

Crowd Generated Collapse of the Barricades: A Response to Multiple Casualties During LiveCity Yaletown, Olympic Winter Games 2010

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BACKGROUND

- As part of the 2010 Vancouver Olympic Winter Games, the City of Vancouver hosted two large outdoor entertainment venues known as LiveCity. These fenced, outdoor areas featured live music, sport coverage, and family entertainment areas and were provided free of charge to the public.
- Livecity Yaletown (capacity 9,000) and Downtown (capacity 4,500 persons) were both situated in the city center with easy public transportation and access to all the major sites and venues for the Olympic Games.
- Major sponsors (Acer,® Coca-Cola,® Panasonic,® and Samsung®) hosted interactive pavilions for attendees at the Yaletown site, while world renowned musical artists performed on the Live stage. The nightly celebrations concluded with a fireworks display, serving as a major attraction for visitors.
- On Tuesday, Feb 16, 2010, at 2120, 90 seconds into the first song of Ontario alternative-pop band Alexisonfire, a 15m section of the 46-m stage front barricade holding back the crowd surge, collapsed leading to multiple casualties.

SITE MAP

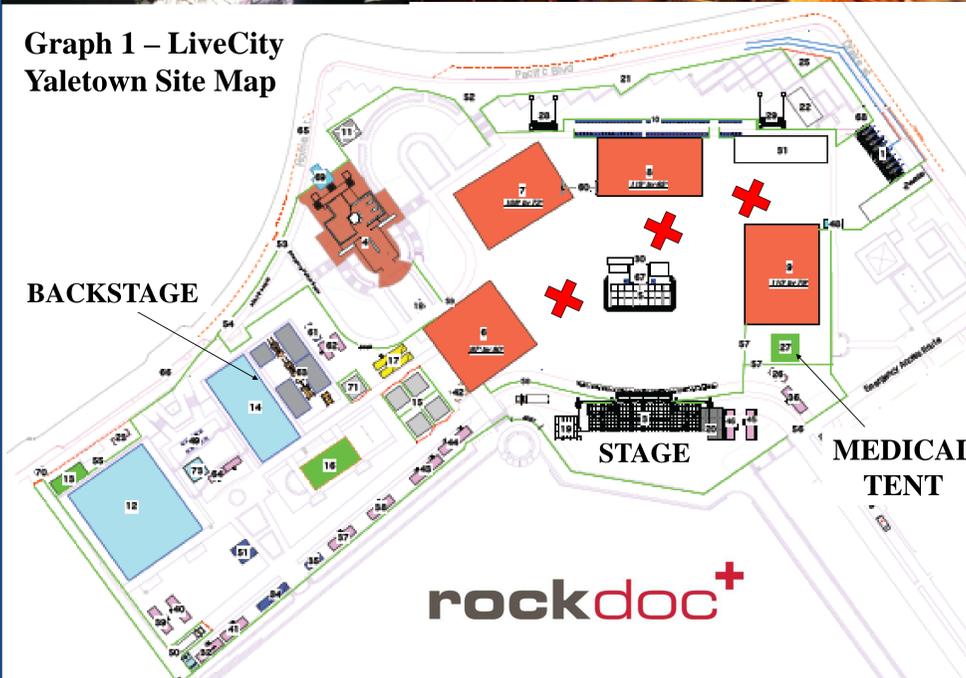
The outdoor fenced area included a stage, 2 large video monitors, and 4 sponsor pavilions, as well as food and vendor booths for the patrons (See Graph 1).

TEAM & EQUIPMENT

- Onsite medical coverage for both LiveCity locations was contracted to Rockdoc Consulting Inc.™ and included emergency physicians (2), resident physicians (2) (available through the Mass Gathering Medicine elective available at UBC, <http://www.ubcmgm.ca/site/Education.html>), nurse practitioner (1), registered nurses (3), physiotherapists (1), (occupational) first aid attendants (5).
- A fully stocked 30x30' medical tent was located at stage right (Graph 1); three roving medical teams continually circulated throughout the venue. The roving teams communicated with a medical dispatcher via two-way radios and BlackBerry® text messaging utilizing Google Talk chat functionality.
- In addition to basic first aid services, the team was equipped with both BLS and ACLS equipment, parenteral medications, advanced wound care and splinting equipment, and disaster response capacity. The mandate was to reduce the impact of the event on local emergency services and ERs.



Graph 1 – LiveCity Yaletown Site Map



RESPONSE

- After the collapse, within ~ 60 seconds two teams were deployed each with 1 ER physician and 1 resident – 1 team in command of the incident at the stage front and one at the medical tent. All Rovers were re-located to the stage front and 2 non-medical operations staffers were also deployed at the stage front to assist with patient transport.
- The performers immediately recognized the incident taking place and implored the crowd to cease surging forward. They quickly announced cancellation of the concert enabling rapid triage and transport of the injured patients to the medical tent. Event Security and police established a perimeter and pushed back the crowd.
- The incident scene was cleared in <20 minutes. Subsequently, the medical tent was cleared within 75 minutes. Direct MD to EMS supervisor communications led to orderly transfer of patients to ERs using 8 regional ambulances. Patients were transferred in order of acuity.

CASES

- Pre-hospital care provided to over 200,000 attendees over 19-days at Livecity was prospectively captured using a UBC MGM Event & Patient Registry.
- Overall, Patient Presentation Rate (PPR) at Yaletown city was 3.7/1000. On the night of the barricade collapse, this number increased to 5/1000.
- Twenty simultaneous high acuity presentations resulted from the barricade collapse. Most were transported to and assessed in the medical tent (n=19). The majority of the patients were spectators (n=18); 2 were LiveCity staff. The mean age was 18 (range 17-30, median 19). All injuries were coded as “major.” Sixty percent of the patients were female.
- “Extremity pain” was chief complaint in 85% of cases. 15% were lacerations. Three patients had significant degloving-type injuries of the lower extremities with exposed bone, initially thought to be compound fractures.
- Eight (40%) patients were transferred to the ER via ambulance (8 walked home, 4 unknown, discharged in own care).
- Adequate planning and preparation deferred 9 -12 ambulance transports.

DISCUSSION

- Appropriate appreciation of risk by event producers allowed a small-scale MCI at an event with global profile and risk, to be managed successfully with no negative media scrutiny and no legal liability allegations.
- Strategic planning, placement of the medical assets, multiple complimentary communication modalities in the setting of high ambient noise, and presence of an experienced medical team allowed rapid response and definitive on-site care.
- Mass gatherings have inherently increased risks and an incidence of injury/illness above expected baseline for a similar dispersed population.
- Appropriate planning for expected crowd needs, AND the capacity to respond to disasters/MCI's are an essential part of good MGM planning.
- Education of both event producers and agencies that grant event permits is required to promote appropriate risk assessment and deployment of on-site medical response teams at all mass gatherings. Local, provincial, and national advocacy is required to ensure adequate legislation to protect public safety and preserve response capacity for the public at large.