

## REFERENCES

1. Danneberg AL, Yashuk JC, Feldman RA. Gastrointestinal illness on passenger cruise ships 1975-1978. *Aust J Public Health* 1982; 72: 484-488.
2. Addis DG, Yashuk JC, Clapp De, Blake PA. Outbreaks of diarrhoeal illness on passenger cruise ships, 1975-85. *Epidem. Infect* 1989; 103: 63-72.
3. US Public Health Service. *Vessel sanitation program operations manual*. Atlanta, Georgia: US Department of Health and Human Services, 1987.
4. Ferson M, Paraskevopoulos P, Hatzi S, Yankos P, Fennell M, Condylis A. Summer influenza A outbreak on a trans-Tasman cruise. *Commun Dis Intell* 2000; 24:45-47. ☒

## HEALTH SURVEILLANCE ON CRUISE SHIPS DURING THE SYDNEY 2000 OLYMPIC AND PARALYMPIC GAMES

*Peter Waples, Sarah Thackway and Karen Banwell*  
Olympic Planning Unit  
NSW Department of Health

*Mark Ferson and Steve Hatzi*  
South Eastern Sydney Public Health Unit

During the Sydney 2000 Olympic and Paralympic Games, nine cruise ships will be berthed in Sydney Harbour, acting

as floating hotels for an estimated 32,000 guests. Outbreaks of disease including gastroenteritis, Legionnaire's disease, influenza, and tuberculosis (TB) are well documented aboard cruise ships,<sup>1-7</sup> and the closed environment aboard the ships may promote the occurrence of outbreaks of disease that can affect large numbers of individuals. During the Games, there is also a potential for outbreaks of disease to occur from sources outside cruise ships but affecting ships' passengers.

This article describes the plans for health surveillance on cruise ships during the Games, which will be an important component of the larger Olympic Health Surveillance System (OHSS). The overall OHSS is described in the article by Thackway on page 142, while the NSW Vessel Inspection Program, a hygienic inspection regimen for cruise ships, is described in the article by Banwell and Butler et al. (page 148).

### HEALTH SURVEILLANCE ON CRUISE SHIPS DURING THE GAMES

During the Games, health surveillance on cruise ships will have two reporting streams (see Figure 5):

- Notifiable Disease Reporting (NDR)
- Cruise Ship Olympic Surveillance System (CSOSS).

#### Notifiable Disease Reporting

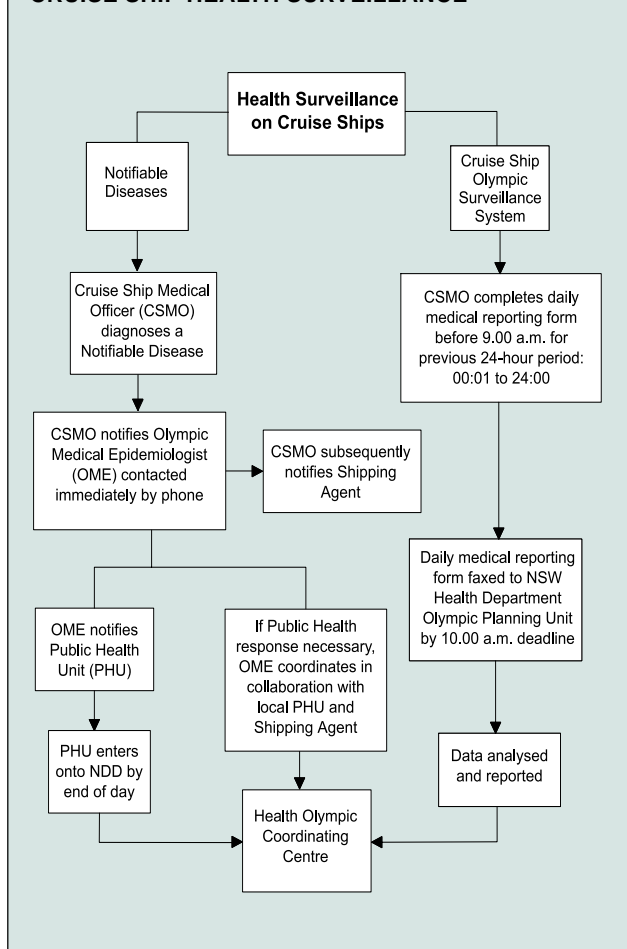
During the Games period, all cruise ships will be required to comply with the NSW Public Health Act and Regulations (1991), and notify the NSW Department of Health of:

- outbreaks of gastroenteritis
- two or more linked cases of food poisoning
- other notifiable diseases.

Cruise Ship Medical Officers will report any notifiable diseases, unusual disease clusters or public health-related problems to the Olympic Medical Epidemiologist (see article by Banwell and Butler et al. on page 148). The Medical Epidemiologist will then advise the appropriate public health agency (see Figure 5).

