

**Maryland Department of Health and Mental Hygiene
Infectious Disease Epidemiology and Outbreak Response Bureau
May 2017**

**Guidelines for the Epidemiological Investigation of Cholera and Other
Vibrio Species Infections**

I. INTRODUCTION

These guidelines are designed for Maryland state and local health department personnel who are investigating reports of cholera and other *Vibrio* infections. This version of the “Guidelines for the Epidemiological Investigation of Cholera and Other *Vibrio* Species Infections” is an updated replacement of the May 2004 version. The major differences between this 2017 version and the 2004 version are the addition of part V.

ACTIVATION AND DEACTIVATION OF EMERGENCY RESPONSE OPERATIONS, the update of species names in part III. FEATURES OF OTHER COMMON *VIBRIO* SPECIES, and the update of names and contact information in part IV. CASE INVESTIGATION AND MANAGEMENT (ANY SPECIES OF *VIBRIO*).

II. FEATURES OF CHOLERA

Cholera is an acute, diarrheal illness characterized by an abundance of milky-colored, watery stool and vomiting, which can lead to rapid dehydration, renal failure and death. The dehydration is characterized by loss of skin turgor, sunken eyes, wrinkled hands (“washerwoman’s hands”) and weak or absent pulses. Cases are commonly mild in children and adults in good health. The incubation period for cholera ranges between a few hours to 5 days after exposure, while it is usually 2-3 days. Prompt and effective rehydration therapy can prevent most complications due to cholera.

A person may get cholera by drinking water or eating food contaminated with the *V. cholerae* bacterium. Shellfish eaten raw have been frequently indicated as a source of cholera. Fruits and vegetables that have been exposed to *V. cholerae* infected waters may also be a source of the illness, if they are not properly washed and prepared. Cholera is most often seen in the developing world, and the first documented U.S. case was identified in Texas in 1973. U.S. cases have resulted from travel to endemic areas in Asia, Africa, and South America, seafood harvested from the Gulf of Mexico, and from other foods imported from endemic areas. The disease is not likely to spread through casual contact, so the risk of person-to-person transmission is very slight.

In Maryland, cholera is a reportable disease by health care providers and laboratories. Although all subtypes of *V. cholerae* can cause illness, only disease caused by subtypes O1 and O139, as determined by analysis of stool samples, are considered cholera.

III. FEATURES OF OTHER COMMON *VIBRIO* SPECIES

There are 11 known pathogenic species of the family *Vibrionaceae* that cause Vibriosis. -Those most commonly seen in Maryland are *V. vulnificus* and *V. parahaemolyticus*. The other species are:

<i>V. alginolyticus</i>	<i>Grimontia hollisae</i> (formerly <i>V. hollisae</i>)
<i>V. cholerae non O1, non O139</i>	<i>Photobacterium damsela</i> subsp. <i>Damsela</i>
<i>V. cincinnatiensis</i>	(formerly <i>V. damsela</i>)
<i>V. fluvialis</i>	
<i>V. furnissii</i>	
<i>V. metschnikovi</i>	
<i>V. mimicus</i>	

