



## Post Exposure Plan for *Vibrio cholerae*

### Background Information:

Cholera, caused by the Gram-negative rod bacterium *Vibrio cholerae*, is rare in the United States but an estimated 1.3 to 4 million people around the world are infected each year. The most common mode of transmission is ingestion of fecal matter in contaminated food or water. Symptoms include watery diarrhea, vomiting, and abdominal cramps. While most people develop mild symptoms, approximately 10% may have severe symptoms leading to rapid loss of body fluids that left untreated could lead to death.

Laboratory-acquired infections are presumed to occur via exposure to splashes or aerosolized materials contaminated with bacteria particles. Also, via ingestion with bacteria-contaminated hands. The infectious dose ranges between  $10^6$  and  $10^{11}$  ingested cells but depends on the gastric acidity in the individual.

Cholera is a reportable illness. The State of Colorado requires reporting from both physicians and laboratories in all instances of infection with *Vibrio cholerae*.

### Primary hazards in the laboratory :

Creation of splashes or aerosols, exposure to mucous membranes, ingestion, and exposure to contaminated sharps.

### Acceptable disinfectants:

*Vibrio cholerae* is susceptible to 2-5% phenol, 1% sodium hypochlorite, 70% ethanol, 4% formaldehyde, 2% glutaraldehyde, and 0.16% iodine.

### Exposure controls and personal protection:

*Vibrio cholerae* is a Risk Group 2 organism. BSL-2 practices, containment equipment, and facilities are required when working with materials known or suspected of containing this agent.

Personal protective equipment such as lab coats and gloves must be worn when handling infected or potentially infected materials. Eye protection must be used when there is a known or potential risk of generating splashes or aerosols.

Procedures that may generate aerosols or splashes should be conducted in a certified biosafety cabinet.



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Personnel should wash their hands frequently while working in and before leaving the laboratory. Personal items including water bottles, cell phones, car keys, etc., should be stored in such a way as to avoid contamination and should be accessed only when the laboratory exercise is completed, lab coats and gloves are removed, and hands are washed.

The Principal Investigator (PI), or their designee, must ensure that all personnel are adequately trained in safe laboratory practices, universal precautions, and proper surface and equipment disinfection before initiating any work with this agent. The PI must also ensure that all personnel are aware of the signs and symptoms of a potential infection with *V. cholerae* with an emphasis on the effects on the immunocompromised, young adults or anyone with an underlying condition that may predispose them to more severe disease.

## **At risk populations:**

Individuals with achlorhydria (the absence of hydrochloric acid in digestive stomach juices), blood type O, and chronic medical conditions are more likely to have severe disease from cholera and suffer poor outcomes.

## **Immediate Action by Route of Exposure:**

**Needlestick, Animal Bite, Laceration:** Wash area thoroughly with soap and running water. Do not apply disinfectant to the skin.

**Mucous membranes (Eyes, nose, mouth):** Flush the eyes for 10-15 minutes if eyes have been exposed to splash or spray containing bacteria. Rinse out mouth, without swallowing, after any exposure.

## **After First Aid:**

**Suspected infections related to research exposures must be reported to the University of Colorado, Boulder's Biosafety Officer at 303-492-2817. Please see below for complete instructions related to suspected research exposure. Treating medical providers should be informed of the possibility of *Vibrio cholerae* infection. It usually takes 2 -3 days for symptoms to appear after cholera bacteria ingestion, but time can range from a few hours to 5 days. Symptomatic individuals are recommended to be tested.**

## **Post-exposure Prophylaxis:**

Your health care provider can recommend appropriate treatment which usually involves fluid and salt replacement. Antibiotic treatment can reduce the duration of the illness and is indicated for severe cases.

## **Symptoms of infection in adults:**

- Watery diarrhea



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- Vomiting
- Leg cramps
- Restlessness or irritability

## After First Aid – Treatment and Reporting:

**University of Colorado Boulder: Procedures for Work-Related Injuries or Illness, Including Animal Bites, Severe Allergic Symptoms, and Sharps Exposures.**

It is the policy of the University of Colorado at Boulder (UCB) that all incidents that result in an injury or severe illness to faculty, staff or students be appropriately documented and reported. If a work-related incident, accident, injury, or illness occurs:

### a) Medical Treatment

- In case of life or limb-threatening emergency call 911** or go immediately to the nearest emergent or urgent care facility. Immediately administer appropriate first aid, including thoroughly washing any wounds or exposed areas with soap and water, if possible.
- If you are an employee of the University and you need non-emergency care** for a work-related illness or injury that has occurred during regular weekday working hours, you must be treated at one of the UCB Designated Medical Providers (DMPs: shown below). **Boulder Community Hospital Emergency Department can rapidly test for work-related infectious disease or potential biological exposures; all other DMPs may not have this rapid capability.** Testing can be done on the exposed personnel; it may be difficult to test any source patient or sample at the DMP.
- After hours or while traveling**, go to the nearest urgent or emergent care facility.
- Sharps injuries** that include exposure to human blood, body fluids, tissues, tissue culture cells are injuries with a potential for transmitting bloodborne pathogens. Prompt evaluation and treatment is necessary for these injuries. (go to Boulder Community Hospital Emergency Department)

### b) Reporting

- Report the work-related injury or illness to your supervisor immediately. You or your supervisor should notify the Biosafety Officer at 303-492-2817 or at [Cher.Masini@colorado.edu](mailto:Cher.Masini@colorado.edu). (The BSO may confer with IACUC administrator, veterinarian, or Occupational Health RN.)
- You must file a worker's compensation injury report form **within 4 days of the work-related injury** / exposure or illness onset. Report the incident on the URM website and use the on-line reporting form.
- Sharps injuries must be reported on the URM's needle stick exposure report form.



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d. All injury reporting forms can be found at the URM's website at <https://www.cu.edu/risk/file-claim>

**c) Eligibility (who is eligible to be seen by UCB Designated Medical Providers?)**

a. All UCB employees, paid UCB staff, graduate students receiving a traineeship or stipend administered by UCB, undergraduate work-study students and paid undergraduate student assistants are eligible to be seen by UCB DMPs. If you are an UCB employee and you visit your regular primary care provider for a work-related injury and your visit is coded as a work-related injury, your primary insurance may not cover the cost of your visit or treatment with your primary care provider.

***Some individuals are not covered by UCB Worker's Compensation:*** All visiting or resident scholars who do not receive payment via UCB (e.g., Howard Hughes Medical Institute Fellows) must follow the work-related exposure / illness or injury protocol outlined by their parent institution or outside funding source. Contract or consulting employees are also not covered by UCB Worker's Compensation; they need to follow the work-related exposure / illness or injury protocols established by their parent institution or consult with their personal health care provider. Volunteers, contract employees and students not paid by UCB are **not** covered by UCB Worker's Compensation and should be seen by their personal health care provider. If you are a student with a Wardenburg Health care plan, post-exposure lab tests are available and covered.

**d) Payment and questions:**

a. All bills from medical providers must be sent to University Risk Management:

University Risk Management ( <https://www.cu.edu/risk/file-claim> )  
1800 Grant Street, Ste 700  
Denver, CO 80203  
Fax: 303-860-5680

b. For further questions, contact URM at: 303-860-5682 or 888-812-9601

## UCB Designated Medical Providers

<https://www.cu.edu/risk/dmp>

May 2022: Boulder & North Metro Denver:

**Concentra Medical Centers**

3300 28th Street

Boulder, CO 80301

303-541-9090



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290 Nickel Street, Ste 200

Broomfield, CO 80020

303-460-9339

500 E. 84th Avenue, Ste B14

Thornton, CO 80229

303-287-7070

550 E Thornton Pkwy, Ste 110

Thornton, CO 80229

720-872-0399

1860 Industrial Circle, Ste D

Longmont, CO 80501

303-682-2473

## **COMP Colorado Occupational Medical Partners**

9025 Grant Street, Ste 200

Thornton, CO 80229

303-292-0034

## **Injury Care Associates**

9351 Grant Street, Ste 600

Thornton, CO 80229

720-531-8377



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## **Peak Form Medical Clinic**

695 S Broadway

Boulder, CO 80305

303-402-9283

1093 E Bridge Street

Brighton, CO 80601

303-655-9005

## **Workwell Occupational Medicine**

Currently not accepting walk-ins, please schedule an appointment.

205 S Main Street, Suite C

Longmont, CO 80501

303-702-1612

1600 Specht Point Rd, Suite 115

Fort Collins, CO 80525

970-672-5100

2528 West 16th Street

Greeley, CO 80634

970-356-9800

1608 Topaz Drive

Loveland, CO 80537

970-593-0125



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