

Campylobacter Investigation Guidelines

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Campylobacter

Disease Management and Investigation Guidelines

CASE DEFINITION (CDC, 1990)

A. Clinical Description for Public Health Surveillance:

Infection may result in diarrheal illness of variable severity.

B. Laboratory Criteria for Case Classification:

- Isolation of *Campylobacter* from a clinical specimen

C. Case Classification:

- Confirmed: A case that is laboratory confirmed.
- Probable: A clinically compatible case that is epidemiologically linked to a confirmed case.
- Suspect: *Campylobacter* positive laboratory results that were not confirmed by isolation of *Campylobacter*. (KDHE definition used for data management.)

D. Laboratory Testing:

- Collection: Use an enteric kit (bottle with a Cary-Blair medium (0.16% agar))
- Specimen: Feces
- Amount: Marble size (preferred)
- Special media and incubation procedures required for isolation.
- Submission of *Campylobacter* isolates to the Kansas Health and Environmental Laboratories (KHEL) is not required by law, but isolation of *Campylobacter* from stool specimens and pulsed-field gel electrophoresis (PFGE) analysis on isolates can be performed by request during outbreak investigations or in other matters of public health importance.
- 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 http://www.kdheks.gov/labs/lab_ref_guide.htm.

E. Bioterrorism Potential: Not defined as category A, B, or C agent by the CDC, but deliberate food contamination has occurred before in the United States.

F. Outbreak Definition:

- An unexpected, unexplained increase in cases clustered by time, place, or person; or
- 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 for the agent).

INVESTIGATOR RESPONSIBILITIES

A. Investigation Related Tasks and Activities:

- 1) Confirm diagnosis with appropriate medical provider
 - Before contacting the patient, discuss with the health care provider what the patient has been told about his/her evaluation for disease.
 - Obtain information that supports clinical findings in case definition and information on the dates of service or onset date of the symptoms.
 - Obtain information on laboratory tests performed and results.

- If *Campylobacter* was not isolated from the clinical specimen (i.e. suspect case), contact laboratory to have the stool specimen forwarded to state laboratory for isolation procedures.
- If patient hospitalized, obtain medical records, including admission notes, progress notes, lab report(s), and discharge summary.
- 2) Conduct case investigation to identify potential source of infection.
- 3) Conduct contact investigation to locate additional cases and/or contacts.
 - Determine if case is involved in a high-risk occupation or if another special situation is involved (e.g. food handler, daycare provider or attendee, patient care provider, or animal exposure).
- 4) Identify whether the source of infection may be of major public health concern, such as a commercial raw milk dairy or public water supply.
- 5) Initiate control and prevention measures to prevent spread of disease.
 - Provide education that includes basic information about the disease and way to prevent transmission of illness.
 - If needed, work with appropriate regulatory personnel to ensure that work restrictions or exclusions are initiated for high-risk cases and/or contacts (e.g. food handler, daycare attendee, direct patient care)
- 6) Report all cases to the KDHE Office of Surveillance and Epidemiology at KDHE using established methods.

B. Notifications:

- No special notifications or additional reporting unless the case is associated with an outbreak. The investigator should then immediately notify the Local Health Officer, the local on-call epidemiologist and KDHE (1-877-427-7317).
- As appropriate, use the notification letter and the disease fact sheet to notify the case, contacts and other individuals or groups.

EPIDEMIOLOGY

Campylobacter is the most common bacterial cause of diarrheal illness in the United States. It is estimated that over 1 million cases occur annually with most occurring as isolated, sporadic events. Common-source outbreaks have been associated with foods; especially undercooked poultry, unpasteurized milk and non-chlorinated water. Children and young adults have the highest incidence of infection. Immunocompromised persons are at increased risk of infections with recurrences and severe symptoms and are more likely to be chronic carriers.

DISEASE OVERVIEW

A. Agent:

Campylobacter is a gram-negative rod with hundreds of serotypes; of these, the 2 most common causes of gastroenteritis are *C. jejuni* and *C. coli*.

B. Clinical Description:

Acute gastroenteritis of variable severity, characterized by diarrhea that is often bloody, abdominal pain, malaise, nausea and occasional vomiting. It is usually self-limiting and symptoms usually cease within 2-5 days. Illness can be prolonged in adults and relapses may occur.

C. Reservoirs:

Campylobacter is endemic in animals including cattle and poultry, swine, sheep, and pets including birds, kittens and puppies. A large proportion of raw poultry is contaminated with *C. jejuni*. Chronic infection of poultry and other animals constitutes the primary source of infection.

D. Mode(s) of Transmission:

Fecal-oral, including: person-to-person, animal-to-person, waterborne and foodborne. Ingestion of the organism in under-cooked meat, food, water, or raw (unpasteurized) milk contaminated with human or animal feces and/or from contact with infected pets (especially puppies and kittens), farm animals or infected infants. Cross-contamination from poultry, especially from common cutting boards. Person-to-person transmission, although rare, may occur among household contacts, pre-school children in daycare, and the elderly and developmentally disabled persons living in residential facilities. Transmission may also occur through certain types of sexual contact (e.g., oral-anal contact).

E. Incubation Period:

2 to 5 days, with a range from 1-10 days, depending on the infective dose.

F. Period of Communicability:

Variable, for as long as the infected person excretes *Campylobacter* bacteria in their stool. This may last from several days to weeks. Individuals not treated with antibiotics may excrete organisms for 2-7 weeks. This temporary carrier state is probably of little epidemiological importance, except for infants and others who are incontinent of stool.

G. Susceptibility and Resistance:

Lasting immunity to serologically related strains follows infection.

