

# Salmonellosis (Non-Typhoid) Investigation Guideline

**CONTENT:**

**VERSION DATE:**

**Investigation Protocol:**

- **Investigation Guideline** **06/2012**

**Attachments:**

- **Fact Sheet** **05/2012**
- **Sample Letter, Enteric to Case** **05/2012**

**Revision History:**

<b>Date</b>	<b>Replaced</b>	<b>Comments</b>
06/2012	02/2012	Updated investigation sections to agree with new surveillance system, added reporting form, and updated fact sheet.
02/2012	05/2011	Removed references to KS-EDSS. Updated CDC case definition to 2012 version.
05/2011	03/2009	Minor formatting and editing of investigation guideline. Incorporated disease-specific agent recommendations from Enteric Outbreak in Daycares Manual. Updated Laboratory Analysis and Management of Special Situations. BEPHI replaced BSE throughout.

# Salmonellosis (Non-Typhoid)

## Disease Management and Investigation Guidelines

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### CASE DEFINITION (CDC 2012)

#### Clinical Description for Public Health Surveillance:

- An illness of variable severity commonly manifested by diarrhea, abdominal pain, nausea, and sometimes vomiting. Asymptomatic infections may occur, and the organism may cause extraintestinal infections.

#### Laboratory Criteria for Case Classification:

- **Confirmed:** Isolation of *Salmonella* from a clinical specimen\*.
- **Suspect:** Detection of *Salmonella* from a clinical specimen using a non-culture based method.

#### Case Classification:

- **Confirmed:** A case that meets the confirmed laboratory criteria for diagnosis. When available, O and H antigen serotype characterization should be reported.
- **Probable:** A clinically compatible case that is epidemiologically linked to a confirmed case, i.e., a contact of a confirmed case or member of a risk group as defined by public health authorities during an outbreak.
- **Suspect:** A case that meets the suspect laboratory criteria for diagnosis.

**Note:** *Both asymptomatic infections and infections at sites other than the gastrointestinal tract, if laboratory confirmed, are considered confirmed cases that should be reported.*

### LABORATORY ANALYSIS

Culture and isolation is used for confirmation of cases and outbreaks:

- Specimen type: Feces; marble size amount in Cary-Blair
- Collection materials: Use enteric kit (bottle with Cary-Blair medium (0.16%))
- Timing of collection: Shedding of organism may be intermittent; the collection of specimens over several days may increase chances of isolation.

Submission of *Salmonella* isolates to the Kansas Health and Environmental Laboratories (KHEL) is required by law.

- Shipment of isolates: Use infectious disease mailers available through KHEL.

For additional information concerning collection or transport:

- Call (785) 296-1620 or refer to [www.kdheks.gov/labs/lab\\_ref\\_guide.htm](http://www.kdheks.gov/labs/lab_ref_guide.htm)

### EPIDEMIOLOGY

Salmonellosis has a worldwide distribution. In the United States, an estimated 5 million cases occur annually. Between 60-80% of these cases are sporadic but large outbreaks have occurred in institutional settings and nationwide from common food sources.

### DISEASE OVERVIEW

#### A. Agent:

A gram-negative bacillus with 4 distinct species causes *Salmonella*; more than 2,000 serotypes have been identified.

**B. Clinical Description:**

Acute gastroenteritis with sudden onset of headache, fever, abdominal pain, diarrhea, nausea and sometimes vomiting. Severe dehydration, bloody diarrhea and invasive disease may develop. Invasive infection can occur as urinary tract infection, septicemia, abscess, arthritis, cholecystitis, endocarditis, pericarditis, meningitis, or pneumonia. Asymptomatic infections also occur.

**C. Reservoirs:**

Domestic and wild animals, including: livestock, pets, poultry and other birds, reptiles and amphibians. Humans may also be a source of infection.

**D. Mode(s) of Transmission:**

Fecal-oral route transmission. The most common mode is ingestion of food or water contaminated with human or animal feces or food derived from infected animals. Handling raw meat or poultry products, or contact with infected reptiles, can also result in transmission.

