

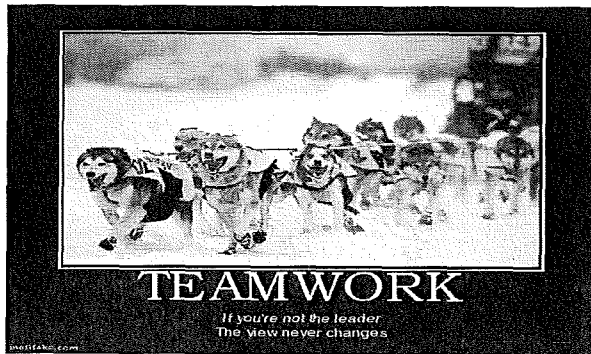
Item # 7.1

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Public Health Services
Emergency Management
Program

Overview

- PHS Emergency Management Program
 - OPHS – Framework for our program
- Opportunities for 2012-2015



Framework: What is Public Health Preparedness

- Public health preparedness refers to the field of work charged with preventing, preparing for, and responding to public health emergencies and threats

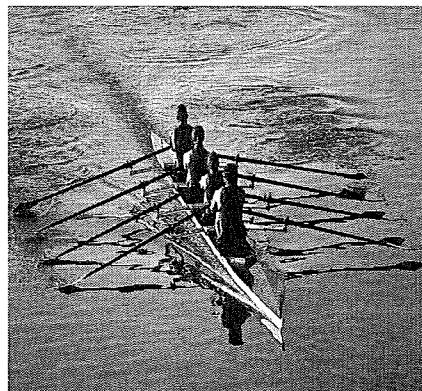


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3

PHS Emergency Management Program

- Our emergency management program is a collaborative effort from:
 - Local first responders
 - Public Health
 - Hospitals, long term care, primary care
 - City departments, industry, critical infrastructure
 - Province supports interoperability, education and training
- The OPHS support our Public Health preparedness



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4

Reasons to Prepare



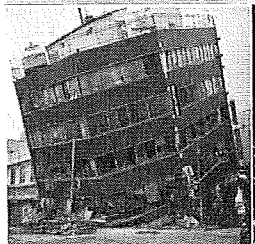
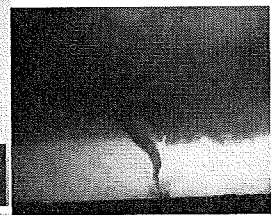
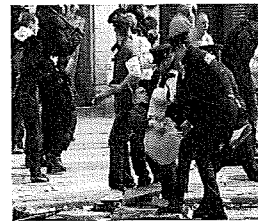
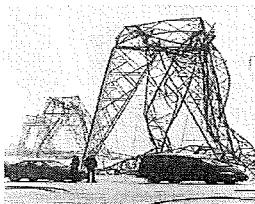
- Emergencies, large and small occur every day
- Many emergencies have a public health impact on the community



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Reasons to Prepare

- Increase in economic impact over the years



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Canada – Disaster Statistics

Data related to human and economic losses from **Natural Disasters** that have occurred between 1980 and 2010.

Overview

- No of events: 81
- No of people killed: 228
- Average killed per year: 7
- No of people affected: 168,514
- Average affected per year: 5,436
- Economic Damage (US\$ X 1,000): 13,873,100
- Economic Damage per year (US\$ X 1,000): 447,519

source: <http://preventionweb.net/english/countries/statistics/index.php?cid=31>



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7

Summary: Natural Disasters & Economic Impact in Canada (1900 to 2012)

