Warming Water and the Appearance of Gastrointestinal Illness Case Study

A Nevada resident whohad just returned home from a cruise on Prince William Sound in July 2007 was struck by gastrointestinal distress so severe that medical intervention was required. Laboratory tests for this patient indicated the presence of *Vibrio parahaemolyticus,* a pathogenic bacterium known to cause gastroenteritis. Infection usually occurs through consuming raw or undercooked shellfish, particularly oysters. In this case, the patient’s illness began 3 days after eating raw oysters from Prince William Sound.

Further investigation by the epidemiology section of the Alaska Division of Public Health revealed that a total of 54 people had developed watery diarrhea, along with various other gastrointestinal symptoms, beginning within 2 days of consuming raw oysters collected from Alaskan waters. Stool samples provided by eight patients all contained *V. parahaemolyticus*. However, the discovery of this bacterium was puzzling because *V. parahaemolyticus* requires a minimum water temperature of 16.5°C to survive, and the waters of Prince William Sound have historically been colder than that.

* Into which of three temperature classifications for bacteria does *V. parahaemolyticus* fall?
* What could explain the change in the ability of *V. parahaemolyticus* to survive?