H. Treatment

Fluid and electrolyte replacement therapy may be indicated. *C. jejuni* or *C. coli* are susceptible to many antimicrobial agents in vitro, including erythromycin, tetracyclines and quinolones, but these are of value only early in the illness, in invasive cases, or to eliminate the carrier state. In some areas quinolone resistance is increasing. Antimotility agents are not recommended.

STANDARD CASE INVESTIGATION AND CONTROL METHODS

Standard investigation activities include the following:

- 1) Confirmation of diagnosis using case definition.
- 2) Collection of demographic data (birth date, county, sex, race/ethnicity)
- 3) Collection of clinical data (symptoms and laboratory results supporting case definition, onset date and time, and if available recovery date and time).
- 4) Determination of risk factors (e.g., close contact with another case, association with high risk foods, daycare, public gathering or animals).
- 5) Investigation of epi-links among cases (cluster, household, co-workers, etc).

Standard investigation **includes** completion of the General Investigation Form and Enteric Supplemental Form. Further investigative activity should include:

A. Case Investigation to Identify Potential Source of Infection:

Focus within the incubation period and on potential sources of infection:

- Exposure to others with diarrhea in or outside of household. Obtain relationship to case, occupation(s) and dates.
- Food history, 7 days prior to onset, including place of purchase (e.g., poorly cooked meat, poultry or eggs, and unpasteurized dairy products). Consider food-handling practices and opportunities for cross-contamination.
- Restaurant or group gathering history, 7 days prior to onset. Obtain name, location of restaurant/gathering, food eaten and exposure dates.
- Contact with animals 7 days prior to onset. Specify type and location (e.g. farm, petting zoo, school).
- In-state and out-of-state travel up to 2 weeks prior to onset. Obtain dates and location(s). (Including hiking, camping or hunting trips.)
- Drinking water sources. Specify type (e.g. private, treated, or bottled)
- Recreational water exposure. Obtain dates, locations and participation type.
- Association with childcare, residential facility/institution. Obtain dates and locations.
- Health history; underlying medical conditions, medical/surgical or GI procedures, medicines (including over-the-counter and “organic/holistic” or vitamins and herbs.)
- For infants \leq 3 months of age, if a source is not identified, may need to obtain detailed epidemiologic data and 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.

B. Contact Investigation – Identify Exposed Individuals / Populations:

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: Anyone sharing classroom with the case.
- School Contacts: 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.

C. Isolation, Work and Daycare Restrictions

- Campylobacteriosis is not considered for quarantine or isolation under Kansas Administrative Code, but the following guidelines are suggested:
 - Enteric precautions followed for the duration of acute symptoms.
 - Symptomatic people should be excluded from food handling, care of patients in hospitals, and care of people in custodial care and child care centers until no longer symptomatic.
 - Asymptomatic but infected food handlers and hospital employees need not be excluded from work if proper personal hygiene measures, including hand hygiene, are maintained.

- Children with diarrhea may not attend daycare or school until symptoms have resolved.
- KS Food code regulations recommend that food handlers with diarrhea, fever or vomiting be restricted from handling food or be excluded from work if they serve high risk groups until symptoms have resolved for 24 hours. (Refer to the KDHE Foodborne Illness and Outbreak Investigation Manual for further information.)
 - Workers in schools, residential programs, daycare and healthcare facilities, who feed, give mouth care or dispense medications to clients subject to the same restrictions as food handlers.

Note: Exclusion is not allowing the employee to work at the food establishment. Restriction is not allowing the employee to work with food; to clean equipment, utensils or linens; or to un-wrap single-use articles in the food establishment. High risk groups are those more likely to experience foodborne disease because they are immunocompromised or older adults in a facility that provides health care or assisted living services, such as a hospital or nursing home; or are preschool age children in a facility that provide custodial care, such as a daycare center.

D. Case Management, Including Follow-up of cases:

- Educate case on measures to avoid future illness and its transmission.
- Follow-up is indicated if a case cares for young children, the elderly or patients or handles food to assure compliance with work restrictions.
- Additional stool cultures are not routinely indicated.
- If necessary, reference the Kansas Community Containment Toolbox for templates concerning isolation measures.

E. Contact Management, Including Protection of Contacts:

- Protection or prophylaxis: None.
- Provide education on avoiding further exposures and to ensure proper medical care is obtained and precautions taken if symptoms develop.
- Symptomatic contact: Considered a probable case; initiate any work or daycare/school restrictions. Encourage to seek medical evaluation.
- Cultures may be needed to confirm epi-linked cases in outbreak situations.
- Follow-up of contacts may be needed to assure no transmission of disease.

F. Environmental Measures:

- None, unless a commercial food service, daycare center, public water supply or commercial raw milk dairy is implicated in transmission. In which case the following activities should be coordinated through the proper regulatory agency:
 - Inspection of the facility.
 - Collection of food, drink or water samples
- Consult of the KDHE Foodborne Illness and Outbreak Investigation Manual.
- Proper chlorination or boiling of water prevents illness transmission.
- Clean and sanitize potentially contaminated surfaces with 1% bleach or proper germicides.

G. Education:

- Advise cases and contacts on measures to avoid future exposures.
 - Emphasis on hand washing, cleaning fingernails and personal hygiene.
 - Washing hands thoroughly with soap and water before eating/handling food or after handling raw food, after using the toilet, after changing diapers and after handling pets, fowl, or other animals and/or feces.
 - Avoid eating raw or undercooked meat, seafood or poultry, especially poultry. Cook poultry to an internal temperature of at least 170°F (77°C) for breast meat, and 180°F (82°C) for thigh meat – no longer pink and juices run clear.
 - Do not eat raw shellfish.
 - 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.
 - 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.
 - When taking care of someone who has diarrhea scrub hands with plenty of soap and water after cleaning the bathroom, helping the person use the toilet, or changing diapers, soiled clothes or soiled sheets.
- As needed, inform of communicability, incubation period and symptoms.
- Use the “Public Health Fact Sheet on Campylobacter” for education.

