Infection Control and Public Health at Mass Gatherings

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Outline

• Disease surveillance
• Public health concerns at mass gatherings
• Types of mass gatherings: where the risk assessment leads
• Infection control issues
• Where it all fits in mass gathering organization
What is a “Mass gathering”?

Mass gatherings

- Spontaneous
  (e.g. Stanley Cup riot)

- Planned
  
  - Recurrent events different locations
    (e.g. Olympics, World Cup)
  
  - Recurrent event same location
    (e.g. Hajj, Wimbledon)
Why are we worried?

• Mass gatherings
  – Increase the demand on existing services
  – Increase the potential for public health events due to changes in population dynamics, changes in services and changes in behaviours
  – Provide a platform for terrorist events
  – Attract media attention

• Therefore require more public health attention
WHO risk assessment tool checklist

Areas of coverage

- Event's Cross-Cutting Issues
- Risk Management
- Surveillance and Alert
- Laboratories
- Outbreak Alert and Response
- Medical Services and CSR
- Deliberate Planning Response
- Mass Dispensing
- Infection Control Quarantine
- Planning Training

- Communications Risk & Crisis
- Security/law enforcement
- Management
- External
- Logistics
- Comm’s Systems
- Psychosocial
- Environmental Health
- Fatalities
Building on experience
Mass gathering population
Public Health concerns

- Communicable diseases
  - Investigations, Interventions
    ex: Foodborne outbreaks
  - Prevention, Control
    ex: meningitis

- Adverse-effects of environmental exposures
  - Prevention
    ex: temperature related illness, air quality
Communicable Disease

- Endemic diseases
- Outbreaks at the event
- Community outbreaks that could affect the event
- Imported diseases not easily recognized
- Pandemic influenza
- Intentional acts: bioterrorism or CRN
Environmental Health

• Drinking water
• Air quality
• Sanitation
• Safe and quality food
  – At the event
  – In the community
• Weather related events:
  – heat or cold
Mass Gathering Preparedness

3 main areas:

- **Risk Assessment**: What might happen?
- **Surveillance**: How will we know when it happens?
- **Response**: What will we do when it happens?
Risk assessment

• Will the conditions at the MG increase the likelihood of certain diseases occurring
  – and, if so, which ones?
• What will be the consequences of these diseases on
  – the health of participants and their hosts,
  – on the general community,
  – on health care provision, and
  – on the mass gathering itself?
• Will existing control measures be able to cope with these consequences?
Risk Assessment

• What is the overall assessment of the level of risk for each disease?
• Which conditions should be given priority for prevention, surveillance and treatment?
• What if some of the assumptions in the risk assessment are wrong – what impact would there be if some of the assumptions were varied?
Risk Assessment

• Who is coming and from where are they coming (participants, spectators, IPPs)
• What is the event and how will that change the risk: religious, political, sport
• When is it happening
• Where are the events and where will people sleep, eat etc.
• How are they coming and moving about once here
World Youth Day
Summit of the Americas/G20
2010 Winter Olympics
Vancouver 2010 Games

2010 Olympic Games

- 2600 athletes
- 3800 team officials
- 83 countries; 86 medal events
- 18,500 volunteers
- 10,800 registered media
- **14,500 security personnel**
- 1.6 million tickets
What were we worried about?

• Influenza, influenza, influenza
• Gastrointestinal illness (especially in ‘accommodation vessels’)
• Protests and tear gas
• Injuries from cold
• Anti-Olympic protestors
• Terrorism events: very low risk
Infection Prevention and Control

• Medical sites
  – Polyclinics
  – Venue medical

• Accommodation sites
  – Athlete’s Village
  – Accommodation vessels
  – Worker accommodation

• Food Service
  – Villages
  – Venue
  – Community

• Sanitation
The pH1N1 pandemic and 2010

- Influenza was identified as a high potential risk
- Plans made and exercised
  - Exercise Bronze and Silver “severe season”
  - Exercise Gold
- Communication through the past 6 months
  - VANOC medical
  - IHEP
  - Federal HP
Guidance for pH1N1 and MGs

- WHO VIAG and PHAC guidelines
- Focus on:
  - Public health communications
  - Surveillance
  - Laboratory detection
  - Environmental hygiene
  - Antivirals
  - Vaccination
Key Public Health Messages

• Hand Hygiene
• Cover cough
• Stay home if you are sick

• Cough etiquette signs at venues
• ABHR, handwashing sinks
• Measures to avoid crowding
• Enhanced environmental cleaning
Surveillance

- VCH PHNs at Polyclinics
- Access to rapid influenza testing
- Outbreak detection and response
- Laboratory surveillance at BCCDC PH lab
- Ongoing provincial surveillance to supplement VCH local initiatives
- Accommodation vessels and key hotels
Vaccination

- Recommended for all BC residents
- All VANOC employees: both pH1N1 and seasonal
- All 2010 volunteers (either before or on arrival)
- Messages from VANOC to all teams about vaccination (14 days before arrival)
- Messages in Visitors Guide
Management

• Availability of antivirals at Polyclinics and in the community
• Well established outbreak protocols
• Processes for isolation (and care) of individuals who become ill (especially security staff, athletes etc)
Sentinel Physicians: Influenza-Like Illness

Percentage of Patient Visits due to Influenza Like Illness (ILI) per 1
Compared to Average Percentage of ILI Visits for the Past 19 Sea:
Sentinel Physicians, British Columbia, 2009–2010

**Data subject to change as reporting becomes increasingly cc**
Respiratory specimens submitted to BC Provincial Laboratory and positive for Influenza Virus by week, BC, 2009-2010
Laboratory Reports – Norovirus Outbreaks
Number of calls for ambulance services for Overdose / Ingestion Poisoning (February 28 to March 6, 2010)
Percentage of BC HealthLink Calls for Enteric Illness among all callers in BC (compared to seven day moving average) February 14 to March 20, 2010
What Happened?

- GI illness in RCMP week before the Games
- Noro OB in Workers accommodation
- ‘poisoning’ reports at skytrain station
- Increased ED visits for assaults/overdose Feb 20/21 and 26/27
- Leprosy
- Apparent STI on accommodation ship
- No influenza!
- 15 Gold medals
Measles in BC: a post party problem?
Measles

- 71 confirmed, 4 clinical cases (April 30)
- Highest number in a decade: 42 cases in 2000; 2002-2009 0-4 reported cases per year
- Age range: 5mos-64 years (mean 22 years)
- Rash onsets: 9 March-18 April, 2010
Measles EpiCurve

- **Date of rash onset**
- **Number of cases**
  - Suspect
  - Clinical
  - Epi-Linked Confirmed
  - Lab Confirmed

Note: date of rash onset is missing for 9 cases
Measles Rash Onset Date by Immunization Status
lab confirmed and epi-linked cases

- two doses
- one dose documented
- one dose
- unknown
- unimmunized

Note: date of rash onset is missing for 5 cases
Thank you

Merci