GLOBAL BIOSECURITY

Vette K & Andersson P. When global becomes local: Gold Coast 2018 Commonwealth Games international communicable disease surveillance. Global Biosecurity, 2019; 1(1).

PERSPECTIVES FROM THE FIELD

When global becomes local: Gold Coast 2018 Commonwealth Games international communicable disease surveillance

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Abstract

The 21st Commonwealth Games (the Games) were hosted on the Gold Coast, Australia in April 2018. With many international travellers congregating at the mass gathering, it was important to monitor international communicable disease outbreaks with potential to be imported into Australia. The Australian Government Department of Health (DoH) conducted and reported enhanced international communicable disease surveillance during and surrounding the Games period. Surveillance focused on diseases with higher than normal incidence in Commonwealth countries with potential to be imported through travellers and ability to continue transmission in Australia. Over four months, 27 disease events were identified, monitored and reported to local, state and federal public health authorities, as well as general practitioners and pathologists throughout Queensland. Surveillance provided situational awareness for decision making and risk assessment during the Games. It complemented and informed surveillance of local disease activity during the Games and allowed frontline health professionals to contextualise disease presentations.

Introduction

From 4-15 April 2018, the 21st Commonwealth Games (the Games) were held on the Gold Coast in Queensland, Australia. One third of the world's population was represented at the games by 71 teams from members of the Commonwealth of Nations (1, 2). In addition to 6,600 athletes and numerous support staff, more than 500,000 spectators attended the Games across several sites (3). The large influx of travellers and the temporospatial concentration of people at a mass gathering provides the ideal conditions for introduction of international communicable diseases and heightened local transmission (4). As a result, it was essential for local, state and federal public health agencies to be prepared to detect and respond to communicable disease events at the Games. An important facet of communicable disease control was having an awareness of disease activity in countries from which people were likely to be travelling. With the aim of providing information for risk assessments and informing preparedness and response activities, enhanced international communicable disease surveillance was instigated for the Games.

Methods

The Australian Government Department of Health (DoH) coordinated this process as part of its role as the National Focal Point under the International Health Regulations. Field Epidemiology Trainees at the DoH took carriage of planning, undertaking and reporting surveillance activities. The DoH worked with the Gold Coast Public Health Unit (GCPHU) and the Queensland Department of Health to establish surveillance and reporting needs.

Data sources

A broad range of data sources were used to collect disease intelligence. These included ProMED, the Pacific Public Health Surveillance Network, the Global Public Health Intelligence Network, Epi-watch, the World Health Organization's (WHO) Event Information System, WHO disease outbreak news, WHO regional websites and the European and United States Centres for Disease Control and Prevention websites. Where possible, data were cross-referenced between sources.

Inclusion and exclusion criteria

Existing international disease surveillance was adapted to identify threats that could potentially be introduced to Australia via travellers to the Games. The scope of surveillance was deemed to be communicable disease events with higher than normal incidence in Commonwealth countries. The following inclusion criteria were used:

1. A communicable disease event that has potential to be imported into Australia by international travellers.
2. The affected population is likely to be travelling to the Games.
3. The disease has potential to continue transmission if imported (including the presence of a competent vector where appropriate).

Events were excluded from reporting if they met one or more of the exclusion criteria:

1. Routine, non-outbreak disease activity in the source country.
2. Foodborne outbreaks without known food importation routes.
3. Waterborne outbreaks.
4. Potential threats or situations based on research outcomes alone.

Report format and distribution

The reporting schedule was informed by surveillance processes from previous mass gathering events, such as the Sydney Olympic Games in 2000 and the Glasgow Commonwealth Games in 2014 (Gold Coast 2018 Commonwealth Games Corporation, unpublished data, 2018). Surveillance began in January 2018, with monthly reports. Weekly reports ran through March and daily reports began two weeks prior to the opening of the Games and continued until four days after the closing ceremony. The frequency of reporting was designed to mirror the anticipated travel volumes during the Games period.

Surveillance reports were provided to the heads of Communicable Disease Branches in each State and Territory, Queensland Health epidemiologists, general practitioners, pathologists and microbiologists throughout Queensland, the medical functional area of the Commonwealth Games organisers and relevant staff at the DoH.

Reports were comprised of a line list of events including details on the country and region affected, the disease, susceptible populations, case numbers and a brief contextual description. All identified events continued to be monitored and updated where necessary.

Outcomes

Across the four-month period 27 disease events were identified and monitored. Notable events included:

- The largest reported outbreak of Lassa fever in Nigeria, which was ongoing throughout the Games period.
- Dengue outbreaks in the Pacific.
- Severe and widespread influenza predominantly in the Northern Hemisphere.
- A significant outbreak of meningococcal disease in Fiji.
- Ongoing outbreaks of mumps in the Pacific.

Of the threats highlighted in surveillance, only one isolated cluster of influenza materialised at the Games.

Discussion

Enhanced international communicable disease surveillance provided situational awareness for decision making and risk assessment at the local and national level during the Games. As a result of timely, sensitive and well-planned surveillance and response by the GCPHU, there were no Games-related outbreaks. International surveillance identified a variety of relevant disease events overseas and complemented surveillance of local disease activity during the Games. Fortunately, influenza was the only threat identified through surveillance that eventuated. Swift response activities quickly isolated and managed the cases.

Sensitivity, timeliness and data quality were all important facets of the surveillance. Use of a broad variety of data sources ensured that intelligence was reliable, thorough, gathered as quickly as possible, and that it was updated as situations became clearer through official sources.

Wide distribution of the surveillance report meant that all levels of government and a variety of relevant stakeholders shared the same information and an ongoing awareness of disease activity overseas. This provided the information necessary to prepare appropriately and contextualise presentations and perceived risks. Dissemination of the information allowed frontline health professionals to consider disease presentations that would not normally be included as differential diagnoses.

A standard operating procedure document was established during the project and serves as a legacy to inform future engagements of the DoH in providing international communicable disease surveillance for mass gathering events.

Conclusion

International communicable disease surveillance was an important facet of preparedness and situational awareness for the Games. Reports provided the necessary intelligence to inform risk assessments and enabled primary health care and public health systems to be sensitive to potential risks. International surveillance should be considered as a necessary complement to planning and local surveillance activities in future mass gatherings.

Acknowledgements

We acknowledge the support of the Australian Government Department of Health, Gold Coast Public Health Unit, Queensland Health and Australian National University.

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How to cite this article: Vette K & Andersson P. When global becomes local: Gold Coast 2018 Commonwealth Games international communicable disease surveillance. *Global Biosecurity*, 2019; 1(1).

Published: February 2019

Global Biosecurity is a peer-reviewed open access journal published by University of New South Wales.