**E. Incubation Period:**

Range 6 to 72 hours; usually within 12-36 hours after initial exposure. Prolonged incubation periods may be noted with low-dose ingestion.

**F. Period of Communicability:**

Extremely variable, usually several days to several weeks dependent upon the course of infection. A carrier state can continue for over 1 year in 1% of adults and 5% of children under 5 years of age, especially infants. Prolonged, asymptomatic fecal shedding can promote person-to-person transmission.

**G. Susceptibility and Resistance:**

Susceptibility is general and is usually increased due to achlorhydria, antacid or broad-spectrum antibiotic use, GI surgery, neoplastic disease, immunosuppressive therapy, or other debilitating conditions including malnutrition. It is possible to become re-infected by other serotypes.

**H. Treatment:**

Antibiotic treatment does not shorten the course of the disease and may prolong carriage and encourage the appearance of resistant strains. Reserve treatment for those with continued high fevers or invasive disease, infants < 2 months, the elderly, debilitated, and those with HIV or sickle cell disease. If treatment is indicated, antibiotic sensitivities should be examined first.

**NOTIFICATION TO PUBLIC HEALTH AUTHORITIES**

Salmonellosis (nontyphoidal) shall be designated as infectious or contagious in their nature, and cases or suspect cases shall be reported within seven days:

1. Health care providers and hospitals: report to the local public health jurisdiction
2. Local public health jurisdiction: report to KDHE-BEPHI (see below)
3. Laboratories: report to KDHE-BEPHI (see below)

**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**

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

*As a nationally notifiable condition, shigellosis cases require a STANDARD report to the Center of Disease Control and Prevention (CDC).*

1. STANDARD reporting requires KDHE-BEPHI to file an electronic report for cases within the next reporting cycle.
  - KDHE-BEPHI will file electronic reports weekly with CDC.
2. **Local public health jurisdiction** will report information requested in the Kansas electronic surveillance system, as soon as possible, ensuring that the electronic form is completed within 7 days of receiving a notification of a report.

### **INVESTIGATOR RESPONSIBILITIES**

- 1) **Report** all confirmed, probable and suspect cases to the KDHE-BEPHI.
  - Isolation of *Salmonella* from any site (including urine) meets the case definition and should be investigated.
- 2) Use current **case definition**, to confirm diagnosis with the medical provider.
- 3) Conduct **case investigation** to identify potential source of infection.
- 4) Conduct **contact investigation** to locate additional cases and/or contacts.
- 5) Identify whether the source of infection is major public health concern,
  - If *Salmonella* was isolated from clinical specimen, ensure bacterial isolate is sent to KHEL.
  - Foodhandler, daycare association, or a direct patient care provider.
  - Commercial raw milk, a water supply, or other public source is involved.
- 6) Initiate control and prevention measures to prevent spread of disease.
- 7) Complete and report information requested in the state electronic surveillance system.
- 8) As appropriate, use the notification letter(s) and the disease **fact sheet** to notify the case, contacts, and other individuals or groups.

### **STANDARD CASE INVESTIGATION AND CONTROL METHODS**

#### **Case Investigation**

- 1) Contact the medical provider who ordered testing of the case or is attending to the case and obtain the following information. (This includes medical records for hospitalized patients.)
  - Obtain clinical information on symptoms, onset date and time and, if available recovery date and time.
  - Examine laboratory testing, specifically culture results.
    - Suspect cases are still investigated.
    - If *Salmonella* was isolated from the clinical specimen, ensure bacterial isolate was sent to KHEL.
  - Determine if further laboratory testing is needed.
    - If the suspect case is part of a trend, it may be necessary to have the stool specimen forwarded to state laboratory for isolation procedures.
  - Collect case's demographic data and contacting information (birth date, county, sex, race/ethnicity, address, and phone number(s)).
  - Record hospitalizations: location and duration of stay.
  - Record outcomes: survived or date of death.

