Public Health Legacy: Experiences from Vancouver 2010 and Sydney 2000 Olympic and Paralympic Games

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Introduction

This paper will focus on an issue that has come up in the literature and through previous country experiences — the concept of a lasting public health legacy resulting from preparing for and delivering international sporting events. Legacies are left behind long after the sporting event has ended, and may be tangible (e.g. Olympic venues) or intangible (e.g. improved collaboration between various parties) in nature. Regardless of the type of legacy, benefits to public health are achieved for host countries through such large scale events.

The following position paper will discuss the public health legacy issues and lessons learned by experience gained in Australia through hosting the Sydney 2000 Olympic Games (the Games of the new Millennium) and through preparations in Canada for the Vancouver 2010 Olympic and Paralympic Games.

Information is organized around the broad themes laid out for this Workshop including:

1. Emergency preparedness and response;
2. Public health surveillance; and
3. Health promotion.

Australia: Sydney 2000 Olympic Games

Australia has had various experiences with planning and delivering international sporting events, including the Sydney 2000 Olympic Summer Games, the Rugby World Cup in 2003 and the Commonwealth Games 2006 in Melbourne.

Many public health legacies exist from the Sydney 2000 Olympic Games, which can provide a template for managing large scale sporting events and enhancing the management of emergencies including day-to-day public health. The legacies that had an impact on emergency preparedness and response and public health surveillance are described below.

1. Emergency Preparedness and Response

Olympic Coordination Centre: The establishment of the Olympic Coordination Centre allowed for a whole of government approach to the management of incidents and emergencies. It also allowed an interface with the Sydney Organising Committee for the Olympic Games (SOCOG) and the State Emergency Operations Centre which continues today. There is also an interface with crisis and consequence management agencies. The Premiers Department has continued to co-ordinate events through a major events unit (Office of Protocol and Special Events) which ensures all stakeholders are consulted and whole of government planning implemented.

Medical/Clinical Care: Significant upgrades to hospital preparedness for chemical, biological, and radiological (CBR) emergencies occurred in Sydney before the 2000 Olympic Games. Prior to this time, Sydney had little capacity to deal with such incidents in hospitals. Hospital enhancements included: respirators, masks, antidotes, and decontamination showers. Some statistics from the 2000 Olympic Games in Sydney are described below.
Cases Treated in Hospital during the 2000 Olympic Games, Sydney, Australia

<table>
<thead>
<tr>
<th>Case Type</th>
<th>Number of Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Athlete</td>
<td>88</td>
</tr>
<tr>
<td>Olympic Family</td>
<td>144</td>
</tr>
<tr>
<td>Workforce</td>
<td>201</td>
</tr>
<tr>
<td>Media</td>
<td>97</td>
</tr>
<tr>
<td>Spectators</td>
<td>207</td>
</tr>
<tr>
<td>Other</td>
<td>32</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>769</strong></td>
</tr>
</tbody>
</table>

Total Admissions: 184 (compared to 63 at 1996 Atlanta Olympic Games)

Pre-hospital and ambulance service during the 2000 Olympic Games, Sydney, Australia

<table>
<thead>
<tr>
<th>Case Type</th>
<th>Number/Percentage of Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Patient encounters</td>
<td>817</td>
</tr>
<tr>
<td>Spectators</td>
<td>41%</td>
</tr>
<tr>
<td>Athletes</td>
<td>19%</td>
</tr>
</tbody>
</table>

Other medical care statistics during the 2000 Olympic Games, Sydney, Australia

<table>
<thead>
<tr>
<th>Type of Medical Care</th>
<th>Number of Encounters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyclinic</td>
<td>14,000</td>
</tr>
<tr>
<td>Olympic venues</td>
<td>9,282</td>
</tr>
<tr>
<td>Olympic related events</td>
<td>2,646</td>
</tr>
</tbody>
</table>

General statistics on the Olympic Stadium during the 2000 Olympic Games in Sydney include:

- 118,000 capacity
- 1.9 million in 8 days
- 100-120 people treated per session (50% first aid)
- 5 to 7 transferred each session to hospital
- No deaths

Overall, during the 2000 Olympic Games, there was an improved interface between ambulance service, other agencies, and hospitals.