**FIGURE 5**

### CRUISE SHIP HEALTH SURVEILLANCE



### Cruise Ship Olympic Surveillance System

The Cruise Ship Olympic Surveillance System (CSOSS) is designed to enhance the existing notifiable diseases reporting system, and to actively identify unusual patterns of illness and disease on cruise ships. This surveillance mechanism builds on a reporting system operated by the South Eastern Sydney Public Health Unit and Sydney-based cruise vessel operators.

During the Games, cruise ship medical staff will be requested to complete an Olympic Cruise Ship Daily Medical Report for inclusion into the NSW Department of Health's OHSS. This daily report outlines the number of passengers on each ship, the number of medical consultations, hospitalisations, deaths and cases with the following specific symptoms and conditions:

- influenza-like illness
- suspected pneumonia
- gastroenteritis.

The summary report forms will be faxed daily to the Department of Health, and analysed and reported through the NSW Health Olympic Coordinating Centre (HOCC). The Olympic Medical Epidemiologist will be notified immediately of any acute health concerns or cases showing unusual symptoms of possible public health significance.

The large number of cruise ships that will converge in Sydney for the Sydney 2000 Olympic and Paralympic Games has presented a unique opportunity to develop and test a comprehensive system for surveillance of health on these vessels. It is hoped that the Sydney experience will inform planning for the next Olympic Games in Athens

in 2004, which will be serviced by a much greater number of cruise ships.

### ACKNOWLEDGEMENTS

Peter Waples is currently participating in the NSW Public Health Officer Training Program. The authors would like to thank Paul Paraskevopoulos for his involvement in developing the cruise ship medical reporting system.

### REFERENCES

1. Jerninigan DB, Hofmann J, Cetron MS, Genese CA. Outbreak of Legionnaires' disease among cruise ship passengers exposed to a contaminated whirlpool spa. *Lancet* 1996; 347: 494-99.
2. Distasio AJ. The investigation of a tuberculosis outbreak in the closed environment of a US Navy ship, 1987. *Mil Med* 1990; 155: 347-351.
3. Christenson B, Lidin-Janson G, Kallings I. Outbreak of respiratory illness on board a ship cruising to ports in southern Europe and northern Africa. *J Infect* 1987; 14: 247-54.
4. O'Mahony M, Noah ND, Evans B, Harper D. An outbreak of gastroenteritis on a passenger cruise ship. *Journal of Hygiene* 1986; 87: 229-36.
5. Waterman SH, Demarcus TA, Wells JG, Blake PA. Staphylococcal food poisoning on a cruise ship. *Epidemiol Infect* 1987; 99: 349-353.
6. Gupta L, Towler B, Frommer M. Investigation of an outbreak of gastroenteritis on a container ship returning from Asia. *NSW Public Health Bulletin* 1994; 5(6): 61-62
7. Ferson MJ, Paraskevopoulos P, Hatzi S, Yankos P, Fennell M, Condylis A. Presumptive summer influenza A: an outbreak on a trans-Tasman cruise. *Commun Dis Intell* 2000; 24: 45-47. ☒

## FOOD SAFETY MANAGEMENT AT OLYMPIC VENUES DURING THE SYDNEY 2000 OLYMPIC AND PARALYMPIC GAMES

*Steve Holroyd, John Shields and Peter Waples*  
Olympic Planning Unit  
NSW Department of Health

Ensuring food safety is a key element in the success of the Sydney 2000 Olympic and Paralympic Games (the Games). A major food-borne disease outbreak has been identified as one of the leading threats to public safety. In terms of the food quantities required for an event such as the Games, estimates suggest that 1.8 million meals will be served to athletes and officials and one million meals will be prepared for staff. Given the enormity of the task, the Food Safety Strategy for the Games has been in development since 1996. 'Prevention rather than cure' and inter-agency cooperation are the key themes of the plan. In the past few years, the food safety team has worked closely with the Olympic organisers (SOCOG) and other

government bodies to increase awareness of food safety.

### THE ATLANTA EXPERIENCE

During the 1996 Atlanta Olympic Games over 5,000 food safety inspections were conducted at Olympic venues.<sup>1</sup> More than 100 illegal food operations were closed down and over seven tonnes of food destroyed. The maintenance of this intense inspection schedule was considered to be a key contributing factor to the absence of any reported food-borne illness outbreak. The inspections were aided by special government legislation that put tight controls on the practices of temporary food premises. There was 24-hour coverage of the Olympic Village.<sup>1</sup>

### OPERATION FOODWATCH

Outside Olympic venues, Operation Foodwatch will play an important role in minimising the occurrence of food-