- 2) Interview the case to determine source, risk factors and transmission settings:
  - At least 3 phone attempts at different times of day should be made before the [Enteric Letter to Case](#) is used or the case is closed as lost to follow-up.
  - For the **7 days** prior to symptom onset, examine the following:
    - Exposure to others with diarrhea in or outside the household
      - Obtain date(s) of exposure, relationship to case and occupation of possible source
      - Note transmission setting, if applicable (i.e., household, daycare)
    - Food history (including place of purchase)
      - Examine risks such as poorly cooked meat, poultry or eggs, unpasteurized dairy products, vegetables, fruits or sprouts
      - Consider food-handling practices and opportunities for cross-contamination
    - Restaurant or group gathering history
      - Obtain name, location of restaurant/gathering, food eaten and exposure date(s)
    - Contact with animals
      - Specify type and location (e.g. farm, petting zoo, school)
    - In-state and out-of-state travel
      - Obtain dates and location(s)
      - Include hiking, camping or hunting trips
    - Drinking water sources: personal-sized containers, water coolers, and/or multi-user tanks.
    - Association with childcare, residential facility or any institution.
      - Obtain dates and locations
    - Underlying medical conditions, special diets or allergies, GI procedures, medicines (include over-the-counter, “organic/holistic” or vitamins/herbs.)
  - For infants  $\leq 3$  months of age, if a source is not identified, consider:
    - Collecting detailed epidemiologic data and performing stool cultures on caretaker(s), even if asymptomatic.
    - Carefully review food-handling practices to determine whether cross-contamination of infant formula or food may be involved.
  - Collect information from case for the [Contact Investigation](#). (See below)
- 3) Investigate epi-links among cases (clusters, household, co-workers, etc).
  - If the case had contact with person(s) who have/had the disease or if there was a possible point source of infection, determine if the other “cases” have been reported to the State:
    - Use names and birthdates of possible cases to search the state electronic surveillance system.
  - If found, record the previously reported case’s record number.
  - Highly suspected cases: investigate and report if not previously reported.
  - For suspected [outbreaks](#) refer to Managing Special Situations section.

## Contact Investigation

Consider the following types of contacts during a contact investigation:

- General contacts: Household and intimate/sexual contacts of case or those who ate food prepared by the case.
  - Daycare contacts: (Risk of transmission increases with younger children who exhibit lack of fecal continence and frequent hand-to-mouth activity.)
    - All direct caretakers and classmate attendees of a case in a child-care center with children who are all over two years of age, or who are all toilet-trained.
    - All employees and attendees of a childcare center housing non-toilet-trained children, if one employee or enrollee is infected or if household contacts of two separate enrollees are infected.
    - All employees, attendees and household contacts of diapered attendees of a daycare in which outbreak recognition is delayed by  $\geq 3$  weeks.
    - Individuals who work the same shift in a daycare kitchen with an infectious food handler are also considered contacts.
    - Daycare attendees and employees who eat food prepared by an infected food handler, especially if the food handler handled ready-to-eat foods with bare hands or worked while experiencing diarrhea.
  - School Contacts: **Only** with epidemiologic evidence of transmission in a school setting consider those who share similar exposure activities with the cases (e.g. common food/drink, animal or recreational water sources).
  - Food Service Contacts: Patrons of the establishment of an infected food handler if (1) the food handler worked while infectious, (2) had poor personal hygiene, and (3) had the opportunity to have bare-hand contact with ready-to-eat food.
  - Direct patient care provider contact: Patients of an infected care provider if there is evidence that the provider was (1) symptomatic with poor personal hygiene and (2) had an opportunity for bare-hand contact with the patient's ready-to-eat foods, oral medications, or oral treatments.
  - High risk contacts: those at risk for developing severe disease or those who may expose persons at high risk for severe disease.
- 1) Consider case's occupation and activities, especially involvement in food handling and/or child or direct patient care.
    - Obtain dates, activities and locations during the period from illness onset till the resolution of symptoms.
  - 2) **ONLY** if a risk of transmission exists, create a line listing of contacts at-risk of developing disease. Note any high risk contacts
  - 3) Follow-up with household and close contacts (especially high risk contacts) as recommended under [Contact Management](#).
  - 4) Institute control measures for school or day-care contacts as indicated under [Isolation, Work and Daycare Restrictions](#).