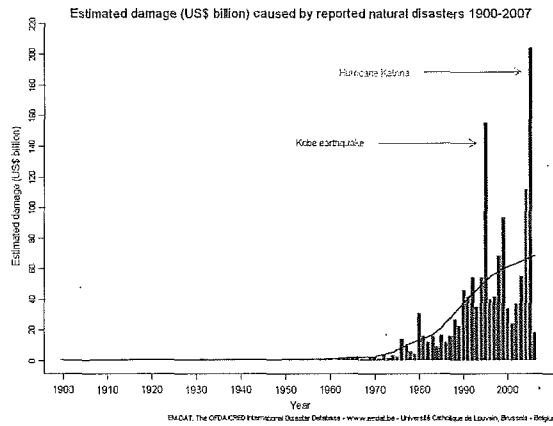
		# of Events	Killed	Total Affected	Damage (000 US\$)
Drought	Drought	5	-	55,000	4,810,000
Earthquake (seismic activity)	Tsunami	1	27	-	-
Epidemic	Bacterial Infectious Diseases	2	35	171	-
	Parasitic Infectious Diseases	1	1	399	-
	Viral Infectious Diseases	4	50,526	2,008,347	-
Extreme temperature	Cold wave	2	-	200	20,000,00
	Heat wave	1	500	-	-
Flood	Unspecified	9	4	112,800	490,800
	Flash flood	2	-	400	210,000
	General flood	23	39	66,270	2,081,100
	Storm surge/coastal flood	1	-	-	58,000
Mass movement dry	Avalanche	3	144	44	-
	Landslide	3	67	3,506	-
	Rockfall	2	94	41	-
Storm	Unspecified	13	124	5,070	1,603,100
	Local storm	19	89	10,314	1,492,000
	Tropical cyclone	8	88	203	310,100
Wildfire	Forest fire	19	119	67,600	6,462,500
	Scrub/grassland fire	1	-	5,000	-



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8

Raising Economic cost of Disasters

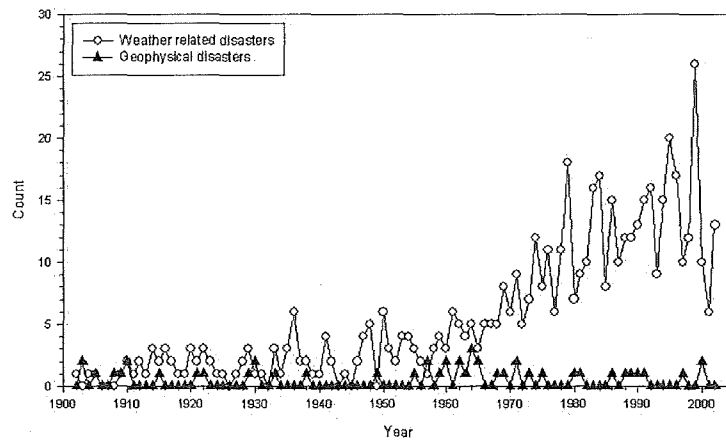


According to the Centre for Research in the Epidemiology of Disasters the cost of natural disasters has risen 14-fold since the 1950's



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Historical trends of weather related disaster in Canada: a spike



Source: Public Safety Canada (PSC) Canadian Disaster Database (CDD).

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Spike in Hot Weather – Potential for Severe Heat Wave

- In the USA - July 2012 was the hottest July since the Dust Bowl of 1936 (it was 3.3F above the 20th C average)
- New trend toward much warmer summers
 - by 2040-2049 the number of days above 30° C will increase from 20 to an average of 66
 - Number of days a year with a humidex over 40° C will rise from 8-39

Could lead to events such as:

- Russian heat wave in 2010 that killed 56,000 people,
- European heat wave in 2003 that killed 70,000 people



(Source: Protecting Vulnerable People from Health Impacts of Extreme Heat 2012 Toronto BoH Report)

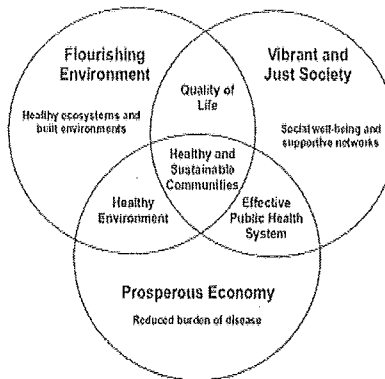
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11