A. *V. vulnificus*

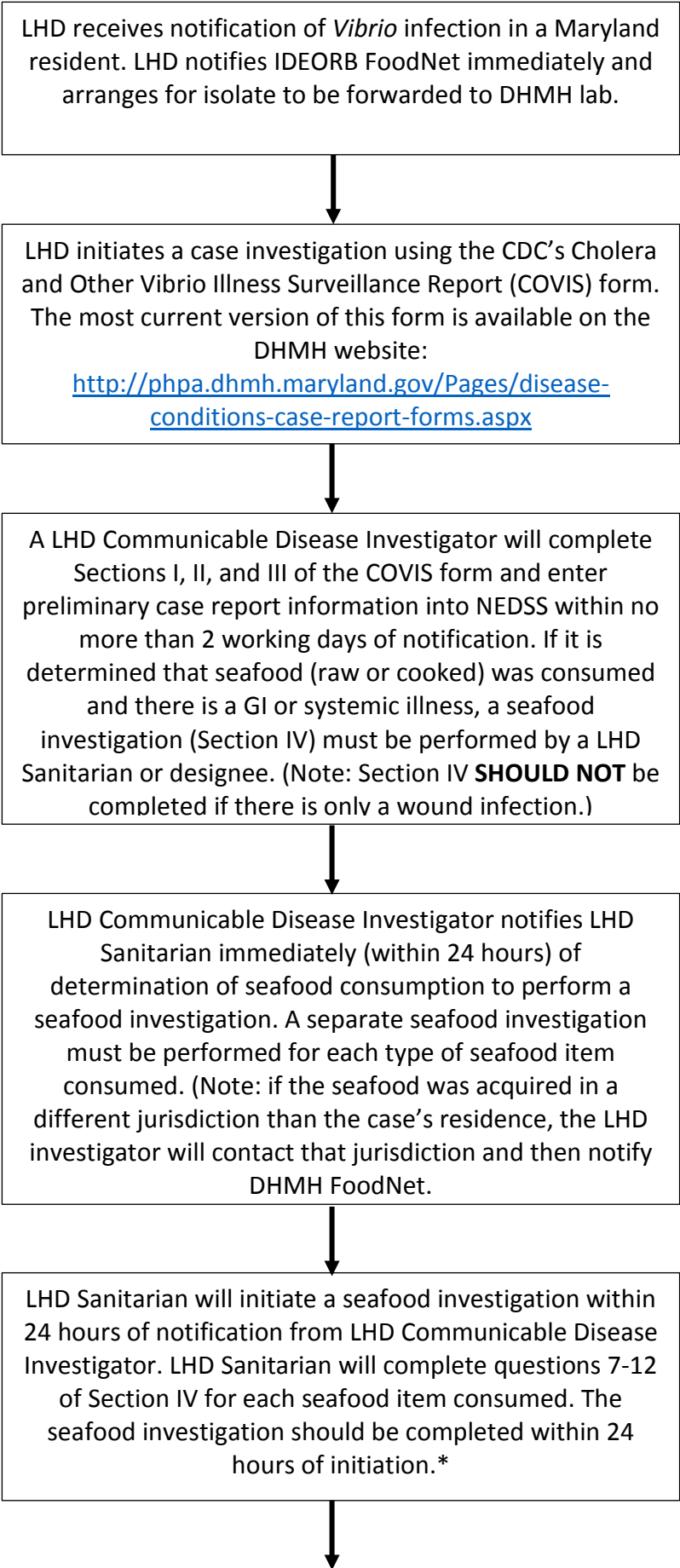
The incubation period for *V. vulnificus* is shorter than that of *V. cholerae*, with a majority of cases occurring from 12 hours to 3 days after exposure. *V. vulnificus* is most often associated with eating raw oysters but it can also develop following exposure of cuts or sores to contaminated saltwater. Symptoms and sequelae of this infection include shock, thrombocytopenia, and distinct, blistered skin lesions. This infection can result in septicemia in people with a history of liver disease, alcoholism, diabetes, cancer, hemochromatosis, or immunosuppression. *V. vulnificus* can also cause wound infections without sepsis.

B. *V. parahaemolyticus*

Infection with *V. parahaemolyticus* results in illness with less severity than *V. vulnificus* or *V. cholera* types. This illness is characterized by watery diarrhea and abdominal cramps and occasionally with vomiting, nausea, fever, and headache. The incubation period is very short, typically within 12 to 24 hours after exposure, although this can range between 12 hours to 3 days. This illness rarely results in systemic infection or death. *V. parahaemolyticus* can also occasionally cause wound infections.