Other medical/clinical care legacies resulting from the 2000 Olympic Games include:

- The Olympic Counter Disaster Unit was established for the Olympics and disbanded soon after. This Unit had to be re-established following September 11, 2001 and the anthrax attacks.
- Training and equipment purchased for the Disaster Medical Assistance Teams for the Olympics have been used for other incidents, including overseas deployments to the Asian tsunami and Yogyakarta earthquake.
- The Spectator Care and Live Sites Model was developed and continues for other large scale events and regular events held in Sydney annually (e.g. New Years Eve celebrations). The Spectator care model includes security screening, security lockdown of venues, and a balance between overscreening and underscreening so that large queues do not develop. Pre-deployed disaster medical teams are waiting to be brought in to support ambulance services should an incident occur. For live sites, the main concept is “managed access” which allows areas to not be inundated with people and includes corridors for emergency service vehicles.
Experience in managing VIP's was vital for APEC 2007. This includes having arrangements in place for a dedicated VIP hospital, and pre-positioned disaster medical teams with the ability to deploy into the designated security area. For example, an ambulance travelling parallel to a VIP motorcade.

Planning for and delivering the Sydney 2000 Olympics have left a positive lasting legacy benefiting not only Sydney, but all of Australia. Considering that the Games have been over for seven years, public health legacies have had the opportunity to make an impact on the planning and delivering of other international mass gatherings in Australia, including responding to emergencies abroad.

2. Public Health Surveillance

Prior to the Olympics, there was no emergency department syndromic surveillance system. A paper based system was established as the Olympic Surveillance System with 15 emergency departments monitoring for sentinel events. Sentinel events monitored (23% of all emergency department presentations) included: bloody diarrhoea, vomiting, pneumonia, febrile with rash, and pertussis/meningitis/viral hepatitis.

<table>
<thead>
<tr>
<th>Reported Outcome</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency Department presentations</td>
<td>12,754</td>
</tr>
<tr>
<td>Notifiable conditions</td>
<td>930</td>
</tr>
<tr>
<td>Medical consultations on cruise ships</td>
<td>1,164</td>
</tr>
<tr>
<td>Consultations at venue medical centres</td>
<td>12,000</td>
</tr>
</tbody>
</table>

This surveillance system was later enhanced for the Rugby World Cup where 12 of 49 Emergency Departments in the Sydney metropolitan area automatically transmitted surveillance data from their existing information systems to a central database in near real-time. During the Rugby World Cup the system did not identify any major public health threats associated with the tournament, mass gatherings or the influx of visitors. This was consistent with evidence from other sources, although two known outbreaks were already in progress before the tournament. As a result of hosting these international sporting events, all emergency departments in Sydney and other major centres in New South Wales now transmit data.

Canada: Vancouver 2010 Olympic Games

As public health legacies remaining from the Sydney 2000 Olympics have benefited Australia when planning for future mass gatherings, it can be said that legacies from all previous Olympic Games have had an impact on planning for future international sporting events around the world. The Vancouver Organizing Committee (VANOC) for the 2010 Olympic and Paralympic Winter Games have looked to best practices from various Olympic Games while planning for this large international event.

According to VANOC, the central theme while bidding for and hosting the Vancouver 2010 Games is to create sustainable legacies. These legacies will be felt in host communities, the province of British Columbia, and the rest of Canada long after the
2010 Olympic and Paralympic Games have ended. Considering that the 2010 Olympic Games are over two years away, organizers continue to plan for legacies. Whether or not these legacies materialize after the Games have ended will remain to be seen.

Various public health issues and opportunities for improvement have arisen while preparing for the Vancouver 2010 Games. It is hoped that planning for and delivering the Games will leave legacies that will have an impact on emergency preparedness and response, public health surveillance and health promotion in Canada and abroad. These experiences are described below.

