Hospital Response to a CBRNE Event.

Challenges and Complexities
Located here in beautiful Kingston, Ontario, KGH’s workforce of 7,000 employees, physicians and volunteers is dedicated to serving the needs of more than 500,000 residents in Southeastern Ontario.

Affiliated with Queen’s University, KGH is a 456-bed teaching and Research hospital that provides specialized acute and ambulatory clinical services including trauma, cardiac, stroke, pediatric, perinatal, cancer care, end stage renal and stem cell transplants. World class research programs provide hands-on skill training for 1,900 health care students annually.
• The Protection Services Department is responsible for planning and oversight of the CBRNE, Pandemic, and hospital codes such as evacuation, disaster/mass casualty, inclement weather, hazardous spills, response to violence, Active shooter, fire safety/response, bomb threat, service interruptions, loss of utility services, infant abduction response, missing patient, air exclusion, inmate escape, and Business Continuity); Security, Life Safety, and Parking.
In 2005 Ministry of Health and Long-Term Care allocated $13.5M over three years to equip all hospital sites that offer emergency/urgent care with a standardized package of CBRN supplies and equipment.

The curriculum developed for this initiative will enable hospitals to gain an understanding of the context of CBRN events including:

1. the potential of a CBRN incident including possible targets;
2. the role of the health system as a whole, and specifically public health, in preparing for, responding to, and recovering from a CBRN emergency;
3. the role of other organizations including police, fire, and municipalities in a CBRN emergency; and
4. the Incident Management System (IMS).
KGH-CBRNE Response

Radiation Patient Treatment

Radiation Incident with Trauma or Illness

- Life Threatening Problem?
  - YES: Stabilize
  - NO

Externally Contaminated?

- YES
  - Admit to Controlled Area
  - Assess and Treat Medical Problem
  - Collect Samples for Radiological Analysis

- NO
  - Medical Event History
  - NO contamination

Identify Decontamination Priority

- 1) Wounds
  - YES: Decontaminate
  - NO: Confirmatory Survey of Entire Body

- 2) Body Orifices
  - YES: Decontaminate
  - NO: Survey and Document

- 3) Intact Skin
  - YES: Survey and Document
  - NO

Stable

- YES: Stabilize
- NO

Persistent Vomiting, Erythema, Fever?

- YES: Follow Up
  - Medical Evaluation
  - Collect Specimens

- NO: Discharge
  - Medical and Radiological Follow-up

Significant Absolute Lymphocyte Decrease or Other Medical Problem?

- YES: Follow Up
  - Medical Evaluation
  - Collect Specimens

- NO: Discharge
  - Medical and Radiological Follow-up

Baseline CBC with Diff, Serum Amylase, Urinalysis, Baseline Red Blood, Start 24 Hr. Urine Collection

Minimize Uptake or Facilitate Excretion of Contaminant

Repeat CBC and Diff every 4-6 Hrs

- YES: Persistent Vomiting, Erythema, Fever?
- NO: Transfer to Discharge

Observe for Vomiting

Discharge

Transfer to Hospital

On the Web: ori.se.orau.gov/reac/
KGH-CBRNE Response

- We have established a CBRNE program that provides training and education every 2 years for our ED, ED Physicians and Security Staff.
- Regular EOC training Table top exercises.
- We participate in ongoing research. An example: Effective Management of Children During a Radiological/Nuclear event - Center for Research in Tech. & Innovation.
- Regular exercises/drills.
• 2008- Correctional Services Canada, CFB Kingston, Kingston General Hospital, KF&R, Kingston Police, Hotel Dieu Hospital, MOE, Queens, Public Health, EMS from across the Region;

• 2011 Airport Exercise with City and Provincial Ministries participating.
• 2006-7 Full scale exercise with the Ontario Emergency Medical Assistance Team (EMAT)
• EMAT is a mobile medical field unit that can be deployed anywhere in Ontario with road access and within 24 hours. The EMAT can set up a 56 bed unit that provides a staging and triage base, and has the capability to treat 20 acute care patients and 36 intermediate care patients.
In addition, EMAT can provide:
- Patient isolation in the case of an infectious disease outbreak;
- Medical support and decontamination in the case of a chemical, biological or radiological incident; and
- Case management and triage of patients in a mass casualties situation.
The EMAT is the first of its kind in Canada and is operated by Centre for Prehospital Medicine at Sunnybrook Health Sciences Centre - a world expert in emergency and prehospital care.
Hospital CBRNE Challenges

• There remains a need to integrate community planning with hospital planning.
• KGH is the regional provider for many healthcare services, during a CBRNE event some or many services may be ramped down or stopped.
• Most hospitals operate at near capacity.
• There is no HAZMAT in Kingston. Response would come from Ottawa, Toronto area, or Cornwall.
Hospital CBRNE Challenges

• Both the CBRNE Resilience Strategy for Canada and the CBRNE Strategy for Canada recognize the importance of a HAZMAT response as first on scene responders.
• However, in the Kingston area we would have to wait 2-3 hours to get a response.
• Are there other jurisdictions in Canada?
• The majority of walking wounded and those exposed from a CBRNE event that could walk or find transport would make their way to the hospital. The hospital then becomes the primary decon site.
Hospital CBRNE Challenges

- It is vital for hospitals to be notified when a CBRNE event has occurred. They require time to set up their Decon equipment. Failure to notify hospitals would potentially result in contaminating the hospital rendering it now a potential casualty.
- Most of the Federal and Provincial resources are for first responders not hospitals. However, hospitals are intricate in the over-all response. If they are compromised then care will be delayed resulting in delayed treatment which may affect the treatment outcome including death.
Hospital CBRNE Challenges

• The sustainability of CBRNE training, education, equipment replacement and upkeep, drills and exercises, in hospitals has become very difficult for hospitals because funding in healthcare is limited to non-existent for hospitals.

• And without hospitals, during a CBRNE event, to care for the sick and dying leaves the community at risk.