Cholera and Other Vibrio Illness

Investigation Guideline

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Version 09/2009

Cholera and Other Vibrio Illness
Disease Management and Investigative Guidelines

CASE DEFINITION (CDC 1996) – Cholera (*Vibrio cholerae)*

Clinical Description for Public Health Surveillance:
- An illness characterized by diarrhea and/or vomiting; severity is variable.

Laboratory Criteria for Case Classification:
- Isolation of toxigenic (i.e., cholera toxin-producing) *Vibrio cholerae* O1 or O139 from stool or vomitus, or
- Serologic evidence of recent infection.

Case Classification:
- **Confirmed:** A clinically compatible illness that is laboratory confirmed.

Note: Illnesses caused by strains of *V. cholerae* other than toxigenic *V. cholerae* O1 or O139 should be reported as "*Vibrio Spp. (Not V. cholerae)"*. The etiologic agent of a case of cholera should be reported with the serotype indicated – as either *V. cholerae* O1 or *V. cholerae* O139. Only confirmed cholera cases are reported to CDC by state health departments.

CASE DEFINITION (CDC 2007) – Vibriosis (Non-cholera *Vibrio spp.*)

Clinical Description for Public Health Surveillance:
- An infection of variable severity characterized by diarrhea and vomiting, primary septicemia, or wound infections. Asymptomatic infections may occur, and the organism may cause extraintestinal infections.

Laboratory Criteria for Case Classification:
- Isolation of *Vibrio spp.* other than toxigenic *Vibrio cholerae* O1 or O139 from a clinical specimen.

Case Classification:
- **Confirmed:** A case that meets the laboratory criteria for diagnosis.
- **Probable:** A clinically-compatible symptomatic case that is epidemiologically linked to a confirmed case.

Note: Species identification and, if applicable, serotype designation (i.e., *Vibrio cholerae* non-O1/non-O139) should be reported.

Additional Comments:
- CDC reports all confirmed cholera cases diagnosed in the United States to the World Health Organization.
- In January 2007, the Council of State and Territorial Epidemiologists (CSTE) recommended that all *Vibrio species* be nationally notifiable. While non-cholera vibriosis is not specifically listed as a reportable disease in Kansas, the occurrence of a *Vibrio* infection is rare enough to warrant reporting to the state as a "disease unusual in incidence." [K.A.R. 28-1-2 (52)]

LABORATORY ANALYSIS

Specimens or isolates are not required to be sent to the State Public Health Laboratory (KHEL); but they are equipped to test for *V. cholerae* or other non-cholera *Vibrio spp., if* requested.

- For testing to occur at the state laboratory, the Bureau of Surveillance and Epidemiology (BSE) must be notified at 1-877-427-7317.
- Specimens: Fresh stool or vomitus in Cary-Blair or *Vibrio* isolates sent on nutrient agar or other growth supporting medium.
- For shipment to KHEL use:
  - A KHEL Enteric mailer for stool or vomitus specimens, or
  - An IDS (Infectious Disease Shipper) for isolates.
- ***Special request from the CDC:*** KHEL will forward *V. cholerae* and *V. parahaemolyticus* isolates to the CDC Foodborne and Diarrheal Diseases Laboratory for characterization.

For additional information concerning collection or sample transport, call (785) 296-1620 or refer to guidance at http://www.kdheks.gov/labs/lab_ref_guide.htm

EPIDEMIOLOGY

In the United States, cholera was prevalent in the 1800s but has been virtually eliminated by modern sewage and water treatment systems. However, as a result of improved transportation, more persons from the United States travel to parts of Africa, Asia, or Latin America where epidemic cholera is occurring. U.S. travelers to areas with epidemic cholera may be exposed to the cholera bacterium. In addition, travelers may bring contaminated seafood back to the United States; foodborne outbreaks have been caused by contaminated seafood brought into this country by travelers. There has been a modest increase in imported cases since 1991 related to ongoing epidemic that began in 1991. Since 1995, over 80% of reported cholera cases have occurred in Africa.