## Isolation, Work and Daycare Restrictions

### **K.A.R 28-1-6 for *Salmonella* (non-typhoidal):**

- Enteric precautions followed for the duration of acute symptoms.
- Each infected person shall be excluded from food handling, patient care, and any occupation involving the care of young children and the elderly, until no longer symptomatic.
- Any asymptomatic and convalescent infected person without diarrhea may be excluded from, and may return to work by the order of the local health officer or the Kansas Secretary of Health and Environment. This measure is usually reserved for control of outbreaks.

For the purposes of the regulation “enteric precautions” shall mean thorough hand washing after attending to infectious cases or touching the feces of an infected person, disinfection of articles that have been in contact with infectious cases or feces, and sanitary disposal of feces.

School-aged or day-care children: With an understanding of and ability to practice good hygiene, children usually do not represent a risk of spreading this pathogen via the fecal-oral route. Children are a risk only if the infected child is unable to or fails to maintain good hygiene, including hand hygiene after toilet use. Children in diapers at any age constitute a far greater risk of spreading this enteric pathogen. In school settings:

1. Exclude children with diarrhea, fever, or vomiting until symptoms resolve.
2. During a school or daycare-based outbreak, person-to-person outbreak of *Salmonella*, stronger exclusion measures may be warranted and will be based on consultations with the KDHE-BEPHI.

### **Kansas Food Code 2005:**

- Food handlers with diarrhea, fever or vomiting must be restricted from handling food, or be excluded from work if they serve high risk groups, until symptoms have resolved for 24 hours.

Exclusion is not allowing the employee to work at the facility.

Restriction is restricting the employee in the facility by not allowing food handling; cleaning of equipment, utensils or linens; or unwrapping of single-use articles.

High risk groups are immunocompromised or older adults in a health care or assisted living facility or are preschool age children in a facility that provides custodial care.

\* Workers in schools, residential programs, daycare and healthcare facilities that feed, give mouth care or dispense medications may be subject to the same restrictions as food handlers.

## Case Management

- 1) Educate case on measures to avoid future illness and to prevent transmission.
- 2) Additional follow-up is needed if:
  - A case cares for young children, the elderly or handles food, to assure compliance with work restrictions while symptomatic.
  - A case is suffering complications from illness (i.e. hospitalization).
- 3) Additional stool cultures are not routinely indicated. .
- 4) Initiate outbreak control measures appropriate to setting, as needed
  - If necessary, reference the [Kansas Community Containment Toolbox](#) for templates concerning isolation measures.
- 5) Report any changes any changes in patient status, especially complications.

## Contact Management

- 1) Prophylaxis: None.
- 2) If a contact listing was created because of the high possibility of disease transmission, follow-up with contacts to determine if transmission occurred.
  - Collect information on each contact's health status, noting any symptoms
  - Collect information on the contact's occupation.
  - Note any school or daycare attendance. (Include facility name and location.)
  - Note any high risk contacts or situations and handle appropriately.
- 3) As needed, provide education on avoiding further exposures and to ensure proper medical care is obtained and precautions taken if symptoms develop.
- 4) Symptomatic contact:
  - Considered a probable case; [report](#) to KDHE-BEPHI.
  - Encourage the ill contact to seek medical evaluation.
  - Initiate any [restrictions](#).
- 5) In outbreak situations:
  - Cultures to confirm epi-linked cases may be warranted
  - Contacts who are food handlers may need to be restricted from working with high risk populations.

## Environmental

Environmental Investigation: If a commercial food service, daycare center, public water supply or commercial raw milk dairy is implicated in transmission, coordinate with the proper regulatory agency to accomplish the following:

- 1) Inspecting the facility.
- 2) Collecting food, drink or water samples

Consult the [KDHE Foodborne Illness and Outbreak Investigation Manual](#) for further information on facilities associated with food.