1. **Emergency Preparedness**

   **Collaboration and Coordination:** As the Australian example shows, planning for any international mass gathering requires a collaborative approach by all partners in all aspects of preparing for the event. In the case of planning for an international sporting event in Canada, this collaboration should be between various levels of government (e.g. federal, provincial and local), between public health and the security world (e.g. police), and between public health and other partners (e.g. community and Aboriginal groups).

   Planning for the Vancouver 2010 Olympic Games has taken collaboration to a new level. Since the bid phase, a multi-party approach to hosting the Games has been paramount to VANOC’s strategy and is reflected in a variety of agreements and commitments. For example, the *Multi-Party Agreement for the 2010 Olympic and Paralympic Winter Games* and the *Inner-City Inclusive Commitment Statement* mark the first time an Olympic Host City has developed multi-party statements during the bid phase of the Olympic and Paralympic Games. Additionally, since many of the Olympic and Paralympic events will be held on First Nations lands, Aboriginal communities have been involved in planning for the Games since the bid phase.

   Through strong working relationships between federal, provincial, and Vancouver Coastal Health Services, VANOC will offer full public health evaluation for illness surveillance, food, water and air quality plus disaster planning, including the utilization of a mobile field hospital at Whistler. VANOC has also developed excellent working relationships with the BC Ministry of Health, the BC 2010 Games Secretariat, Vancouver Coastal Health and the BC Ambulance Service. Memoranda of Understanding and Agreements are being established with the BC Ministry of Health, BC 2010 Secretariat, Vancouver Coastal Health, BC Ambulance Service and Sport Med BC. In addition, this program has been integrated with the Provincial Emergency Preparedness Plan and also with support from the federal government for public health illness surveillance and with a biological laboratory and field hospital at Whistler, in the event of an intentional, accidental or natural disaster.

   Additionally, strong working relationships have been developed between the public health community and the security community throughout the preparations for the Games. Planning for such a large international sporting event provides an opportunity for heightened cooperation and integration between the public health and security communities in the event of a bioterrorism incident. This cooperation also includes an improved understanding of each others culture and processes. Such improved relationships, cooperation and integration help develop the resource base for future collaboration for large international mass gatherings.
Medical/Public Health Infrastructure: Considering best practices from previously held Olympic events; it is hoped the 2010 Olympic Games will leave a lasting impact on public health infrastructure in the Province of British Columbia and in Canada as a whole. Athletes will receive necessary medical coverage through polyclinics set up in each Olympic village, plus athlete medical stations located strategically at each competition venue, along with teams of mobile medical and paramedical personnel.

Through collaborative agreements, the Government of Canada will provide mini-clinics including the medical supplies and equipment necessary to operate the clinics, and stretchers and blankets which can serve as medical beds. A mobile laboratory will also be positioned and staffed that is capable of rapidly processing environmental specimens using PCR technology in order to detect the presence of biological agents. This will provide on-site capacity for the timely diagnosis of bioterrorism-associated infectious agents in advance of laboratory confirmation. A potential best practice involving the Government of Canada concerns the provision of the Health Emergency Response Teams (HERT) during the Games. VANOC has approached the Public Health Agency of Canada (PHAC) to provide support for a medical trauma unit to be used during the Games. If the Government of Canada agrees to this arrangement, the partnership will allow the medical equipment to be used by VANOC in the short-term (i.e. during the Olympic Games) and the province of British Columbia and PHAC (as needed) in the long-term. Functioning during the 2010 Games would be an excellent exercise for this new medical trauma unit, allowing for a variety of tasks, but without the urgency of full-scale emergency.

An integrated emergency and disaster planning committee has linked VANOC, Vancouver Coastal Health Emergency Management, Vancouver General Hospital Trauma Centre and the Provincial Emergency Planning Group. Specific emergency planning will occur at each venue. Table top exercises will occur, along with Test Events for full simulations of disaster/emergency situations at Vancouver and Whistler. The Government of Canada will provide training for staff in the use of mini-clinics, chemical-biological-radiological-nuclear training for local and provincial first responders, new quarantine officers, laboratory workers staffing the mobile clinic and the emergency Response Assistance Team.