Non-01/non-0139 *V. cholerae* is associated with 2-3% of cases of diarrhea illness in tropical developing countries. Isolation rates are higher in coastal areas. *V. parahaemolyticus* has been reported in sporadic cases and common-source outbreaks associated with undercooked seafood. Raw or undercooked clams or oysters are often implicated and cases occurring primarily in warm months. *V. vulnificus* is the most common agent of serious infections caused by Vibrio in the U.S. with 0.5 cases per 100,000 people living in coastal areas occurring annually.

Infection with other Vibrio species has been associated with sporadic cases of diarrheal disease and rarely with outbreaks.

DISEASE OVERVIEW

A. Agent:

Cholera: *Vibrio cholerae* serogroup O1 or O139 that produce cholera enterotoxin. Non-cholera vibriosis: *V. cholerae* other then 01 and 0139, as well as other *Vibrio* species, such as *V. parahaemolyticus* and *V. vulnificus*.

B. Clinical Description:

Cholera is an acute enteric disease characterized in severe form by sudden onset of profuse painless watery stools, nausea and vomiting. Untreated cases may experience rapid dehydration, acidosis, circulatory collapse, hypoglycemia and renal failure. With severe dehydration, death may occur within a few hours and the case-fatality rate may exceed 50%; with proper treatment, the case-fatality rate is < 1%. Most cases are asymptomatic or cause mild diarrhea; asymptomatic carriers can transmit infection. Non-01/non-0139 *V. species* cause milder forms of gastroenteritis, wound infections and in rare cases primary septicemia. In persons with underlying medical conditions, especially liver disease, *V. vulnificus* can cause bloodstream infections characterized by fever, chills, decreased blood pressure, blistering skin lesions, and often death.

C. Reservoirs:

Brackish, warm marine waters and estuaries are a natural environment for all *Vibrio spp.* Non-01/non-0139 *V. cholerae* can also be found in fresh water lakes. Humans are the only documented natural host for *Vibrio cholerae* 01 and 0139; however, all *Vibrio spp*. can attach to the chitin-containing shells of crabs, shrimps, and other shellfish. *Vibrio spp.* other than *Vibrio cholerae* 01 and 0139 can be found in fish and shellfish.

D. Mode(s) of Transmission:

Ingestion of food or water contaminated directly or indirectly with feces or vomitus of infected persons (e.g., sewage). Large epidemics often related to fecal contamination of water supplies or street vended foods. Eating raw or undercooked shellfish that are naturally contaminated can result in transmission. Wound infections may occur when wounds or soft tissues are exposed to warm seawater.

E. Incubation Period:

Cholera: Range few hours to 5 days; most commonly, 2-3 days.
Non-01/non-0139 *V. cholerae*: Range 5.5 to 96 hours, usually 12-24 hours.
V. parahaemolyticus: Range 4 to 30 hours, usually 12-24 hours.
V. vulnificus: Usually 12-72 hours after eating raw seafood.

F. Period of Communicability:

For *V. cholerae* as long as shed in stools. Antibiotics are effective and may shorten the period of communicability. Chronic biliary infection, lasting for years, has been observed in adults and is associated with intermittent shedding in their stool. Other *Vibrio species* are not transmitted person to person.

G. Susceptibility and Resistance:

Variable. Infection with serogroup O1 may confer limited immunity against future O1 infections.

H. Treatment:

Oral or parenteral rehydration therapy for dehydration and electrolyte imbalance. Antimicrobial therapy for rapid eradication of vibrios and reduction of the duration of diarrhea and the requirement for fluid replacement.

INVESTIGATOR RESPONSIBILITIES

1) Use current case definition, to confirm diagnosis with the medical provider.
2) Conduct case investigation to identify potential source of infection.
3) Conduct contact investigation to locate additional cases and/or contacts.
4) Identify whether the source of infection is major public health concern,
- Example: commercially available seafood.