Environmental control measures:

- 1) Proper chlorination or boiling of water prevents illness transmission.
- 2) Clean and sanitize potentially contaminated surfaces with 1% bleach or proper germicides.

## Education

- 1) Instruct on the necessary [restrictions](#).
- 2) Counsel contacts to watch for signs or symptoms of *Salmonella* occurring within 7 days of exposure, and to seek medical attention if needed.
- 3) Provide education about preventing the spread of disease:
  - Stress hand washing thoroughly with soap and water before eating/handling food or after using the toilet (emphasize cleaning fingernails).
  - Remind contacts that when taking care of someone with diarrhea to scrub hands with plenty of soap and water after cleaning the bathroom, helping the person use the toilet, or changing diapers, soiled clothes or sheets.
- 4) Provide education on preventing future illness:
  - Hand washing: washing hands thoroughly with soap and water before eating/handling food or after handling raw food, using the toilet, changing diapers and handling pets, fowl, or other animals and/or feces.
  - Avoid eating raw or undercooked meat or poultry. Cook hamburger to an internal temperature of at least 160°F (70°C). Cook poultry to an internal temperature of at least 170°F (77°C) for breast meat, and 180°F (82°C) for thigh meat – meat no longer pink and juices run clear
  - Do not drink unpasteurized milk or eat anything made from it.
  - Use only clean utensils, dishes and cutting boards to prepare food that is already cooked or will be eaten raw or lightly cooked. Anything used to prepare raw meat, seafood, or poultry, including hands and table or counter top, should be washed thoroughly before touching other food.
  - Wash fresh produce before cutting or consuming.
  - Properly refrigerate and store perishable foods. Store in small containers and do not leave at room temperature for more than 2 hours.
  - Avoid drinking or swallowing untreated surface water. Surface water should be boiled or otherwise disinfected before consumption.
- 5) Use the Public Health [Fact Sheet](#) to assist with education.

## MANAGING SPECIAL SITUATIONS

### A. Outbreak Investigation:

Outbreak definition: (1) An unexpected, unexplained increase in cases clustered by time, place, or person; or (2) two or more cases in different households with the same strain or pulsed-field gel electrophoresis (PFGE) pattern clustered by person, place or time (within the incubation period).

- 1) Notify KDHE-BEPHI immediately, 1-877-427-7317.
  - Consult [KDHE Foodborne Manual](#) for outbreaks involving food.
- 2) Organize and maintain all data related to outbreak:
  - All epidemiological data collected during the outbreak will be entered into EpiTrax.
  - Use tracking tools (logbooks, chalkboards or databases) to record actions needed for each suspected case (i.e., deliver stool kit, call)
  - Construct and maintain case listing which includes:
    - Record number, name, DOB (or age) and other specific demographics,
    - Symptoms; onset date and time; recovery date and time
    - Source of exposure (i.e., record number, setting),

- o Specimen collection date and lab results,
  - o Case status (i.e., confirmed, probable, suspect)
- 3) Identify population(s) at risk of infection based on the scope and spread of the outbreak; use the information collected in case investigations to define:
    - Person: who is becoming ill (i.e., age, gender, occupations)
    - Place: where are the cases (i.e. classrooms, address) and to what settings or activities are they associated
    - Time: when did it start and is it still going on
  - 4) Enhance surveillance and perform active case finding:
    - Maintain active surveillance with medical providers serving the affected communities for two incubation periods from last confirmed case.
  - 5) Outbreak control:
    - Target efforts on those population(s) identified as at risk.
    - Evaluate the effectiveness of and consider amendments to the restrictions discussed in [Isolation, Work and Daycare Restrictions](#).
    - Establish protocols for control measures necessary to slow or prevent the transmission of disease in affected settings.

**B. Case Is a Food handler or Food Establishment Is Implicated:**

- 1) Contact the Kansas Department of Agriculture (KDA) Division of Food Safety and Lodging.
- 2) The assigned local food facility inspector will perform the following:
  - Interview the manager to identify other possible cases among staff or patrons within the past 2 weeks.
  - Inquire into any recent complaints from other patrons.
  - Execute any [work restrictions](#) for ill food handlers.
  - Report findings to KDHE (or local health department, if requested).
- 3) The local health department will perform or coordinate the following:
  - Collect stool samples from any staff or patron with history of diarrheal illness within the past 2 weeks.
  - Ensure proper [work restrictions](#) have been executed.
  - If needed, approve reinstatement of food handler(s) to full duties [after necessary conditions](#) have been met.