Such planning, cooperation, training and exercise simulation will not only benefit the Games, but also improve readiness in the event of an emergency, for British Columbia and for the rest of Canada in the future. In addition, after the Games, certain medical equipment used in the Olympic and Paralympic Villages, and at the venues, will be turned over to a number of communities.

2. Public Health Surveillance

Planners for the Vancouver 2010 Olympic Games looked to best practices from the Sydney 2000 Games, the Salt Lake City 2002 Games and the Torino 2006 Games for inspiration when improving the public health surveillance system. The Vancouver 2010 Olympics will include an electronic surveillance system that will link various surveillance systems and data to all polyclinics and venues. Daily surveillance reports will be generated that will include data from the vicinity of the Games and beyond, including a website that will include communicable disease outbreaks, air quality, water quality, and the weather forecast.
While the province of British Columbia and local public health authorities will primarily be responsible for creating the surveillance system, the Government of Canada will provide assistance as required in the form of expertise, databases and manpower. Additionally, the Global Public Health Intelligence Network (GPHIN) and the Travel Medicine Programme will provide ongoing surveillance of global public health events relevant to the Olympics and will disseminate this information to public health officials through a secure website. GPHIN will increase monitoring six months prior to and three months after the Games as well as being staffed around the clock during the Games, requiring increased staff and training.

3. Health Promotion

Planning is underway for various initiatives at all levels of government to link health promotion activities to the 2010 Games. For example, in British Columbia, the provincial government in conjunction with a non-governmental organization, the BC Healthy Living Alliance, announced a funding initiative worth $22 million aimed at promoting healthier lifestyles for British Columbians. This initiative is intended to accelerate the work of existing health and welfare programs in British Columbia to help the province meet its target of being the healthiest jurisdiction to host an Olympic Games. Strategies include working with family physicians to link inactive and overweight adults with activity groups in the community, working with municipalities to create safe, affordable recreation choices, including walking and cycling paths and activity clubs and working with schools to help children and youth reduce their consumption of sugary drinks and junk food.

Other health promotion activities are being planned through a joint initiative between VANOC, Vancouver Coastal Health and the International Olympic Committee. Such activities that are currently in the planning stage include tobacco control (“smoke-free games”) and HIV/AIDS awareness.

The Federal Government is also in the planning stages of linking health promotion to the 2010 Games through seeking out opportunities to promote physical activity and planning to use seasonal initiatives to raise awareness of how Canadians can take their first steps to improving their health through increased physical activity.

In addition, through financial investments by both the federal government and the Province of British Columbia, sport facilities being built for the Olympic Games will create summer and winter sport, community and recreational legacies after the Games have ended. Certain assets, such as sport equipment, will be donated to youth, National Sport Organizations, persons with disabilities and inner-city and Aboriginal communities for their ongoing use, with the hope of encouraging increased physical activity among those populations.

Conclusion:

Public health legacies are visible long after an international sporting event has ended. These legacies or best practices help inform other countries during the bid phase and during the planning and delivering of a large sporting event. In Australia, public health legacies remain following the Sydney 2000 Olympic Games particularly in areas of increased coordination, an enhanced surveillance system and improved medical/clinical care systems. Best practices in all these areas have been helpful for future mass
gatherings in Australia, and also abroad. While Canada is still in the planning stages for the 2010 Olympic Games, the concept of a public health legacy has not been overlooked. It is anticipated that legacies will remain in the areas touched upon today: emergency preparedness and response, public health surveillance, and health promotion.

Overall, by looking at the Australian and Canadian experiences, future countries will benefit most from:

- Including all partners at the table, during both the planning and the delivering stages.
- Through the development of ongoing relationships with various partners (e.g. public health and security).
- Through forward thinking – forming agreements that will benefit not only the event in question, but will also provide benefits in the future.

The lessons learned by all countries in planning for delivering an international sporting event provide an excellent opportunity for future bid-countries to learn and build upon past countries experience.
References


Hansen, D., (2007) $22m plan aims to make one million healthier in B.C.; The new provincial initiative to improve the overall health of British Columbians focuses on four key areas. Vancouver Sun.


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