This summer, King County received an unusually high number of reports of *Vibrio parahaemolyticus* infections associated with local oyster consumption. As of September 12, 2013, 32 confirmed and 2 probable cases of *V. parahaemolyticus* have been reported to Public Health — Seattle & King County (Public Health). This is 2.3 times the average number seen year-to-date in the past five years (average 15 cases 2008–2012), and 89% higher than the average annual total for the same period (average 18 cases 2008–2012). The last major spike in *V. parahaemolyticus* activity occurred in 2006, when King County tallied a total of 36 confirmed cases. The majority of *V. parahaemolyticus* infections go undiagnosed; based on data from CDC (Scallan, EID 2011), the actual number of cases in King County this summer is estimated to be over 4,600.

Most cases (79%) became ill after consuming raw oysters at local restaurants. Two cases became ill after consuming recreationally harvested oysters from private property on Puget Sound and the San Juan Islands. An additional six confirmed cases were reported among non-King county residents who consumed shellfish in King County restaurants. Many cases were unaware that raw shellfish are most risky in warm summer months, when the naturally-occurring *Vibrio* bacteria thrive in warmer waters and are likely to be most abundant.

We also received two reports of *V. parahaemolyticus* wound infections, a less common presentation for infection with this organism. Both occurred in persons with an open wound who reported swimming or wading in Puget Sound.

Over half of the cases reported no underlying medical conditions (such as immunosuppression or peptic ulcers) or medications (such as H2 blockers or recent antibiotic use) which might put them at an increased risk of infection. Among those that did report regular use of H2 blockers regularly, several were not aware that these medications increase the risk for illness from *Vibrio* species.

*V. parahaemolyticus* and other non-cholera-causing *Vibrio* species (including non-toxigenic *Vibrio cholerae*) typically cause a moderately severe enteritis lasting 1–7 days characterized by watery diarrhea, abdominal cramps, fever, nausea, vomiting, and headache. Up to 25% of patients may develop a dysentery-like syndrome with high fever, bloody or mucoid stools, and an elevated white blood cell count. The incubation period is typically 12–24 hours after exposure (range, 4–96 hours). Bacteremia is uncommon, occurring mostly in persons who are immune compromised. Wound infections can occur when broken skin is exposed to warm sea water.

Clinicians should consider *V. parahaemolyticus* in patients with a compatible clinical syndrome and take a thorough food history, including history of eating raw or undercooked seafood, particularly shellfish. Details related to suspected shellfish consumption, including the location and dates of meals, should be obtained. As with other enteric infections of public health significance (i.e., shigatoxin producing *E. coli*, shigellosis, salmonellosis) it is important that clinicians obtain stool cultures to confirm the etiology of infection. Culture results are important to confirm the diagnosis and for public health investigations and resulting measures taken to interrupt transmission. The microbiology lab submission form should specify that *V. parahaemolyticus* culture is being requested so that the lab can use the proper selective culture media for *Vibrio sp.* (typically Thiosulfate Citrate Bile Sucrose Agar or TCBS agar).

*V. parahaemolyticus* live worldwide in marine coastal environments. In warm weather, increasing numbers of the organisms multiply in the gut of filter feeding mollusks such as oysters, clams, and mussels. Oysters, commonly eaten raw, are the most common food associated with *Vibrio* infection in the United States. *V. parahaemolyticus* is killed by cooking food to 145°F.

*V. parahaemolyticus* infection is not considered particularly communicable, though fecal-oral transmission is theoretically possible. Persons especially susceptible to infection are those with chronic liver disease, decreased gastric acidity, diabetes, peptic ulcers, or immunosuppression.

The Washington Department of Health (DOH) Shellfish program monitors commercial and recreational shellfish harvest sites for *V. parahaemolyticus*. During routine sampling, sites demonstrating high levels of toxins associated...
with Vibrio are closed for shellfish harvesting. In addition, restaurants and other retail outlets are required to keep shellfish tags identifying the harvest site for every oyster, clam, and mussel they sell.

When a confirmed or suspect case of vibriosis is reported, the case is rapidly interviewed by Public Health, and tags from implicated shellfish are retrieved and used to identify implicated product and/or growing areas. As of September 12, 2013, six growing areas in Puget Sound and off the Pacific Coast of Washington have been closed by the DOH Shellfish Program after being associated with at least four sporadic V. parahaemolyticus illnesses.

For more information about vibriosis, please visit:

Report confirmed cases of V. parahaemolyticus to Public Health during regular work hours at 206-296-4774 or on our 24 hour automated disease report line at 206-296-4782.