In addition, with a food handler case or if >1 case is associated to the facility:

- 1) An assigned local food inspector will also perform the following:
  - A thorough inspection of the establishment.
  - Collection of any suspected food samples.
  - Survey employees using the “Gastrointestinal Employee Survey”
  - Instruct the facility operator to call the health department if new cases of diarrhea occur in staff members within the next 2 weeks.
- 2) The local health department will also perform or coordinate the following:
  - Initiate an [outbreak investigation](#) and notify KDHE-BEPHI, if:
    - o The associated cases are from different households, or
    - o There are additional cases within the two week period.
  - Initiate a [contact investigation](#) if warranted based on inspection.

### C. Daycare Worker or Attendee:

For one case, proceed with the following activities:

- 1) Interview the operator and request a review of attendance records to identify other possible cases among staff or attendees in the past 2 weeks.
- 2) Coordinate the collection stool specimens or rectal swabs from any attendees or staff with a history of diarrheal illness within the past 2 weeks.
  - Testing of all symptomatic individuals is not a good use of resources.
  - Stool cultures from three to five symptomatic individuals will help to confirm the diagnosis in a suspected outbreak situation.
  - Collect samples first from those who are still symptomatic followed by those who most recently had their symptoms resolve.
- 3) Reinforce the need to [exclude](#) symptomatic children or adults. (Asymptomatic, culture positive individuals are not excluded if proper personal hygiene measures are maintained.)

If >1 case or suspected case is identified among attendees or workers:

- 1) Contact KDHE-BEPHI and initiate an [outbreak investigation](#).
- 2) Contact the KDHE Child-Care Licensing Program at (785) 296-1270, and/or the local daycare inspector to coordinate the following:
  - Thorough inspection of the facility.
    - Investigate hand washing, diapering and disinfection procedures.
    - Investigate for possible source of infection during last 7 days:
      - Possible index cases.
      - Animal contact (on-site and field trips).
      - Water-play areas.
      - For suspected point source outbreaks, collect menus of food and drinks served during the last 3 days from the first date of onset.
  - Exclusion of symptomatic children and adults until no symptoms for 24 hours. Continue the stricter exclusion policy until the outbreak is over with no new cases for a 1 week period following the last case's onset.
  - Review findings with daycare operator and implement control measures.

In all instances:

- 1) Educate on how to prevent disease transmission at center and at home.
- 2) Instruct the facility operator to call the health department immediately if new cases of diarrhea occur.
- 3) Call or visit each week a week after the last case's onset to verify no further cases and that appropriate hygienic measures are being carried out.

### D. Public Gathering Implicated:

- 1) Food sources may include undercooked meat, cross-contaminated food, or possibly food contaminated by food handler.
- 2) Conduct active case finding; ask about recent illness among food handlers.
- 3) If a food establishment or distributor is implicated as the source of infection refer to "[Case Is a Food Handler or Food Establishment Is Implicated.](#)"
- 4) If animal sources are implicated:
  - Hygienic and control measures may need to be initiated on farms, petting zoos or fairs. (Refer to [Animals in Public Places Compendium](#).)
  - Proper hand washing after handling animals should always be stressed.

### C. Commercial Dairy or Community Water Source Implicated:

Consult with KDHE-BEPHI epidemiology staff if a case reports drinking raw milk from a commercial dairy with no other identifiable source of infection or when the investigation implicates a community drinking water system.