5) Initiate control and prevention measures to prevent spread of disease.
6) Report all confirmed, probable and suspect cases to the KDHE at 877-427-7317 within 4 hours of the initial report.
7) Complete and report all information requested on the General Investigation Form and Vibrio Supplemental Form.
8) Use 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 reported or ordered testing of the case.
   - Obtain information from the provider or medical chart.
     - If patient hospitalized, obtain medical records, including admission notes, progress notes, lab report(s), and discharge summary.
   - Note symptoms: fever (note maximum temperature); nausea, vomiting, diarrhea (not maximum stool number / 24 hours); blood in stools; abdominal cramps; headache; muscle pain; shock; cellulitis or bullae (anatomical site)
     - Record onset date and time of first symptoms
     - Record duration of illness in days
   - Examine the laboratory testing that was done, especially:
     - Note any other organisms isolated from the specimen that yielded *Vibrio.*
     - Identify if specimen was forwarded to state lab for confirmation.
     - For *V. cholerae* 01 and 0139, note serotype, biotype and any toxin test
   - Collect case's demographic data and contact information (birth date, county, sex, race/ethnicity, occupation, address, phone number(s))
   - Record hospitalizations: location, admission and discharge dates
   - Note complications. (i.e., amputation, skin graft)
   - Record outcomes: survived or date of death
   - Record antibiotics prescribed, date started and date ended.
   - Note pre-existing conditions: alcoholism; diabetes; peptic ulcer; heart disease or failure; gastric surgery (type) hematologic, liver or renal disease (type); immunodeficiency; disease; malignancy
2) Interview the case to determine source and risk factors:
   - Focus on incubation period 7 days prior to illness onset.
   - Examine exposure to others with diarrheal illness.
   - Examine travel outside of home state: location, date entered and exit.
   - Specify seafood that was eaten and note if undercooked or raw. (clams, crab, lobster, mussels, oysters, shrimp, crawfish, other shellfish or fish)

- For skin exposure: information on exposure to body of water (note type) or drippings from raw seafood or other contact with marine or fresh water life. Record activity involved with exposure; date and time of exposure and if there was a pre-existing wound or a wound occurred during the exposure.
- For *V. cholerae* 01 or 0139: collect specific information related to exposure 4 days before illness onset:
  - Raw or cooked seafood or street-vended food
  - Other person(s) with cholera or cholera-like illness
  - Foreign travel (if yes to foreign travel review the type of education received on cholera prevention and the reason for travel)
- For implicated seafood, a detailed seafood investigation will occur. The agency involved in traceback and inspections will depend on the seafood source. For further information refer to the Foodborne Illness and Outbreak Manual. The local health department will assist the agency performing the traceback by collecting the following for each type of seafood:
  - Type of seafood, date and time consumed and amount consumed
  - If patient ate multiple seafoods; note why a specific seafood was investigated.
  - How was seafood prepared?
  - Where seafood was obtained; record contact information on the source.
- Collect information from case for the Contact Investigation. (See below).

3) Investigate epi-links among cases (clusters, household, co-workers, etc).
   - Highly suspected sources should be investigated.
   - For suspected outbreaks or possible undetected community transmission refer to Managing Special Situations section.

Contact Investigation

Contacts are anyone exposed to the implicated food or body of water.

- Individuals living in the same household are at low risk from exposure to *V cholerae* and are not considered at risk from other *Vibrio spp.*
  - Only when there is a high probability of fecal exposure would such individuals be considered contacts of *V. cholerae*.
- High risk contacts at risk for developing severe disease are all children, immunocompromised people, and people with chronic liver disease.

1) Create a line listing of primary contacts with contact information.
2) Collect on any information on symptoms.
3) Note any high risk contacts.
4) Follow-up symptomatic contacts as suspect cases. A contact of non-01 and non-0139 *Vibrio,* meeting the clinical case definition is a probable case.
5) Institute control measures for school or day-care contacts as indicated under Isolation, Work and Daycare Restrictions.
6) Follow-up with contacts (especially high risk contacts) as recommended under Contact Management.

Isolation, Work and Daycare Restrictions

K.A.R 28-1-6 for Cholera:

- Enteric precautions shall be followed for the duration of acute symptoms.

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.
- Workers in schools, residential programs, daycare and healthcare facilities, who feed, give mouth care or dispense medications to clients, are subject to the same restrictions as food handlers.

1) Restrict food handlers and workers in schools, residential programs, daycare and healthcare facilities, who feed, give mouth care or dispense medications from handle food, giving mouth care or dispensing medications until symptoms have resolved for 24 hours.
2) Asymptomatic but infected food handlers and hospital employees need not be excluded from work if proper personal hygiene measures, including hand hygiene, are maintained.
3) Children with diarrhea may not attend daycare or school until symptoms have resolved.