MANAGING SPECIAL SITUATIONS

A. Outbreak Investigation:

- Notify KDHE immediately, 1-877-427-7317.
- Consult KDHE Foodborne Illness and Outbreak Investigation Manual for outbreaks involving food.
- Consult KDHE Control of Enteric Outbreaks in Child-Care Facilities for outbreaks involving child-care.
- Organize and maintain all data related to outbreak:
 - Construct and maintain case listing which includes:
 - KS-EDSS ID,
 - Name, DOB (or age) and any other specific demographics,
 - Symptoms; onset date and time; recovery date and time
 - Source of exposure (i.e., case ID, setting, classroom),
 - Specimen collection date,
 - Lab results,
 - Case status (i.e., confirmed, probable, suspect)
 - Use tracking tools (logbooks, chalkboards or databases) to record actions needed for each suspected case (i.e., deliver stool kit, call)
- 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
- 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.
- Outbreak control:
 - Target efforts on those population(s) identified as at risk.
 - Establish protocols for control measures necessary for all likely situations (i.e., exposure in child care center, school).

B. Daycare Worker or Attendee:

For one case, proceed with the following activities:

- Interview the operator and request review of attendance records to identify other possible cases among staff or attendees in the past 2 weeks.
- Coordinate the collection stool specimens from any other 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.
- Reinforce the need to exclude symptomatic children or adults.
(Asymptomatic, culture positive individuals are not excluded if proper personal hygiene measures are maintained.)
- Educate on how to prevent disease transmission at center and at home.
- If >1 case or suspected case is identified among attendees or workers at a daycare facility, a thorough inspection of the facility is indicated.
 - Contact KDHE and refer to the Outbreak section above.
 - Coordinate activities with the local daycare inspector and the KDHE Child-Care Licensing Program.
 - Exclude symptomatic children and adults until diarrheal symptoms have resolved for 24 hours. (Continue until the outbreak is considered over with no new cases for a 2 week period following the last case's onset.)
 - Treatment should be recommended for all culture positive individuals (symptomatic or asymptomatic) if they attend or work at the daycare or are household members of those who attend or work at the daycare.
 - Investigate hand washing, diapering and disinfection procedures.
 - Investigate for possible source of infection and routes of transmission:
 - Possible index cases.
 - Animal contact (on-site and field trips).
 - For suspected point source outbreaks, collect menus of food and drinks served during the last 7 days from the first date of onset.
 - Review findings with daycare operator and implement control measures
 - The day-care center should not be closed to new admission or to readmission and temporary closure is not recommended. Permanent

closure or revocation of license may occur if deemed necessary by the Child-Care Licensing Program based on additional findings.

- The facility operator should be instructed to call the health department immediately if new cases of diarrhea occur.
- Call or visit each week for 2 weeks after the last case's onset to verify no further cases and that appropriate hygienic measures are being carried out.

C. Case Is a Food handler or Restaurant Is Implicated:

For one case, proceed with the following activities:

- Coordinate the following activities with the local food facility inspector and the Kansas Department of Agriculture (KDA) as needed.
 - KDA Division of Food safety and Lodging regulates grocery stores, convenience stores, restaurants, schools, senior meal sites, mobile food units, lodging facilities, food wholesalers and warehouses, food processors and food manufacturers.
- Interview the manager and identify other possible cases among staff or patrons within the past 2 weeks.
 - The first page of the “Gastrointestinal Employee Survey” in the KDHE Foodborne Illness and Outbreak Manual can be used as a tool.
- Coordinate the collection of stool samples from any staff member with history of diarrheal illness within the past 2 weeks.
- Refer to the above “Isolation, Work and Daycare Restrictions” for further instruction on exclusion and restriction of food handlers.
- If a case or suspect case is identified among staff or if >1 case or suspected case is associated with the facility, a thorough inspection of the establishment is indicated.
 - For a suspected outbreak, notify the KDHE and refer to the “Outbreak Investigation” section above.
 - Coordinate inspection, collection of any food samples and surveys with the food facility inspector.
 - Use the complete “Gastrointestinal Employee Survey” to identify ill employees.
- The facility operator should be instructed to call the health department if new cases of diarrhea occur.

D. Public Gathering Implicated:

- Food sources may include undercooked meat, cross-contaminated food, or possibly food contaminated by food handler.
- Conduct active case finding; ask about recent illness among food handlers.
- 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.”
- 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.)
 - Pets and other domestic animals may need to be treated to control.
 - Proper hand washing after handling animals should always be stressed.

E. Commercial Dairy or Community Water Source Implicated:

- Consult with the State 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.

F. Health Care Setting Associated:

- Hospitals: *Campylobacter*, while usually community acquired, has on rare occasion been associated with nosocomial infections.
 - 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.
- 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.

G. Intentional Contamination

- 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.
- Implement “Chain of Custody” procedures for all samples collected, as they will be considered evidence in a criminal investigation.
- Refer to the [KDHE Foodborne Illness and Outbreak Investigation Manual](#).

