Medical and Public Health Management"\)](#)
Or see also the [full version of the "Treatment" section of the "Consensus Statement"](#) (JAMA 2001; 285(21):2763-73).

Environmental decontamination:

- Information is not available about survivability of an intentionally released aerosol form of *F. tularensis*, but a short half-life is predicted due to desiccation, solar radiation, oxidation, and other environmental factors. There is considered a very limited risk from secondary dispersal.
- Following an urban release, the risk to humans of acquiring tularemia from infected animals or arthropods is likely small and can be reduced by educating the public to avoid sick or dead animals and to take precautions to protect against biting arthropods.

DATA MANAGEMENT AND REPORTING TO THE KDHE

- A. Accept the case assigned to the LHD and record the date the LHD investigation was started on the [\[Administrative\]](#) tab.
- B. Organize and collect data, using appropriate data collection tools including:
- [Tularemia CDC Case Reporting Form](#) (A paper-based form that allows the collection of all required information without being logged into EpiTrax.)
 - Alternatively, investigators can collect and enter all required information directly into EpiTrax [\[Investigation\]](#), [\[Clinical\]](#), [\[Demographics\]](#), [\[Epidemiological\]](#) tabs.
 - During laboratory exposure investigation, use the [Lab Exposure Line List](#) .
 - During outbreak investigations, refer to guidance from a KDHE epidemiologist for appropriate collection tools.
- C. Report data collected during the course of the investigation via EpiTrax.
- Verify that all data requested has been recorded on an appropriate EpiTrax [\[tab\]](#), or that actions are completed for lost to follow-up as outlined below.
 - Some data that cannot be reported on an EpiTrax [\[tab\]](#) may need to be recorded in [\[Notes\]](#) or scanned and attached to the record.
 - The [Lab Exposure Line List](#)  should be attached to the record.
 - Paper report forms do not need to be sent to KDHE after the information is recorded and/or attached in EpiTrax. The forms should be handled as directed by local administrative practices.
- D. If a case is lost to follow-up, after the appropriate attempts to contact the case have been made:
- Indicate 'lost to follow-up' on the [\[Administrative\]](#) tab with the number of attempts to contact the case recorded.
 - Record at least the information that was collected from the initial reporter.
 - Record a reason for 'lost to follow-up' in [\[Notes\]](#).
- E. After the requirements listed under [Case Investigation](#) have been completed, record the "Date LHD investigation completed" field located on the [\[Administrative\]](#) tab.
- Record the date even if the local investigator's [Case](#) or [Contact Management](#) for the contact is not "Complete".
- F. Once the entire investigation is completed, the LHD investigator will click the "Complete" button on the [\[Administrative\]](#) tab. This will trigger an alert to the LHD Administrator so they can review the case before sending to the state.
- The LHD Administrator will then "Approve" or "Reject" the CMR.
 - Once a case is "Approved" by the LHD Administrator, BEPHI staff will review and close the case after ensuring it is complete and that the case is assigned to the correct event, based on the reported symptoms reported.

(Review the [EpiTrax User Guide, Case Routing](#) for further guidance.)

ADDITIONAL INFORMATION / REFERENCES

- A. Treatment / Differential Diagnosis:** Red Book: 2015 Report of the Committee on Infectious Diseases. 30th ed. Elk Grove Village, IL: American Academy of Pediatrics; 2015:839-841.
- B. Epidemiology, Investigation and Control:** Heymann. D., ed., Control of Communicable Diseases Manual, 20th Edition. Washington, DC, American Public Health Association, 2015.
- C. Case Definitions:** CDC Division of Public Health Surveillance and Informatics, Available at: wwwn.cdc.gov/nndss/
- D. Chain of Custody:** KDHE Chain of Custody Standard Operating Guide, www.kdheks.gov/cphp/operating_guides.htm#coc
- E. Abstract of "Consensus Statement: Tularemia as a Biological Weapon: Medical and Public Health Management",** including the following extracted table. Access online at: <https://emergency.cdc.gov/agent/tularemia/tularemia-biological-weapon-abstract.asp>
- F. Tickborne Diseases of the United States: A Reference Manual for Health Care Providers:** www.cdc.gov/lyme/resources/TickborneDiseases.pdf
- G. CDC Tularemia Case Investigation Report.** Access online at: www.cdc.gov/ncidod/dvbid/resources/TularemiaCaseReportForm.pdf
- H. Additional Information (CDC):**
- www.cdc.gov/tularemia/index.html
 - <https://emergency.cdc.gov/agent/tularemia/faq.asp>

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2. Double click on the document to open.