



Determine how environmental strains relate to clinical strains, in order to better define outbreaks and improve outbreak response.

Identify the processes that impact the uptake and elimination of Vibrios and viruses in shellfish such as: attachment mechanisms, role of digestion, role of temperature and pumping/feeding activity, impact of food or lack of food in the water, mechanisms of elimination.

Identify how tidal state, turbulence and depth interact to influence Vibrio uptake and retention.

Refine all elements of the Vibrio Risk Calculator by refining the estimates of serving size, percent served raw/cooked, and estimated ratio of confirmed to unreported cases. Include regional considerations if appropriate.

Validate the use of ice slurry on a regional basis and evaluate shelf life impacts.

Evaluate the impact of prescription and over-counter proton pump inhibitors (such as Prilosec and Nexium) and antacids on the risk of Vibrio infection by evaluating COVIS records and determine if a consumer advisory label for such products would be appropriate.

Develop a training module to educate public health and epidemiology staff on how to properly investigate and document Vibrio illnesses including guidance on patient interview, COVIS forms, and retail evaluation.

Vibrio-related issues identified by the ISSC

Is total V.v. a valid indicator of risk?

Are there differential effects of validated PHP on virulent subpopulations?

How do environmental factors affect levels of virulent subpopulations?

Compile a collection of V.v. strain samples for future virulence research.

Do other bacterial species react to controls the same as V.v. and V.p.?

What are baseline Vibrio (total and virulent) levels at harvest (in oysters and clams)?

How much Vibrio (total and virulent) growth results from the current time/temperature controls (in oysters and clams)?

Research Priorities

What regional information is needed to refine risk assessments and risk calculator tools for implementation of effective control plans?

What is the significance of salinity to Vibrio levels in shellfish?

Is there a salinity/temperature matrix that determines Vibrio levels?

What are the key virulence factors (or combination thereof) for V.v. and V.p.?

What are the regional differences in pathogenic strains of V.v. and V.p.?

What is the percentage of pathogenic strains of Vibrio in growing waters?

Should the “viable but not culturable” state in pathogenic Vibrios be a concern?

Develop rapid test for ASP biotoxin. Validate the DSP rapid test that is currently under review.

Continue to develop additional information to inform the use of MSC as an indicator of enteric viruses including the retention times and seasonal fluctuations.

Develop better tools to evaluate whether shellfish have been fully cooked (especially for evaluating imports). The acid phosphatase test has not been fully validated. A quantitative test would be a significant improvement over current organoleptic tests.

Development of tools to allow the culture of Norovirus for enumeration.