DATA MANAGEMENT AND REPORTING TO THE KDHE

A. Organize, collect and report data utilizing the “General Investigation Form” and “Enteric Disease Supplemental Form”.

B. Report data electronically via KS-EDSS or by fax, include:

- All essential data that was collected during the investigation, especially data that helps to confirm or classify a case.
 - For epi-linked cases, please include the KS-EDSS investigation ID of the related case in the notes section.
- All information collected on the supplemental form.

ADDITIONAL INFORMATION / REFERENCES

- A. Treatment / Differential Diagnosis:** American Academy of Pediatrics. 2006 Red Book: Report of the Committee on Infectious Disease, 27th Edition. Illinois, Academy of Pediatrics, 2006.
- B. Epidemiology, Investigation and Control:** Heymann. D., ed., Control of Communicable Diseases Manual, 18th Edition. Washington, DC, American Public Health Association, 2004.
- C. Case Definitions:** CDC Division of Public Health Surveillance and Informatics, Available at: http://www.cdc.gov/ncphi/diss/nndss/casedef/case_definitions.htm
- D. Quarantine and Isolation:** Kansas Community Containment Isolation/ Quarantine Toolbox Section III, Guidelines and Sample Legal Orders <http://www.waldcenter.org/Quarantine%20and%20Isolation%20Information%20for%20Health%20Officers.pdf>
- E. Kansas Regulations/Statutes Related to Infectious Disease:** <http://www.kdheks.gov/epi/regulations.htm>
- F. KDHE Foodborne Illness and Outbreak Investigation Manual:** http://www.kdheks.gov/epi/download/kansas_foodborne_illness_manual.pdf
- Section 5, Environmental Health Assessment, including Intentional Contamination of Food investigation guidance.
 - Appendix D, Exclusion and Restriction Requirements for Food handlers.
- G. KDHE Control of Enteric Disease Outbreaks in Childcare Facilities:** http://www.kdheks.gov/epi/download/Enteric_Disease_in_Day_care_centersver4.pdf
- H. Animals in Public Places Compendium:** http://www.kdheks.gov/epi/human_animal_health.htm
- I. KDHE Foodborne Illness Resources:** <http://www.kdheks.gov/epi/foodborne.htm>
- J. Additional Information (CDC):** <http://www.cdc.gov/health/default.htm>

Kansas Disease Investigation Guidelines

General Investigation Form

Investigation Information		
Case Type: <input type="checkbox"/> Human Case <input type="checkbox"/> Non-human Case	Disease Name: _____	
Classification: <input type="checkbox"/> Suspect <input type="checkbox"/> Probable <input type="checkbox"/> Confirmed	KS-EDSS Investigation ID: _____	
Outbreak: <input type="checkbox"/> Yes <input type="checkbox"/> No	Outbreak Name: _____	Outbreak #: _____
Onset Date: _____	Diagnosis Date: _____	Report Date: _____
Assigned to (Investigator): _____	Patient Died: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	
Patient Information		
Name Type: <input type="checkbox"/> Default/Common <input type="checkbox"/> Legal <input type="checkbox"/> Maiden <input type="checkbox"/> Nickname		
Last: _____	First: _____	Middle: _____
Street: _____	City/State: _____	Zip: _____
Evening Phone #: _____	Daytime Phone #: _____	
Sex: <input type="checkbox"/> Failure to Report <input type="checkbox"/> Female <input type="checkbox"/> Male <input type="checkbox"/> Other <input type="checkbox"/> Transexual <input type="checkbox"/> Unknown		
Race: <input type="checkbox"/> American Indian or Alaska Native <input type="checkbox"/> Asian <input type="checkbox"/> Black or African American <input type="checkbox"/> Native Hawaiian or Other Pacific Islander <input type="checkbox"/> White <input type="checkbox"/> Unknown		
Hispanic / Latino Ethnicity: <input type="checkbox"/> Yes <input type="checkbox"/> No		
Date of Birth: _____	Age: _____	Age Unit: <input type="checkbox"/> Days <input type="checkbox"/> Weeks <input type="checkbox"/> Months <input type="checkbox"/> Years
Parent Information (if under 18)		
Last: _____	First: _____	Middle: _____
Street: _____	City/State: _____	Zip: _____
Evening Phone #: _____	Daytime Phone #: _____	
Work / Occupation or School / Grade		
Worksites / School: _____		
Occupations / Grade: _____		
Travel History		
1st	Destination: _____	Depart Date: _____ Return Date: _____
2nd	Destination: _____	Depart Date: _____ Return Date: _____
3rd	Destination: _____	Depart Date: _____ Return Date: _____
4th	Destination: _____	Depart Date: _____ Return Date: _____

Supplemental Laboratory Report Form

Lab Reports

Laboratory Name: _____

Lab Report Date: _____

Ordering Provider Name: _____

Phone: _____

Facility: _____

Specimen Accession Number: _____

Specimen Collection Date: _____

Organism Name: _____

Organism Species: _____

Organism Serogroup: _____

Organism Serotype: _____

PFGE Results

Pattern 1 KS: _____

Other State: _____

CDC: _____

Pattern 2 KS: _____

Other State: _____

CDC: _____

Pattern 3 KS: _____

Other State: _____

CDC: _____

Additional Results Information

Reported Test Name:

Coded Result:

Text Result:

Numeric Result:

Comments:

Supplemental Contact Form

Contacts

Last: _____ **First:** _____ **Middle:** _____

Street: _____ **City/State:** _____ **Zip:** _____

Evening Phone #: _____ **Daytime Phone #:** _____ **E-mail:** _____

Sex: Failure to Report Female Male Other Transexual Unknown

Race: American Indian or Alaska Native Asian Black or African American Native Hawaiian or Other Pacific Islander White Unknown