Why is Public Health Emergency Preparedness Important

Healthy and Sustainable Hamilton

- **Maintain a Vibrant Society**
 - Decrease morbidity and mortality
- **Maintain a Flourishing Environment**
 - Preserve the environment
- **Encourage a Prosperous Economy**
 - infrastructure and property



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Source: Public Health Agency of Canada (www.publichealth.gc.ca)

12

Emergency Response Gone Wrong Hurricane Katrina



August 29th 2005;
resulting in:

- infrastructure damage
- flooding
- civil disorder
- fires and toxic chemical dispersion
- thousands isolated for days without water, food, or medical care



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13

Impact of Hurricane Katrina

- 1,464 Lives lost
- 900,000 People displaced
- 165,000 Jobs lost
- 16,000 Businesses flooded
- 40 Schools destroyed
- 22 million tons of debris generated
- Closure of most acute care hospitals
- **Loss of Level 1 Trauma, mental health beds and other specialty care beds**
- **Doctors and other health workforce relocated**
- **Pharmacies closed**
- **Half of nursing homes closed**

(Source: <http://www.kaiseredu.org/tutorials/katrina/player.html>)



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14

Katrina Response: What went wrong?

Katrina became a disaster because:

- Response agencies worked in silo's – lacked collaboration, coordination resulting in evacuation and transit problems
 - Evacuation problems – congestion, problems when vehicles ran out of fuel or had mechanical problems
 - No effective plan to evacuate transit dependent residents
- Never tested response plans: “*Failure to Plan is = Planning to Fail*”



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15

Emergency Response Gone Wrong Fukushima Nuclear Meltdown



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16

Emergency Response Gone Wrong Fukushima – Nuclear Meltdown

- World's third major accident at a nuclear plant
- March 11, 2012 tidal wave resulted in a meltdown in three reactors at the Fukushima Dai-ichi power station, (NE of Tokyo)
- Resulting in
 - A dozen dead towns
 - 80,000 refugees
 - Traumatized Japan



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17

Fukushima: What went wrong: planning failure?