Case Management

Case management is not necessary beyond assurance with compliance with any work or school restrictions.

Contact Management

1) For *V. cholerae,* recommend that household contact with high probability of fecal exposure receive doxycycline, tetracycline, ciprofloxacin, ofloxacin, or trimethoprim-sulfamethoxazole within 24 hours of identification of the index case.
2) For implicated seafood or bodies of water, work with cooperating agencies to ensure contacts are notified and protected against further exposure.
3) Provide education to susceptible contacts on incubation period and symptoms of disease and precautions to take if symptoms develop.

Education

1) Provide education that includes basic information about the disease and its complications and ways to prevent transmission of illness.
2) Instruct cases on the necessary enteric precautions.
3) Counsel contacts on the period of time to watch for signs or symptoms and to seek medical care if symptoms develop.
4) Instruct cases and contacts to be aware of the risk that infection poses to children, immunocompromised people, and people with chronic liver disease and that those individuals should avoid consuming raw or undercook seafood.

MANAGING SPECIAL SITUATIONS

A. Outbreak Investigation:

1) Outbreak definition: Two or more cases with a common serogroup within a 3-month timeframe occurring in a defined population or community.
2) Notify KDHE immediately, 877-427-7317.
3) Active case finding will be an important part of any investigation.
4) Recommendations will be made based on the KDHE Foodborne Illness and Outbreak Manual: www.kdheks.gov/epi/download/kansas_foodborne_illness_manual.pdf

B. Bioterrorism / Intentional Contamination Situation:

Vibrio cholerae is considered a Category B bioterrorism agent in that it is a food and water safety threat. If the natural etiology cannot be readily established by a prompt and vigorous investigation, the situation should be considered to be a bioterrorist act until proven otherwise. If suspected:

1) Notify local law enforcement and state public health officials.
2) Implement "Chain of Custody" procedures for all samples collected, as they will be considered evidence in a criminal investigation.
3) Work to define population at risk which is essential to guide response activities. Public health authorities will play the lead role in this effort, but must consult with law enforcement, emergency response and other professionals in the process. The definition may have to be re-evaluated and redefined at various steps in the investigation and response.
4) Once the mechanism and scope of delivery has been defined, identify symptomatic and asymptomatic individuals among the exposed and recommend treatment and/or chemoprophylaxis.
5) Establish and maintain a detailed line listing of cases, suspect cases, exposed, and potentially exposed individuals with accurate identifying and locating information as well as appropriate epidemiological information.

Safety Considerations:

- Food and water are the most likely mechanism of delivery.
- No isolation or quarantine measures are indicated beyond standard enteric precautions.

DATA MANAGEMENT AND REPORTING TO THE KDHE

A. Organize, collect and report data with the General Investigation Form(s) and Vibrio Supplemental Form.

- Report as "Vibrio spp. (not V. cholerae)" or "Cholera (Vibrio cholerae)".

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

- At a minimum, data collected during the investigation that helps to confirm or classify a case.
- All information collected on the General Investigation Form and Supplemental form(s).

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: www.cdc.gov/ncphi/disss/nndss/casedef/case_definitions.htm

D. **Kansas Regulations/Statutes Related to Infectious Disease:** www.kdheks.gov/epi/regulations.htm

E. **KDHE Foodborne Illness and Outbreak Manual:** http://www.kdheks.gov/epi/download/kansas_foodborne_illness_manual.pdf

F. **KDHE Foodborne Illness Resources:** http://www.kdheks.gov/epi/foodborne.htm

G. **Additional Information (CDC):** www.cdc.gov/health/default.htm

General Investigation Form(s)

Kansas Disease Investigation Guidelines

General Investigation Form

Investigation Information

Case Type: ☐Human Case ☐Non-human Case ***Disease Name:*** _____

Classification: ☐Suspect ☐Probable ☐Confirmed ***KS-EDSS Investigation ID:*** _____