Hispanic / Latino Ethnicity: Yes No

Date of Birth: _____ **Age:** _____ **Age Unit:** Days Weeks Months Years

Worksites / School: _____

Occupations / Grade: _____

Exposure Information

Contact Type: Household Sexual Other: _____ **Partner / Cluster Code:** _____

Date of First Exposure: _____ **Date of Last Exposure:** _____ **Frequency:** _____

Nature of Exposure: _____ **Comments:** _____

Testing and Treatment Information

Clinic Code: _____ **Examination Date:** _____

Examination Test: _____ **Examination Result:** _____

Prophylaxis/empiric treatment date: _____ **Drug / Dosage:** _____

Provider (Name / Facility): _____

Disposition and Diagnosis Information

Initiation Date: _____ **Disposition Date:** _____ **Disposition:** _____

Diagnosis: _____ **Referral Type:** Patient Provider **Post-test Counseled :** Yes No

Currently Assigned To: _____ **Follow-up Date:** _____

Risk Factors

Pregnant: Yes No **If Yes, # of Weeks:** _____

Risk factors for complications in contact: None Pregnant Woman HIV Seropositive Unimmunized Index case is a super-spreader

Child younger than 5 Age > 65 Otherwise immunosuppressed (s/p transplant, high dose steroids, etc)

Enteric Disease Supplemental Form

Kansas Department of Health and Environment

Epidemiologic Case History

Condition	
<i>Calicivirus/Norwalk-like virus (norovirus)</i>	<i>Campylobacter Infection (Campylobacter spp.)</i>
<i>Cryptosporidiosis (Cryptosporidium parvum)</i>	<i>Enterohemorrhagic Escherichia coli (EHEC)</i>
<i>Enterohemorrhagic Escherichia coli O157:H7</i>	<i>Enterohemorrhagic Escherichia coli shiga toxin positive (not serogrouped)</i>
<i>Enterohemorrhagic Escherichia coli shiga toxin positive (serogroup non-O157)</i>	<i>Giardiasis (Giardia lamblia)</i>
<i>Salmonellosis (Salmonella spp.)</i>	<i>Shigellosis (Shigella spp.)</i>
<i>Cyclosporiasis (Cyclospora cayetanensis)</i>	<i>Hepatitis A</i>
<i>Listeriosis (Listeria monocytogenes)</i>	

* indicates required fields

Case Type*		Classification*					
<i>Human Case</i>	<i>Non Human Case</i>	<i>Confirmed</i>	<i>Not a Case</i>	<i>Probable</i>	<i>Suspect</i>	<i>Deleted</i>	<i>Unknown</i>

Supplemental Form Status				
<i>Not Done</i>	<i>Form Complete</i>	<i>Form in Progress</i>	<i>Form Approved</i>	<i>Form Sent to CDC</i>

Report Date*
mm/dd/yyyy

Date Investigation Started
mm/dd/yyyy

Patient Demographic Information

* indicates required fields

Last Name*	First Name*	Middle Name	Name Type*	Age
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Age Unit <i>Days Weeks Unknown Months Years</i>	Date of Birth <small>mm/dd/yyyy</small>
---	---

Race*
(Check all that apply)

American Indian or Alaska Native Asian Black or African American
Native Hawaiian or Other Pacific Islander White Unknown

Ethnicity*
Hispanic or Latino Not Hispanic or Latino Unknown

Sex*
Failure to Report Female Male Other Transexual Unknown

Street Address

City	County	State	Zip
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Evening Phone <small>###-###-####</small>	Daytime Phone <small>###-###-####</small>
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Occupation

High Risk Potential:
(Check all that apply)

<i>Contact to a confirmed case _____</i>	<i>Contact to a suspected case _____</i>
<i>Daycare attendee _____</i>	<i>Food handler _____</i>
<i>Direct patient care worker _____</i>	<i>Institutional resident or staff _____</i>
<i>Daycare worker _____</i>	<i>Animal handler _____</i>
<i>Other _____</i>	

If enrolled in day care, please complete the information below.

Name of Facility	Evening Phone <small>###-###-####</small>
-------------------------	---

Street Address		City
County	State	Zip

Person Providing Report

Name of Reporting Facility*

Clinical and Laboratory Data

Individual diagnosed with <i>Hemolytic Uremic Syndrome (HUS) Thrombotic Thrombocytopenic Purpura (TTP)</i>	Was a stool specimen collected? <i>Yes No</i>
---	--

Diarrhea? <i>Yes No Unknown</i>	Number of Stools <i>0 - 2 3 - 10 11 and above</i>	Blood in Stool? <i>Yes No Unknown</i>	Vomiting? <i>Yes No Unknown</i>
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Nausea? <i>Yes No Unknown</i>	Abdominal Cramps? <i>Yes No Unknown</i>	Muscle Ache? <i>Yes No Unknown</i>	Other Symptoms? <i>other _____</i>
---	---	--	--

What was the first Symptom	Date of Onset <small>mm/dd/yyyy</small>	Time of Onset
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Clinical and Laboratory Data cont.