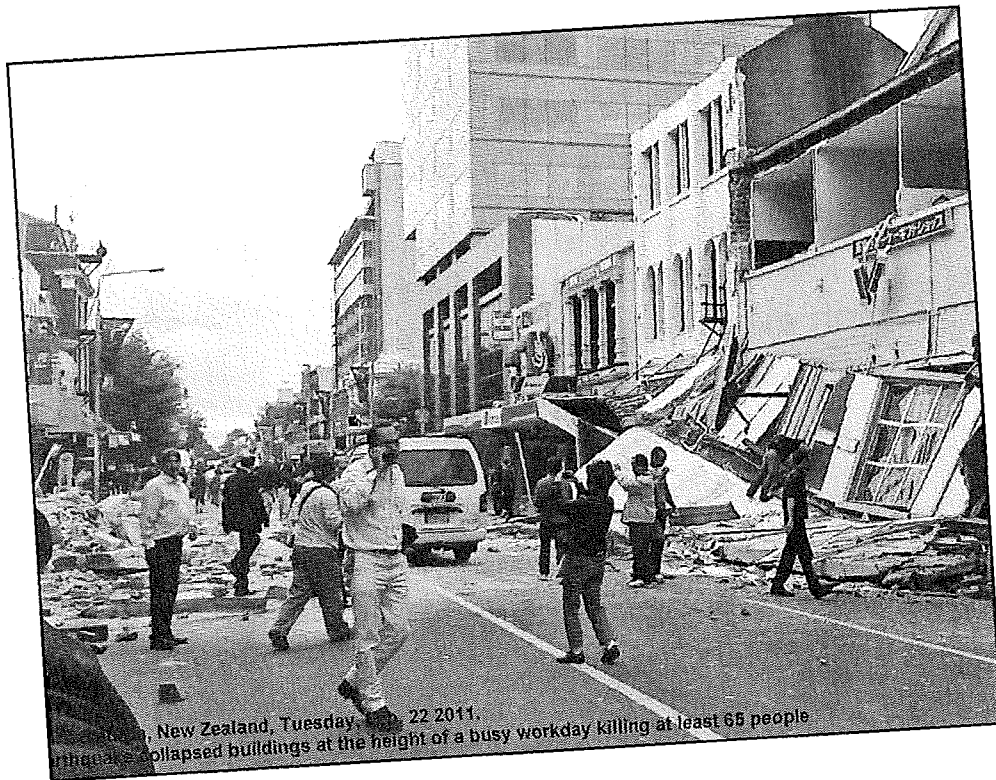
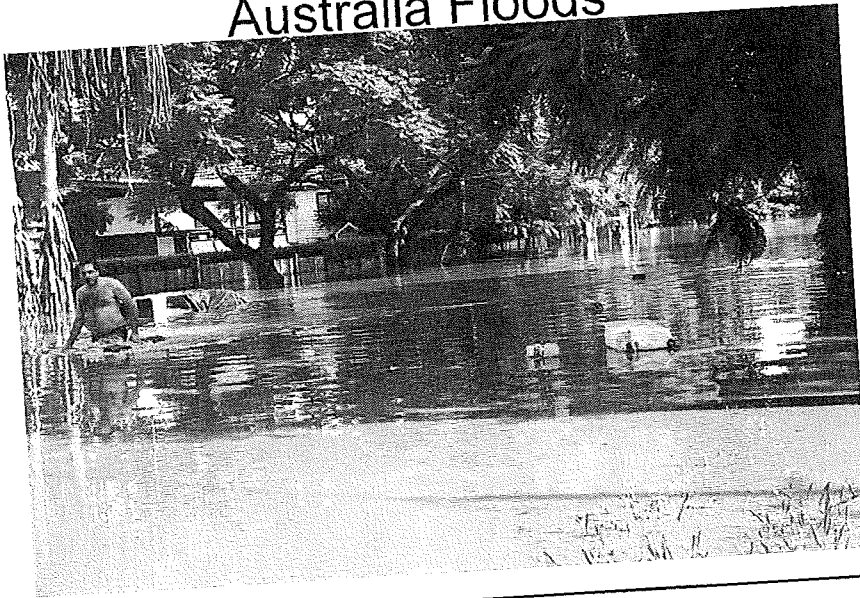
- The emergency generators was installed at low elevations (should be installed at high elevations)
- The cooling system was intended to operate without power, but not all parts of the cooling tower can be manipulated without power.
- Back-up power system failed



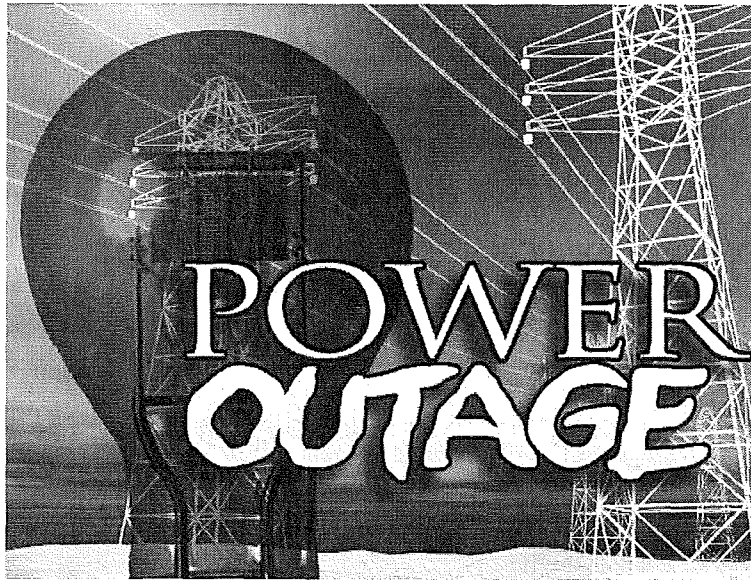
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18

