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## Maritime Disease Reporting and Response in Alaska

### Background

The purpose of this *Bulletin* is to provide an overview of maritime disease reporting and response in Alaska, and describe recommendations and requirements for public health notifications to state and federal agencies.

Every day close to one million travelers arrive in the United States by air, sea, or land. Our nation's 317 ports of entry are at the intersection of public health, transportation, and homeland security. Alaska has 27 ports of entry (21 of which are maritime ports of call) and is the top cruise ship passenger destination in the United States. In 2009, more than one million cruise ship passengers visited the state (1.5 times Alaska's wintertime population of 710,231). A typical cruise ship carries 500–1,000 crew members, and 1,500–2,500 passengers. Sometimes as many as 50 nationalities may be represented onboard, which increases the risk of transporting a wide variety of communicable diseases. Due to close quarters and prolonged contact on ships, communicable diseases can spread quickly and may result in outbreaks both onboard ships and in local communities.

The U.S. Foreign Quarantine Regulations, 42 CFR Part 71, require the master of a ship destined for a U.S. port to immediately report all onboard deaths and certain communicable illnesses among passengers or crew to the U.S. Centers for Disease Control and Prevention (CDC) Quarantine Station with jurisdiction over the scheduled port of arrival.<sup>1</sup> In Alaska, the CDC Anchorage Quarantine Station (AQS) has federal jurisdiction over the international air, land, and sea ports. The master of any carrier at a U.S. port is required to report immediately to the quarantine station at or nearest the port the occurrence, on board, of any death or any ill person among passengers or crew with the following signs/symptoms:

- Temperature of 100° F (38° C) or higher, accompanied by a rash, glandular swelling, or jaundice, or which has persisted for more than 48 hours; or
- Diarrhea (reported separately to the CDC Vessel Sanitation Program), defined as the occurrence in a 24-hour period of three or more loose stools or of a more than normal amount of loose stools (for the person); or

Ships are also requested to report occurrences of fever of any duration, accompanied by any of the following:

- Difficulty breathing or suspected/confirmed pneumonia;
- Cough for more than 2 weeks or with bloody sputum;
- Headache with neck stiffness;
- Reduced level of consciousness; or
- Unexplained bleeding.

Under its delegated authority, CDC is empowered to apprehend, detain, medically examine, or conditionally release persons suspected of carrying a quarantinable disease into the country.<sup>2</sup>

### Maritime Disease Reporting to Public Health Agencies

Maritime disease reporting to state and federal public health agencies in Alaska has been inconsistent. In past years, health authorities were sometimes notified only after an outbreak was large or well under way. Examples include outbreaks of influenza A among tourists on cruise ships in 1998 and 1999, an outbreak of varicella on a ship in 2005, and a pandemic influenza A (H1N1) outbreak on a ship in 2009.

During 2005–2009, the CDC Quarantine and Border Health Services Branch received a total of 2,571 maritime notifications; 71% of these notifications were transmitted to four CDC Quarantine Stations: Miami (1035, 40%), San Juan (320, 12%), Los Angeles (251, 10%), and AQS (227, 9%). Of the 227 notifications reported to AQS,

- 96% were from cruise ships;
- 4% were from cargo ships;
- 57% pertained to crew members;
- 43% pertained to passengers;
- 88% were illness reports, of which, 71% were associated with influenza-like illness (ILI), and 16% were associated with varicella; and
- 12% were death reports, of which, 80% were attributed to cardiovascular disease.

The notifications summarized above represent only a portion of maritime-related communicable disease occurrences in Alaska. Illness or death reports originally transmitted to other CDC Quarantine Stations and illnesses reported to the CDC Vessel Sanitation Program were not included.

### Ship Outbreak Response: An Example

In June 2009, the AQS received numerous reports of ILI on Alaska-bound passenger vessels. One ship reported 32 crew members ill with fever and cough or sore throat and requested assistance. In coordination with the Alaska Division of Public Health (DPH), five nasopharyngeal swab specimens were collected from symptomatic crew members, and all tested positive for pandemic influenza A (H1N1) at the Alaska State Public Health Laboratory. The cruise line medical personnel quickly implemented aggressive control measures and provided mass prophylaxis to the entire crew cohort. CDC deployed an investigation team to review ship medical logs, interview ill travelers, complete medical questionnaires, and review surveillance activities. With the assistance of the U.S. Coast Guard, the team also collected paired serum samples. After control measures were implemented, the number of reported cases declined sharply.

### Discussion

Although maritime disease reporting is required under federal law, underreporting is an ongoing problem in Alaska and other states. Early and consistent reporting of ill travelers by ship medical staff and land-based clinicians who may be called upon for treatment is essential for rapid containment of maritime disease outbreaks in Alaska.

### Recommendations

1. Alaska health care providers should report suspected outbreaks of communicable diseases among cruise ship passengers to the Section of Epidemiology. For more information, call (907) 269-8000 or visit [www.epi.hss.state.ak.us/pubs/conditions/default.stm](http://www.epi.hss.state.ak.us/pubs/conditions/default.stm)
2. Ship medical staff or agents are required to report maritime-related deaths or cases of communicable disease illness to the CDC Anchorage Quarantine Station. For more information, call (907) 271-6301 or visit [www.cdc.gov/travel/content/ill-reportingmaritime.aspx](http://www.cdc.gov/travel/content/ill-reportingmaritime.aspx)

### References

1. Code of Federal Regulations 42 CFR Part 71. Available at: <http://cfr.regstoday.com/42cfr71.aspx>
2. CDC's Quarantine and Isolation homepage. Available at: [www.cdc.gov/quarantine](http://www.cdc.gov/quarantine)