Fever? <i>Yes No Unknown</i>	If Yes, specify highest temperature:
--	---

Physician Information

Was a physician consulted for this illness? <i>Yes (please complete the information below) No</i>	Name of physician:
---	---------------------------

Evening Phone ###-###-####	Street Address
--------------------------------------	-----------------------

City	County	State	Zip
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Antibiotic Information

Was case treated with antibiotics anytime in the 14 days prior to illness? <i>Yes No Unknown</i>	Type of treatment/antibiotic	Reason for taking	Date started mm/dd/yyyy
--	-------------------------------------	--------------------------	-----------------------------------

Date completed mm/dd/yyyy	Was case treated with antibiotics for this illness? <i>Yes No Unknown</i>	Type of treatment:	Date Started: mm/dd/yyyy
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Date completed: mm/dd/yyyy	Was organism resistant to antibiotics? <i>Yes No Unknown</i>	If yes, specify resistance pattern:
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Is the patient on any medication or receiving any treatment which may suppress their immune system (i.e. Corticosteroids or Cancer Chemotherapy)? <i>Yes No Unknown</i>	If yes please specify medication or treatment:
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Did patient recover? <i>Yes No Unknown</i>	Recover Date mm/dd/yyyy	Recover Time
--	-----------------------------------	---------------------

Exposure/Transmission

Did anyone else (in your family ..) recently have similar symptoms? <i>Yes (please complete below) No Unknown</i>

Name	Age	Sex	Relationship to Case	Occupation	Symptoms	Date of Onset
						mm/dd/yyyy

Any restaurant, commercial food establishments, or group gatherings visited within the 7 days prior to onset of illness? <i>Yes (please complete below) No Unknown</i>
--

Name of Establishment	City, County, State	Foods eaten	Date of Exposure
			mm/dd/yyyy

Travel History

Did the patient Travel prior to the onset of illness?

Yes No Unknown

If yes, please complete below:

Where:	Departure Date: <small>mm/dd/yyyy</small>	Return Date: <small>mm/dd/yyyy</small>
Where:	Departure Date: <small>mm/dd/yyyy</small>	Return Date: <small>mm/dd/yyyy</small>

Water Exposure

Possible water sources:

(Check all that apply)

Municipal Water System _____ *Bottled Water* _____ *Private Well* _____
Rural Water System _____ *Other (specify):* _____

Did patient drink water from other than a treated municipal system (i.e., stream, well)?

Yes No Unknown

Other Possible Exposure Information

Was there contact with pets or animals within 7 days prior to onset?

Yes No Unknown

If yes, please indicate below:

(Check all that apply)

Caged Birds Cats Cattle Chickens Dogs Ducks
Frogs Goats Guinea Pigs Hamsters Horses Lizards
Mice Parakeets Pigeons Pigs Poultry Rabbits
Rats Sheep Snakes Turkeys Turtles Other _____

Other Exposure Information

Other Birds?	If yes, please specify	Other Reptiles?	If yes, please specify
<i>Yes No Unknown</i>		<i>Yes No Unknown</i>	

Other Animals?

Yes No Unknown

If yes, please specify

Were any of these animals ill near the time of onset

Yes No Unknown

If yes, please describe:

Where were the animals located?

(Check all that apply)

Home Farm School Pet Store Zoo Petting Zoo Other _____

Other Possible Exposure Information cont.

Within 7 days prior to onset of illness, did the patient participate in:

Activity	Participation	Date <small>mm/dd/yyyy</small>	Location
Outdoor Activities			
Swimming			
Chlorinated Pool			
Wading Pool			
River/Lake/Pond			

Food History

Did case eat any of the following within 7 days prior to the onset of illness?

Food Product	Consumed	City, County, State	Variety or Brand(s)	Supplier	Supplier City
1. Chicken					
2. Hamburger					
3. Sausage					
4. Hot Dogs					
5. Lunch Meat					
6. Eggs					
7. Milk raw					
8. Milk past.					
8. Fresh juice					
10. Fresh berries					
11. Fresh melon					
12. Other fresh fruit					
13. Lettuce					
14. Alfalfa Sprouts					
Other fresh vegetables		Other Food Item 1		Other Food Item 2	

At what store(s) do you regularly shop for groceries?

SEVEN-DAY ENTERIC QUESTIONNAIRE MODIFIED FOR CHILD CARE STAFF *(telephone interview)*

Hello, my name is _____. I am *(with/calling on behalf of)* the name of health department. We are currently investigating an outbreak of diarrhea and vomiting which has occurred at name of child-care facility. To assist us in our investigation, we are asking parents or guardians of **ALL** children enrolled at name of child-care facility to complete this questionnaire. Your participation is essential in this investigation. All information is confidential and will only be used for public health purposes. Do you have about 15 minutes to complete this questionnaire? (If they answer yes, continue. If they answer no, request a more convenient time to administer this questionnaire)

Diagnosis _____ Date: _____/_____/_____

Last Name: _____ First Name: _____

Date of Birth: ____/____/____ Sex: Male / Female

Street Address: _____

City: _____ State: ____ ZIP Code: _____

Home Phone: (____) _____ - _____

What is your job title? _____

If teacher:

What is the age group of your class? _____

Have you been working at this child-care facility since ____/____/____? **YES / NO**

Do you prepare meals (this includes mixing formula) for the children? **YES / NO**

Do you serve meals to the children? **YES / NO**

Did you have a child with diarrhea or vomiting in your class?

YES / NO

/ **DON'T KNOWS**

If

yes:

When did your first case occur? ____/____/_____

Do you change diapers? **YES / NO**

Do you assist with toileting? **YES / NO**

Were there any activities in your class during the period of ___/___/___ to ___/___/___, which are not noted on your roster? **YES / NO**

If yes:

What	Where	When
_____	_____	___/___/___
_____	_____	___/___/___
_____	_____	___/___/___
_____	_____	___/___/___

Did the children in your class play with any animals during the period of ___/___/___ to ___/___/___? **YES / NO**

If yes:

What type?	Where?	When?
_____	_____	___/___/___
_____	_____	___/___/___
_____	_____	___/___/___
_____	_____	___/___/___

When did you start working at the child-care facility (hire on date)? ___/___/___ (mm/dd/yyyy)

Since ___/___/___ have you had diarrhea, vomiting or fever? **YES / NO**
If no, go to question 8.