Other Emergencies Australia Floods



Christchurch, New Zealand, Tuesday, Feb. 22 2011.
Thousands collapsed buildings at the height of a busy workday killing at least 65 people



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21

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Health Emergency Management

- Health emergency response is a relatively new discipline
- In Ontario the 2003 SARS outbreak created the Emergency Management Branch (EMB) at MOHLTC



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22

PHS Emergency Management

PHS initiated their emergency response planning before the ministry EMB was established

- 1999 – started with Pandemic Planning
- 2003 – SARS: recognized need for response planning
- 2004 – dedicated 100% provincially funded position established for emergency response
- 2008 – OPHS for Emergency Preparedness: mandatory program



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23

Mandate for PHS Response Planning and Preparedness

3 Statutory Components

- Emergency Management and Civil Protection Act (June 2006)
- 1990 Health Protection and Promotion Act (HPPA)
- Ontario Public Health Standards 2008

As municipal employees, we are mandated by legislation to respond to emergencies
Must prepare our PHS staff to be prepared



Are you prepared for data loss?



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24

PHS Emergency Management Program Components

- **PHS Emergency Management program Leverage support** from:
 - PHS Emergency Advisory Committee
 - Health Protection Emergency Response Committee
 - PHN and PHI Emergency Responders
- **Community Stakeholders**
 - Health Sector Emergency Steering Committee
 - Health Sector Emergency Management Committee
 - Health Sector Influenza Committee
 - Emergency Preparedness Advisory Committee
 - City Interdepartmental Emergency Management Team
 - Evacuation Planning Committee
 - PAN AM Games Planning Committee
- **Provincial Stakeholders**
 - PHU Emergency Planners Committee
 - PAN AM Games Steering Committee



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25

PHS Response to Emergencies

- Locke Street Water main break: Jan 2003
- SARS: Mar – June 2003
- Hydro Outage: Aug 2003
- Rosedale Contaminated Water: Aug 2004
- Lynden Contaminated Water: Sept 2004
- Lottridge Apartment Fire: June 2007
- H1N1 2009
- Suspicious powder (Fortino's) 2010
- Other Public Health responses to ongoing issues: rabies, food outbreak, TB and environmental health issues



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26

Emergencies: Informing our Response

- Response: Ice Storm: January, 1998
- 28 deaths attributed to Eastern Ontario ice storm (6 from CO poisoning – use of generators and charcoal grills inside the house)
- New recommendations implemented to decrease deaths due to CO
- Review of CO poisoning cases from a 2003 ice storm after implementation of recommendations
- Decrease in identified CO cases from 39% to 7%

• Reference: Lin G. Connors GO (2005) Does Public Education Reduce Ice Storm-related Carbon Monoxide Exposures? J Emerg Med: 29: 417-420



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27

Epidemiology: Informing Response

Epidemiology: Assists in our risk assessment and planning

- Syndromic surveillance: works in the detection, identification and management of emergent health hazards
- Drive our response interventions
- Can be combined with ecological studies and evaluations to contribute to practice-based evidence in recovery phase



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28

Examples of Epidemiology in Public Health Emergencies

- H1N1 – Emergency Rooms capacity during Oct. 29th to Oct. 31st 2009 reached 150%
- Triggered the opening of the Assessment Centres
- Once the ER capacity stabilized at 100% capacity, the Assessment Centres were closed



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29

Program Expectations

Ontario Public Health Emergency Preparedness Standards

Goal:

To enable and ensure a consistent and effective response to public health emergencies and emergencies with public health impacts

Societal Outcomes:

- Effective preparedness infrastructure for public health emergencies
- Increased self-sufficiency of the public and community partners during emergencies



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30

Purpose

Consistency.....

- In emergency preparedness and response across Ontario's public health system
- With provincial and municipal emergency preparedness and response programs

Integration.....

- Of emergency preparedness work with existing public health activities
- With provincial and municipal emergency plans, procedures and structures

Clarity.....