Outbreak: ☐Yes ☐No ***Outbreak Name:*** _____ ***Outbreak #:*** _____

Onset Date: _____ ***Diagnosis Date:*** _____ ***Report Date:*** _____

Assigned to (Investigator): _____ ***Patient Died:*** ☐Yes ☐No ☐Unknown

Patient Information

Name Type: ☐Default/Common ☐Legal ☐Maiden ☐Nickname

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

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

Evening Phone #: _____ ***Daytime Phone #:*** _____

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

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:*** _____

Reporting Source

Title: _____ *Last Name:* _____ *First Name:* _____

Facility: _____ *County:* _____

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

Phone #: _____ *E-mail:* _____

Primary or Attending Physician

Title: _____ *Last Name:* _____ *First Name:* _____

Facility: _____ *County:* _____

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

Phone #: _____ *E-mail:* _____

Hospital Information

Hospitalized: ☐Yes ☐No *Patient Status Date:* _____

Hospital Name: _____ *Hospital City:* _____

Date Hospitalized: _____ *Number of Days Hospitalized:* _____

Notes

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)

Supplemental Form

Cancel Form

Cholera and Other Vibrio Illness Supplemental Form

Kansas Department of Health

Epidemiologic Case History

* indicates required fields

Case Type*
○ *Human Case* ○ *Non Human Case*

Classification*
○ *Confirmed* ○ *Not a Case* ○ *Probable* ○ *Suspect* ○ *Deleted* ○ *Unknown*

Supplemental Form Status
○ *Not Done* ○ *Form Complete* ○ *Form in Progress* ○ *Form Approved* ○ *Form Sent to CDC*

Report Date*
mm/dd/yyyy

Patient Demographic Information

* indicates required fields

Last Name*	First Name*	Middle Name	Name Type*	Age

Age Unit
○ *Days* ○ *Weeks* ○ *Months* ○ *Years*

Date of Birth
mm/dd/yyyy

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

Evening Phone
###-###-####

Daytime Phone
###-###-####

Occupation

Person Providing Report

Name of Reporting Facility*

Cholera and Other Vibrio Illness Surveillance Report

Complete the following information if the isolate is Vibrio cholerae O1 or O139:

Biotype
○ *El Tor* ○ *Classical* ○ *Not Done* ○ *Unknown*

Toxigenic
○ *Yes* ○ *No* ○ *Unknown*

If Yes, toxin positive by:
(Check all that apply)
☐ *ELISA* ☐ *Latex agglutination* ☐ *Other (specify):*_____

Clinical Information

Date of onset of first symptoms
mm/dd/yyyy

Time of onset of first symptoms
hh:mm - use military time

Symptoms and signs:

Fever? ○ *Yes* ○ *No* ○ *Unknown*

If Yes, specify highest temperature:

Scale: ○ *Fahrenheit* ○ *Celsius*

Nausea? ○ *Yes* ○ *No* ○ *Unknown*

Vomiting? ○ *Yes* ○ *No* ○ *Unknown*

Diarrhea? ○ *Yes* ○ *No* ○ *Unknown*

If Yes, max no. stools/24 hours:

Visible blood in stools? ○ *Yes* ○ *No* ○ *Unknown*

Abdominal cramps? ○ *Yes* ○ *No* ○ *Unknown*

Headache? ○ *Yes* ○ *No* ○ *Unknown*

Muscle pain? ○ *Yes* ○ *No* ○ *Unknown*

Cellulitis? ○ *Yes* ○ *No* ○ *Unknown*

If Yes, site:

Bullae? ○ *Yes* ○ *No* ○ *Unknown*

If Yes, site:

Shock?
(systolic BP less than 90)
○ *Yes* ○ *No* ○ *Unknown*

Other symptom(s):

Total duration of illness (days):

Any sequelae?
(e.g. amputation, skin graft)
○ *Yes* ○ *No* ○ *Unknown*

If Yes, describe

Did patient take an antibiotic as treatment for this illness
○ *Yes* ○ *No* ○ *Unknown*

If Yes, please complete the following table:

Name(s) of Antibiotic(s)	Date Began	Date Ended
	mm/dd/yyyy	mm/dd/yyyy

Pre-existing Conditions

Alcoholism? ○ *Yes* ○ *No* ○ *Unknown*

Diabetes? ○ *Yes* ○ *No* ○ *Unknown*

Diabetes on insulin? ○ *Yes* ○ *No* ○ *Unknown*

Gastric surgery? ○ *Yes*_____ ○ *No* ○ *Unknown*

Heart disease? ○ *Yes* ○ *No* ○ *Unknown*

Heart failure? ○ *Yes* ○ *No* ○ *Unknown*

Hematologic disease? ○ *Yes*_____ ○ *No* ○ *Unknown*_____

Immunodeficiency? ○ *Yes* ○ *No* ○ *Unknown*

Liver disease? ○ *Yes*_____ ○ *No* ○ *Unknown*

Malignancy? ○ *Yes*_____ ○ *No* ○ *Unknown*

Peptic ulcer? ○ *Yes* ○ *No* ○ *Unknown*

Renal disease? ○ *Yes*_____ ○ *No* ○ *Unknown*

Other? ○ *Yes (specify):*_____ ○ *No*

Clinical Information cont.

Was the patient receiving any of the following treatments or taking any of the following medications in the 30 days BEFORE the Vibrio illness began?

Treatment Type	Received	Specify Treatment and Dates
	Y=Yes N=No UNK=Unknown	
Antibiotics		
Chemotherapy		
Radiotherapy		
Systemic steroids		
Immunosuppressants		
Antacids		
H2-Blocker or other ulcer medication (e.g., Tagamet, Zantac, Omeprazole)		

Epidemiologic Information

Specify which of the following seafoods were eaten by the patient in the 7 DAYS before illness began (if multiple times, most recent meal):

Type of Seafood	Consumed	Date Consumed	Any eaten raw
	Y=Yes N=No UNK=Unknown	mm/dd/yyyy	Y=Yes N=No UNK=Unknown
Clams			
Crab			
Lobster			
Mussels			
Oysters			
Shrimp			
Crawfish			
Other shellfish			
Fish			

If other shellfish, specify:	If fish, specify:

Epidemiologic Information cont.

In the 7 days before illness began, was the patient's skin exposed to any of the following?

Type of Exposure	Exposed	Exposure Date	Time	AM or PM	Exposure Location
		mm/dd/yyyy	(hh:mm)		
Fresh/Salt/Brackish body of water					
Drippings from raw or live seafood					
Other marine/freshwater life					

If yes to any of the above, answer each:

Handling/cleaning seafood? ○ *Yes* ○ *No* ○ *Unknown*

Swimming/diving/wading? ○ *Yes* ○ *No* ○ *Unknown*

Walking on beach/shore/fell on rocks/shells? ○ *Yes* ○ *No* ○ *Unknown*

Boating/skiing/surfing? ○ *Yes* ○ *No* ○ *Unknown*

Construction/repairs? ○ *Yes* ○ *No* ○ *Unknown*

Bitten/stung? ○ *Yes* ○ *No* ○ *Unknown*

Other? ○ *Yes (specify):*_____ ○ *No*

If skin was exposed to water, indicate type:
(Check all that apply)
☐ *Salt* ☐ *Fresh* ☐ *Brackish* ☐ *Other (specify):*_____ ☐ *Unknown*

Additional comments

If skin was exposed, did the patient sustain a wound during this exposure, or have a pre-existing wound?

○ *Yes, sustained a wound* ○ *Yes, had a pre-existing wound* ○ *Yes, uncertain if wound new or old* ○ *No* ○ *Unknown*

If yes, describe how wound occurred and site on body:
Note: Skin bullae that appear as part of the acute illness should be recorded in Clinical Information section, only.

If isolate is Vibrio cholerae O1 or O139, please answer the following questions:

If the patient was infected with V. cholerae O1 or O139, to which of the following risks was the patient exposed in the 4 DAYS before illness began:

Raw seafood? ○ *Yes* ○ *No* ○ *Unknown*

Cooked seafood? ○ *Yes* ○ *No* ○ *Unknown*

Foreign travel? ○ *Yes* ○ *No* ○ *Unknown*

Other person(s) with cholera or cholera-like illness? ○ *Yes* ○ *No* ○ *Unknown*

Street-vended food? ○ *Yes* ○ *No* ○ *Unknown*

Other? ○ *Yes (specify):*_____ ○ *No*

Has the patient ever received a cholera vaccine? ○ *Yes* ○ *No* ○ *Unknown*

If yes, specify type most recently received: ○ *Oral* ○ *Parenteral* ○ *Unknown*

If yes, specify the most recent date:
mm/dd/yyyy

If domestically acquired illness due to any Vibrio species is suspected to be related to seafood consumption, please complete Seafood Investigation section

Seafood Investigation Information

If domestically acquired illness due to ANY Vibrio species is suspected to be related to seafood consumption, please complete this section.