Did you completely recover? **YES / NO**

If yes, Date of recovery ___/___/___ (mm/dd/yyyy)
Time: _____ am / pm

When did you first become ill? ___/___/___ (mm/dd/yyyy)

Indicate all symptoms:

Diarrhea (more than 3 loose stools in a 24 hour period)	YES / NO
Bloody Diarrhea: YES / NO	Number of stools/24 hours: _____
Stomach ache: YES / NO	Nausea: YES / NO
Vomiting: YES / NO	Muscle aches/pains: YES / NO
Fever/Chills: YES / NO	Highest temperature: _____
Other symptoms? _____	

Did you see a physician? **YES / NO**

If yes,

Name of physician: _____

Phone Number (____) _____ - _____

Were you hospitalized? **YES / NO**

If yes,

Hospital name: _____

Is or was any other family member or close personal contact experiencing any of the above-mentioned symptoms? **YES / NO**

If yes; list names:

Name	Relationship to child	Date of Birth	Onset Date
_____	_____	___/___/___	___/___/___
_____	_____	___/___/___	___/___/___
_____	_____	___/___/___	___/___/___
_____	_____	___/___/___	___/___/___
_____	_____	___/___/___	___/___/___
_____	_____	___/___/___	___/___/___

In the 7 days prior to illness, did you have contact with any of the following animals?

Chicks? **YES / NO** Ducklings? **YES / NO**

Other Birds? **YES / NO** Specify _____

Reptiles (turtles, snakes, lizards, iguanas, etc.) **YES / NO**

Specify _____

Other pets or animals? **YES / NO**

Specify _____

Please indicate location and date of purchase of chicks, ducklings, other birds, or reptiles.

Store _____ City _____

Date: ___/___/___

Excluding activities at the child-care facility, did you visit a farm or petting zoo in the 7 days prior to illness? **YES / NO**

If yes:

Where _____ When ___/___/___ (mm/dd/yyyy)

Where _____ When ____/____/____ (mm/dd/yyyy)

Excluding activities at the child-care facility, did you swim in a lake, river, or pool in the 7 days prior to illness? **YES / NO**

If yes:

Where _____ When ____/____/____ (mm/dd/yyyy)

Where _____ When ____/____/____ (mm/dd/yyyy)

Have you traveled outside the State of Kansas in the 7 days prior to illness?

YES / NO

If yes:

City _____ State _____ Dates: ____/____/____ to ____/____/____

City _____ State _____ Dates: ____/____/____ to ____/____/____

Have you traveled outside the United States of America in the 7 days prior to illness?

YES / NO

If yes:

Country _____ Dates: ____/____/____ to ____/____/____

Country _____ Dates: ____/____/____ to ____/____/____

What is the source of your drinking water (indicate all that apply)?

Public water system? **YES / NO** Name _____

Private well? **YES / NO**

Bottled water? **YES / NO** Name _____

Did you eat in any restaurants in the 7 days prior to illness? **YES / NO**

Please list the restaurants to the best of your recollection:

A) Name _____ City _____ Date ____/____/____

Foods eaten: _____

B) Name _____ City _____ Date ____/____/____

Foods eaten: _____

C) Name _____ City _____ Date ____/____/____

Foods eaten: _____

D) Name _____ City _____ Date ____/____/____

Foods eaten: _____

Did you attend any parties, fairs, carnivals, family/social gatherings, or other events at which food was provided, in the 7 days prior to illness? **YES / NO**

Name/description of event _____ City _____

Date ____/____/____

Foods eaten _____

Indicate which of the following foods that you ate in the 7 days prior to illness. If unsure, answer yes to any foods that you eat routinely. To the best of your recollection, also provide the brand names and the store names and locations where you purchased them.

Raw unpasteurized milk? **YES / NO** Brand _____
Store name _____ City _____

Pasteurized milk? **YES / NO** Brand _____
Store name _____ City _____

Unpasteurized apple cider? **YES / NO** Brand _____
Store name _____ City _____

Ground beef or hamburgers? **YES / NO** Brand _____
Store name _____ City _____

Steaks? **YES / NO** Brand _____
Store name _____ City _____

Chicken? **YES / NO** Brand _____
Store name _____ City _____

Sausage? **YES / NO** Brand _____
Store name _____ City _____

Hot Dogs? **YES / NO** Brand _____
Store name _____ City _____

Lunch Meat? **YES / NO** Brand _____
Store name _____ City _____

Eggs? **YES / NO** Brand _____
Store name _____ City _____

Fresh Juice? **YES / NO** Brand _____
Store name _____ City _____

Fresh Berries? **YES / NO** Brand _____

Store name _____ City _____

Fresh Melon? **YES / NO** Brand _____

Store name _____ City _____

Other Fresh Fruits? **YES / NO** Brand _____

Store name _____ City _____

Lettuce? **YES / NO** Brand _____

Store name _____ City _____

Alfalfa Sprouts? **YES / NO** Brand _____

Store name _____ City _____

Other Fresh Vegetables? **YES / NO** Brand _____

Store name _____ City _____

Other foods, which may have caused your illness? _____

Brand _____ Store name _____

City _____

Comments: _____

Date: _____

Dear _____,

The stool sample for _____, collected on _____ has tested positive for the bacterial pathogen(s):

