Medical support for the 2009 World Police and Fire Games:

A descriptive analysis of a large-scale participation event and its impact

Samuel J. Gutman, MD CCFP(EM)
Adam Lund, BSc, MD, MDE, FRCPC
Sheila A. Turris, RN, PhD

Disclaimer

- Dr. Samuel J. Gutman is the President of Rockdoc Consulting Inc.
- Dr. Gutman was the Chief Medical Officer for the 2009 WPFG.
- Rockdoc Consulting Inc. was paid a fee to coordinate the provision and delivery of medical services for the 2009 WPFG.
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MGM MASS GATHERING MEDICINE

Mass Gathering Medicine

- Definition -Provision of medical support at a Mass Gathering
  - "A Mass Gathering is: An event during which crowds gather and where there is potential for delayed emergency response"
- Crowds have predictable, higher health care needs than same population in other circumstances
- Known variables impact :
  - Patient Presentation Rate (PPR)
  - Ambulance Transfer Rate (ATR)
  - Transfer to Hospital Rate (TTHR)
  - Medical Transfer Rate (MTR)

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World Police & Fire Games

- Held bi-annually around the world
- Vancouver 2009- **Largest ever 10,599 athletes**
- 55 countries represented
- 10 days, 64 events spread over 327 km of southwestern BC – population base 2.27 million
  - Winter and summer sports
  - Open to all non-military and non-private firefighters, police, corrections, border, customs and immigration officers
- Open access for spectators. Free of charge

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Challenges

- Mass gathering/mass participation sporting event with international attendance
- Large geographic footprint
- Small Budget, Volunteer workforce
- Requirements of WPFG Federation
- Mandate to minimally impact existing emergency services
- **BCAS labor dispute**
  - **No dedicated Ambulances/decreased response capacity**

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Medical Team

- Volunteer medical staff provided a nominal honorarium
- 270 individuals from a wide variety of health professions
- Attended a 2-hour orientation session and provided with medical team manual.
- Objective to assess, treat, and safely return to competition those individuals presenting for care.
- To provide required advanced treatment lab or diagnostic imaging without significantly impacting strained EMS system & local emergency departments.

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Medical Team Infrastructure

- 2 polyclinics -18 Beds, 7 trmt chairs
  - 11 MD, 73 NP/RNLPN, 7 Med Residents/Students
  - 25 Paramedics, 51 First Aiders
  - 104 Dental, Traditional Chinese Medicine and acupuncture, chiropractic, massage, physiotherapy services and sports taping athletic trainers & others
- Up to 4 regional roving response vehicles
- Dedicated medical dispatcher center
- 23 Administrative/Operations Staff
- 3 Operations/Logistic vehicles

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MEDICAL
Genuine Guide Gear
Genuine Guide Gear

rockdoc

Methods

- Every patient encounter at any medical facility was documented.
- Standardized medical encounter form previously piloted and used
  - a combination of narrative space and tick boxes.
- Data abstracted to an Excel spreadsheet within 12 hours of each encounter by blinded para-medical and lay volunteers

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Results

- Mean temperature was 29-34 degrees Celsius
- 1462 patient encounters documented
  - Peak 275 on August 3
- The PPR was 109.4/1000 (1462/13363 competitors and staff).
- 31 non-urgent transfers for primarily for Diagnostic Imaging
- The ATR 0.52/1000
  - 7 -911 calls.
- MTR 2.32/1000

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Discussion

- PPR 10.9%- lower than prior games
    - 27.7% of encounters for therapy and prevention
  - PPR @ Non-participation mass gathering range 0.2-1.7%
  - PPR 3.8 % at Vancouver International Marathon (Marathon range 2.5-12%)
  - TTHR was similar to prior WPFG at 2.32/1000
- ATR and MTR low
- MD on duty 589:1 (range in literature none – 5166:1)

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Conclusions

- Medical Team infrastructure provided acute and preventative care resulting in reduced PPR
- Despite challenges with access to contracted Ambulance services, 911 and local ER minimally impacted
- MDs on site resulted in low number of transfers

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Limitations

- Open to public and non-ticketed thus unable to accurately estimate population at risk
- Unable to confirm participants vs staff vs spectators
  - Anecdotally low number of staff and spectators
- Widely disseminate event no dedicated research infrastructure- unable to confirm that every encounter was captured
- No formal review of BCAS or local ER data to assess impact / no control group with no medical team

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MGM Research

- Literature retrospective and descriptive
- Factors influencing PPR and MTR identified, but not quantified or prospectively analyzed
- No consensus on personnel and credential mix
- No externally validated evidenced based guidelines exist
- **Need for a methodologically rigorous prospective database of mass gathering medical support- that would enable development of guidelines…**

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