For each seafood ingestion investigated, please complete as many of the following questions as possible. Include information on additional seafood types that were ingested and investigated in the 'Comments or Additional Information' field.

Type of seafood (e.g., clams):

Amount consumed

Date Consumed
mm/dd/yyyy

Time consumed
(hh:mm)

AM or PM
○ *AM* ○ *PM*

If the patient ate multiple seafoods in the 7 days before onset of illness, note why this seafood was investigated (e.g., consumed raw, implicated in outbreak investigation).

How was this fish or seafood prepared?
○ *Raw* ○ *Baked* ○ *Boiled* ○ *Broiled* ○ *Fried* ○ *Steamed* ○ *Other (specify):*_____ ○ *Unknown*

Name of restaurant, oyster bar, or food store (include address and telephone number):

Seafood Investigation Information II

If domestically acquired illness due to ANY Vibrio species is suspected to be related to seafood consumption, please complete this section.

For each seafood ingestion investigated, please complete as many of the following questions as possible. Include information on additional seafood types that were ingested and investigated in the 'Comments or Additional Information' field.

Type of seafood (e.g., clams):

Amount consumed

Date Consumed
mm/dd/yyyy

Time consumed
(hh:mm)

AM or PM
○ *AM* ○ *PM*

If the patient ate multiple seafoods in the 7 days before onset of illness, note why this seafood was investigated (e.g., consumed raw, implicated in outbreak investigation).

How was this fish or seafood prepared?
○ *Raw* ○ *Baked* ○ *Boiled* ○ *Broiled* ○ *Fried* ○ *Steamed* ○ *Other (specify):*_____ ○ *Unknown*

Name of restaurant, oyster bar, or food store (include address and telephone number):

Cancel Form

Public Health Fact Sheet
Cholera

What is cholera?
Cholera is a diarrheal disease caused by the bacteria Vibrio cholera. The infection is often mild or without symptoms, but sometimes it may be severe.

What are the symptoms?
Symptoms range from mild to severe diarrhea, vomiting and dehydration. In severe cases dehydration, shock, kidney failure and death may occur. Symptoms may occur within hours and up to 5 days after initial exposure.

How is cholera spread?
Cholera is spread eating or drinking food or water that has been contaminated with fecal material. Cases of cholera that occur in the United States are usually among persons who have traveled to places where cholera is common.

How is it diagnosed?
Cholera is diagnosed by finding the bacteria in a stool sample that is sent to a laboratory.

How is cholera treated?
Cholera is treated by the immediate replacement of the fluid and salts lost through diarrhea often through the use of oral rehydration solutions; however, severe cases may also require intravenous fluid replacement. Antibiotics shorten the course and reduce the severity of the illness but are not as important as rehydration.

How can you prevent cholera?
The risk of getting cholera when traveling depends on the area you visit. Travelers in less economically developed countries are at greater risk than those traveling in developed areas. In most developed countries the risk is almost nonexistent. In Africa, South and Central America, and the Middle and Far East, sanitation and hygiene vary considerably and the risk for cholera may be higher. Avoid traveling to areas with known outbreaks of cholera.

In addition, travelers should observe the following recommendations:

- Eat foods that have been thoroughly cooked and are still hot and steaming.
- Avoid raw vegetables and fruits that cannot be peeled or washed.
- Avoid foods and beverages from street vendors.
- Drink only bottled water and carbonated beverages.
- Ask for drinks without ice unless the ice is made from bottled or boiled water.

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 topic fact sheets.

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Are there any health regulations for people cholera?
In order to protect the public, food handlers with diarrhea, fever or vomiting must be restricted from handling food, or be excluded from work if they serve people who are at greater risk from complications from those types of illnesses, until symptoms have resolved for 24 hours. Workers in schools, residential programs, daycare and healthcare facilities, who feed, give mouth care or dispense medications to clients, are subject to the same restrictions as food handlers.

Where can you get more information?

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

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