- E. Coli: O157:H7 Campylobacter Other _____
- Salmonella Shigella

The Following action(s) is necessary:

- None.
- Contact your Local Health Department at _____ for an additional interview.
- Inform your physician that your laboratory tests are positive if he/she is not aware of these results. He/she will decide if antibiotics need to be prescribed. If your physician decides not to treat you with antibiotics please remember that the bacteria may be transmitted to others as long it is present in your stool. This may persist for several weeks even though you may no longer have symptoms. It is important to note that frequent and thorough hand washing will minimize risk of transmission to others.
- You may not work in food handling, direct patient care or occupations involving the care of young children or the elderly until:
- You experience no diarrhea for 24 hours.
 - Your stool specimens test negative 2 consecutive times. (Stool samples should be collected 24 hours apart and no sooner than 48 hours after you last dose of antibiotics.)
 - The local health officer or the Secretary of Health and Environment issues an order allowing you to return to work.
- Your child may not attend school or daycare until:
- He/she experiences no diarrhea for 24 hours.
 - His/her stool specimens test negative 2 consecutive times. (Stool samples should be collected 24 hours apart and no sooner than 48 hours after your last dose of antibiotics.)

Sincerely,

Investigator Name, Title

Phone #

Address Line 1

Address Line 2

City, State Zip Code

Public Health Fact Sheet

Campylobacter

What is *Campylobacter*?

Campylobacter is a bacteria that causes an infectious disease called Campylobacteriosis. Most people who become ill with campylobacteriosis get diarrhea, cramping, abdominal pain, and fever within 2 to 5 days after exposure to the organism. The diarrhea may be bloody and can be accompanied by nausea and vomiting. The illness typically lasts 1 week. Some persons who are infected with *Campylobacter* don't have any symptoms at all. In persons with compromised immune systems, *Campylobacter* occasionally spreads to the bloodstream and causes a serious life-threatening infection.

How do people become infected with *Campylobacter*?

Campylobacter must be swallowed to cause disease. Most cases are associated with handling raw poultry or eating raw or undercooked poultry meat. Even one drop of juice from raw chicken meat can infect a person. One way to become infected is to cut poultry meat on a cutting board, and then use the unwashed cutting board or utensil to prepare vegetables or other raw or lightly cooked foods. The *Campylobacter* organisms from the raw meat can then spread to the other foods. The organism is not usually spread from person to person, but this can happen if the infected person is a small child or is producing a large volume of diarrhea. A person who does not thoroughly wash their hands before handling food can spread the organism to food. It is sometimes spread in daycare centers because young children may not always wash their hands well. Larger outbreaks due to *Campylobacter* are not usually associated with raw poultry but can be related to drinking unpasteurized milk or contaminated water. Animals can also be infected, and some people have acquired their infection from contact with the infected stool of an ill dog or cat or farm animal.

What kinds of food are most likely to be contaminated?

Campylobacter is most commonly found in uncooked food products from animals, including: poultry, unpasteurized milk and occasionally by raw shellfish.

How is campylobacteriosis diagnosed and treated?

Your doctor, nurse, or health center must send your stool sample to a laboratory. Most people get well without any treatment, but some people can get very sick. People who get very sick for longer than usual or whose work or living situations make it likely that their infection will spread to others may be treated with antibiotics.

This fact sheet is for information only and is not intended for self-diagnosis or as a substitute for consultation. If you have any questions about the disease described above or think that you may have an infection, consult with your healthcare provider. This fact sheet is based on the Centers for Disease Control and Prevention's Health and Safety topic fact sheets.

How can you prevent campylobacteriosis?

The two most important things to remember are that you will only be sick if you swallow the bacteria and that thorough cooking will kill it. Be extra careful when using food products from animals. Follow these tips below to prevent disease:

- Always wash your hands thoroughly with soap and water before eating, before handling food, after using the toilet, after changing diapers, and after handling your pets or cleaning up after them.
- Cook all food from animal sources thoroughly, especially poultry. If the meat or poultry is still pink in the center, it is not thoroughly cooked.
- Use only clean utensils, dishes and cutting boards to prepare food that is already cooked or will be eaten raw. Anything you use to prepare raw meat, seafood, or poultry, including your hands and the table or counter top, should be washed thoroughly before you touch any other food.
- Do not eat raw shellfish or unpasteurized dairy products. Do not drink unpasteurized milk or eat anything made from it.
- Do not drink from untreated water supplies even when camping or hiking.
- If you are taking care of someone who has campylobacteriosis or diarrhea scrub your hands with plenty of soap and water after cleaning the bathroom, helping the person use the toilet, or changing diapers, soiled clothes or soiled sheets.
- If you or your child has persistent diarrhea or if the diarrhea is severe, call your doctor or health center for advice.

Are there any restrictions for people with campylobacteriosis?

Yes, since *Campylobacter* is found in the feces, people with diarrhea should not go to school or work. People may return to school or work when they no longer have diarrhea. Children who attend daycare should not attend daycare until diarrhea stopped. If more than one person is ill at the daycare, ill children and staff may be asked to stay at home until diarrhea has stopped for at least 24 hours. In order to protect the public, workers at food-related businesses who have diarrhea must stay out of work until they no longer have diarrhea for 24 hours. Workers in schools, residential programs, daycare and health facilities that feed, give routine care or dispense medications to clients should be restricted from direct care activities until diarrhea has stopped for 24 hours.

Where can you get more information?

- Your Local Health Department
- Kansas Department of Health and Environment, Epidemiologic Services
- Section (877) 427-7317
- <http://www.cdc.gov/health/default.htm>
- Your doctor, nurse, or local health center

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