Increase in Vibriosis, Maine, July - September 2012
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BACKGROUND
• The most common causes of vibriosis:
  • Vibrio parahaemolyticus
  • Vibrio vulnificus
  • Vibrio alginolyticus
  • Vibrio spp. can be isolated from blood, stool and wounds
  • Raw shellfish (especially oysters) are most common foodborne exposure to vibrio spp.
• Majority of Maine cases in past five years are due to seawater exposure, or exposure in other states or countries
• Nationally in an increase in vibriosis was noted from 1996-2010
• Vibriosis cases that reside in Maine increased from 4 cases in 2011 to 9 cases in 2012
• Five year (2007-2011) median number of cases is 4
• Most cases occur in the summer months

METHODS
• All cases of vibriosis are investigated by field epidemiologists, including out-of-state residents tested in Maine involved in this cluster
• The federal CDC report form for vibriosis is used to collect the following information:
  • Symptoms, including date and time of onset
  • Exposure to seafood, including food establishment, date and time (7 days prior to illness)
  • Exposure to seawater, including location, date and time (7 days prior to illness)
• Interagency team with representatives from Maine CDC (Division of Infectious Disease, Division of Environmental Health and Health and Environmental Testing Laboratory), Department of Agriculture and Rural Resources, and Department of Marine Resources was formed to monitor the outbreak and investigate risk factors
• Due to the increase in cases reported in out-of-state residents, an email notification was sent to a national foodborne disease listserv to alert colleagues to report cases in their jurisdictions who were exposed in Maine
• A Health Alert was sent to Maine providers on September 6, 2012 reminding them to test for Vibrio spp. if no other cause of illness was identified

RESULTS – Epidemiological Investigation
• As of October 31, 2012, there have been 9 cases of vibriosis reported in Maine residents and 7 cases in out-of-state residents with exposure to seafood in Maine
• 2 cases had out-of-state exposures (one seawater; one seafood)
• 2 cases were wound infections from seawater exposure in Maine
• 1 patient was unable to be reached for an interview
• 4 cases (7 out of-state residents) all reported seafood exposures
• 43% (3/7) of out-of-state cases were diagnosed in Maine; others were reported to Maine
• 20 seafood vendors were identified
• Exposure to seawater, including location, date and time (7 days prior to illness)
• Exposure to seafood, including food establishment, date and time (7 days prior to illness)

RESULTS – Environmental Investigation
• Inspectors from the Maine CDC Health Inspections Program, Department of Agriculture and Rural Resources and/or Department of Marine Resources inspected 18 establishments
• Agency oversight depends on the type of establishment and type of seafood
• Violations found at food establishments:
  • No separation of raw vs. cooked foods
  • Improper cold storage of foods
  • Lack of proper consumer advisory notification on menu
  • Food temperatures not checked
• Lack of cleanliness and fly infestations
  • 4 vendors were visited by Department of Marine Resources and/or Department of Agriculture and Rural Resources inspectors

RESULTS – Environmental Investigation
• In 2012 Maine had an increase in vibriosis cases compared to previous years
• The majority of cases were vibrio gastroenteritis, not reported recently in Maine
• Many different types of seafood and types of establishments were involved
• Exposure to seawater was more commonly seen in Maine
• Interagency collaboration led to a rapid, joint response with inspections conducted at seafood facilities that supplied the seafood
• Some violations were corrected on site and follow-up inspections were conducted by respective agencies
• Partner agencies regularly participate in the Maine CDC Food Safety Workgroup to address food safety issues and improve outbreak investigations and this ongoing collaboration allowed for a coordinated public health response

CONCLUSIONS
• Thanks to members of the interagency investigation team and each agency’s inspectors/staff:
  • Maine CDC, Health Inspections Program: Lisa Roy and Becky Walsh; Steve Giguere and Michelle Newbiggin
  • Department of Marine Resources: Kohl Kanwit and John Fendl
  • Maine CDC, Infectious Disease Epidemiology: Stephen Sears and Leigh Ann Miller
  • Health and Environmental Testing Laboratory: Heather Grieser and Rick Danforth

SOURCES