### D. Health Care Setting Associated:

- 1) Hospitals: *Salmonella spp.*, are occasionally associated with nosocomial infections. Sources of infection include food, person-to-person, contaminated instruments and asymptomatic infants.
  - Nosocomial describes infections not present or incubating prior to the patient being admitted but acquired in hospitals and usually observed >48 hours after admission. As the incubation period will vary to some extent based on underlying health conditions, each infection should be assessed individually. Nosocomial infections include those acquired in the hospital but not evident until after discharge.
  - Coordinate investigation efforts with hospital infection control.
- 2) Nursing home: Crowded communal living conditions and age-related risk factors including immune status and higher rates of antibiotic usage, dementia, and incontinence may allow transmission of enteric pathogens.
  - Coordinate investigation efforts through nursing home administrator.
  - Kansas Department of Aging should be notified if a nursing home, adult care, or long-term care facility is involved in an outbreak.

### E. Intentional Contamination

As a category B agent and food safety threat, it is moderately easy to disseminate and results in moderate morbidity but low mortality. In 1984, the intentional *S. typhimurium* contamination of The Dalles, Oregon salad bars resulted in 751 illnesses.

- 1) If suspected, notify local law enforcement and state public health officials.
  - Consider epidemiologic clues and law enforcement guidance.
  - Observations during environmental assessments may provide evidence.
- 2) Implement "[Chain of Custody](#)" procedures for all samples collected, as they will be considered evidence in a criminal investigation.
- 3) Refer to the [KDHE Foodborne Illness and Outbreak Investigation Manual](#) for situations involving food.

## DATA MANAGEMENT AND REPORTING TO THE KDHE

A. Organize and collect data.

B. Report data via the state electronic surveillance system.

- Especially data that collected during the investigation that helps to confirm or classify a case. (For epi-linked cases, please include the Record Number of the related case.)

## ADDITIONAL INFORMATION / REFERENCES

- A. **Treatment / Differential Diagnosis:** American Academy of Pediatrics. 2009 Red Book: Report of the Committee on Infectious Disease, 28th Edition. Illinois, Academy of Pediatrics, 2009.
- B. **Epidemiology, Investigation and Control:** Heymann. D., ed., Control of Communicable Diseases Manual, 19th Edition. Washington, DC, American Public Health Association, 2009.
- C. **Case Definitions:** CDC Division of Public Health Surveillance and Informatics, Available at: [http://www.cdc.gov/osels/ph\\_surveillance/nndss/casedef/case\\_definitions.htm](http://www.cdc.gov/osels/ph_surveillance/nndss/casedef/case_definitions.htm)
- D. **Quarantine and Isolation:** Kansas Community Containment Isolation/ Quarantine Toolbox Section III, Guidelines and Sample Legal Orders [www.kdheks.gov/cphp/operating\\_guides.htm#coc](http://www.kdheks.gov/cphp/operating_guides.htm#coc)
- E. KDHE. Control of Enteric Disease Outbreaks in Child-Care Facilities, Manual 2011: [www.kdheks.gov/epi/download/Enteric\\_Disease\\_in\\_Daycare\\_Centers.pdf](http://www.kdheks.gov/epi/download/Enteric_Disease_in_Daycare_Centers.pdf).
- F. **Kansas Regulations/Statutes Related to Infectious Disease:** [www.kdheks.gov/epi/regulations.htm](http://www.kdheks.gov/epi/regulations.htm)
- G. **KDHE Foodborne Illness and Outbreak Investigation Manual:** [www.kdheks.gov/epi/download/kansas\\_foodborne\\_illness\\_manual.pdf](http://www.kdheks.gov/epi/download/kansas_foodborne_illness_manual.pdf)
- H. **Animals in Public Places Compendium:** [www.kdheks.gov/epi/human\\_animal\\_health.htm](http://www.kdheks.gov/epi/human_animal_health.htm)
- I. **Additional Information (CDC):** [www.cdc.gov/health/default.htm](http://www.cdc.gov/health/default.htm)

## ATTACHMENTS

- **KDHE Salmonella Report Form**
- **Fact Sheet**
- **Sample Letter, Enteric to Case**

*To view attachments in the electronic version:*

1. Go to <View>; <Navigation Pane>; <Attachments> – OR – Click on the “Paper Clip”  icon at the left.
2. Double click on the document to open.