

Outbreak of Gastrointestinal Illness Aboard Cruise Ship *MS Mercury*, San Diego, California

On March 14, 2006, Royal Caribbean International Cruise Line (RCI), the parent company of Celebrity Cruises, notified the VSP that aboard its ship, the *MS Mercury*, 46 cases (2.42%) of GI illness had been reported to the infirmary among passengers, and 1 case (0.12%) had been reported among crew members. On March 6, 2006, the *MS Mercury* sailed from San Diego, California with 1,904 passengers and 840 crew (Appendix A).

The Epidemic Intelligence Service (EIS) officer from CDC's National Center for Environmental Health assisted in the investigation to determine the characteristics and extent of GI illness aboard the *MS Mercury*, the causal pathogen, the potential modes of illness transmission, and how best to enact public health intervention and control.

On March 24, 2006, two VSP Environmental Health Officers boarded the *MS Mercury* to conduct an outbreak investigation.

The primary objectives of this investigation were to

- determine the etiology of the outbreak,
- determine the method of transmission among passengers and crew, and
- develop recommendations to stop the current spread of the illness and prevent future occurrences of the illness.

A team of VSP inspectors sailed with the ship from Puerto Vallarta, Mexico to San Diego, California, conducting en route a focused environmental inspection.

Laboratory results

Twelve of 34 stool samples from passengers and crew (35%) were positive for norovirus RNA.

Surveys

Passenger surveys

1976 passenger surveys distributed

1291 passenger surveys collected

The median age for cases was 56 (range, 10–84); the median age for controls was 60 (range, 9–91).

Crew surveys

841 Crew surveys distributed

698 Crew surveys collected

The causative agent of this outbreak was norovirus, demonstrated through laboratory analysis and epidemiologic characteristics.

Appendix A

Itinerary for *MS Mercury*–

6 March 2006	San Diego, California (Embarkation day)
7 March 2006	At Sea
8 March 2006	Cabo san Lucas, Mexico
9 March 2006	Mazatlan, Mexico
10 March 2006	Puerto Vallarta, Mexico
11 March 2006	At Sea
12 March 2006	Acapulco, Mexico
13 March 2006	Ixtapa, Mexico
14 March 2006	Manzanillo, Mexico
15 March 2006	At Sea
16 March 2006	At Sea
17 March 2006	San Diego, California (Disembarkation day)