IV. CASE INVESTIGATION AND MANAGEMENT (ANY SPECIES OF *VIBRIO*)

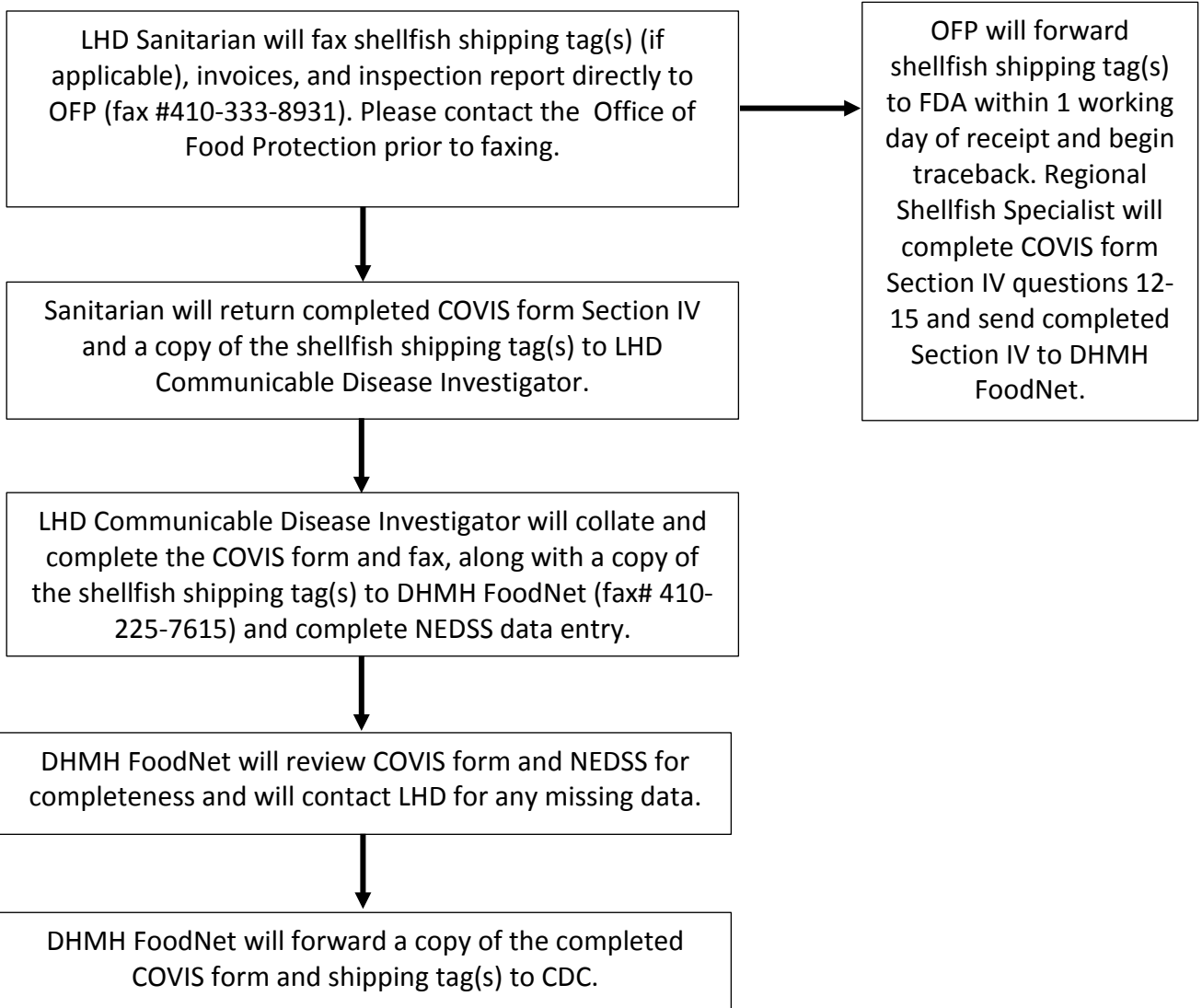
While the burden of disease from *Vibrio* infections in Maryland is not large, it is extremely important to investigate these cases quickly so necessary controls may be implemented. The case investigation and management of *Vibrio* species infections has been updated from the August 2004 version. The State and Local Health Departments should use the following flow chart in their investigation of *Vibrio* species infections.



LHD notifies DHMH FoodNet if a seafood investigation is pending.

DHMH FoodNet will notify the Office of Food Protection (OFP) Regional Shellfish Specialist

*Questions/guidance regarding the seafood investigation should be directed to DHMH Office of Food Protection



V. ACTIVATION AND DEACTIVATION OF EMERGENCY RESPONSE OPERATIONS

The Infectious Disease Epidemiology and Outbreak Response Bureau (IDEORB), in consultation with the Director and Deputy Director of the Prevention and Health Promotion Administration, will activate emergency response operations when one or more of the following criteria are met:

- Existing staffing is inadequate to assign responsibilities to maintain critical operations for more than three operational periods
- Resources (financial or material or operational) required to mount and/or sustain an ongoing emergency response are needed from outside of the Bureau or Administration
- A non-infectious disease event substantially disrupts critical operations of the unit

IDEORB, in consultation with the Director and Deputy Director of the Prevention and Health Promotion, will deactivate emergency response operations when one or more of the following criteria are met:

- Public health problem is contained or resolved
- Emergency response is incorporated into normal operations and adequate resources are available to sustain all ongoing responses
- Non-infectious event is over and disruption impacting critical operations no longer exists