- On the emergency response and communication protocols among board of health, public health units and public health division



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31

PH Emergency Preparedness Standard and Protocol

Scope

- To support the implementation of measures that will prepare the board of health to respond to emergencies
- Focus is on preparedness, prevention/mitigation, response and recovery



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32

Requirement #1: Hazard Identification & Risk Assessment (HIRA) for Public Health

The Board of Health shall identify and assess the relevant hazards and risks to public health



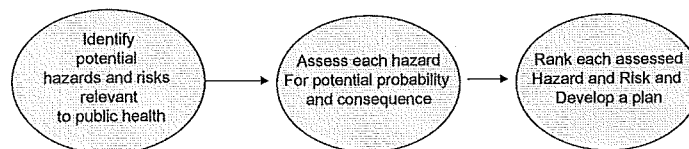
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33

Requirement #1: What does this mean to you?

- There is an awareness and plan in place for identified hazards and risks

Process



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34

Risk Factors in the City of Hamilton Relevant to PHS ◇

City of Hamilton HIRA

1. Hazardous Materials and Explosions ◇
2. Energy Supply Emergencies ◇
3. Epidemics/Pandemics ◇
4. Terrorism
5. Flooding ◇
6. Structure Fires (major) ◇
7. Tornados (windstorms & microburst) ◇
8. Transportation Accident – motor vehicle
9. Ice Storms ◇
10. Earthquake ◇



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35

Requirement #2: Continuity of Operations Plan

The board of health shall develop a continuity of operations plan to sustain the ongoing functioning of time-critical board of health services during business disruptions



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36

Requirement #2: What does this mean to you?

- Time critical services are maintained during emergencies
- Staffing is maintained at an essential level to ensure the service is provided



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37

Requirement #3

The board of health shall develop its emergency response plan, in consultation with community partners and governmental bodies to address the identified hazards for which the board of health and Medical Officer of Health will have a lead role in responding to, consistent with an Incident Management System.



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38

Requirement #3: What does this mean to you?

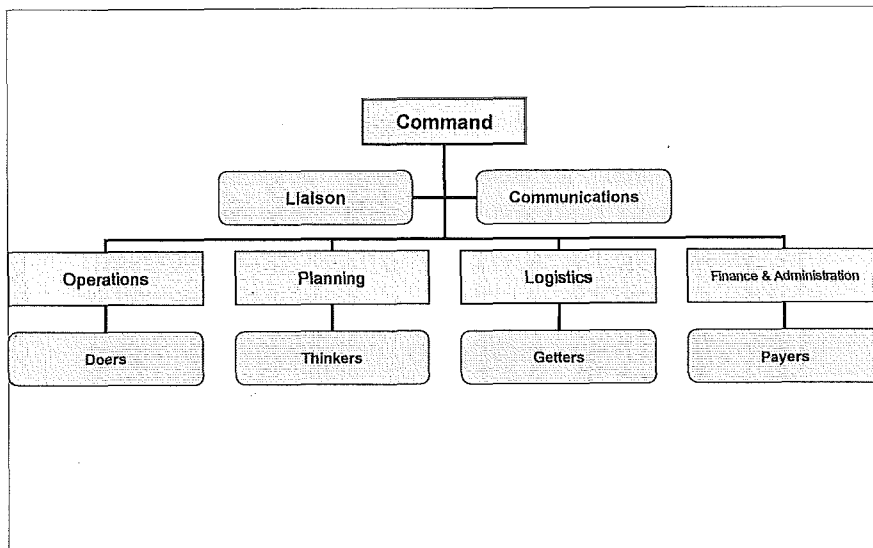
- There is a plan in place outlining procedures required to respond to an emergency
- Roles and Responsibilities
- Supporting plans (Pandemic Plan, Adverse Water, Food Outbreak)
- Notification and Response procedure
- Defines key roles and responsibilities and aligns with the Incident Management System (IMS)

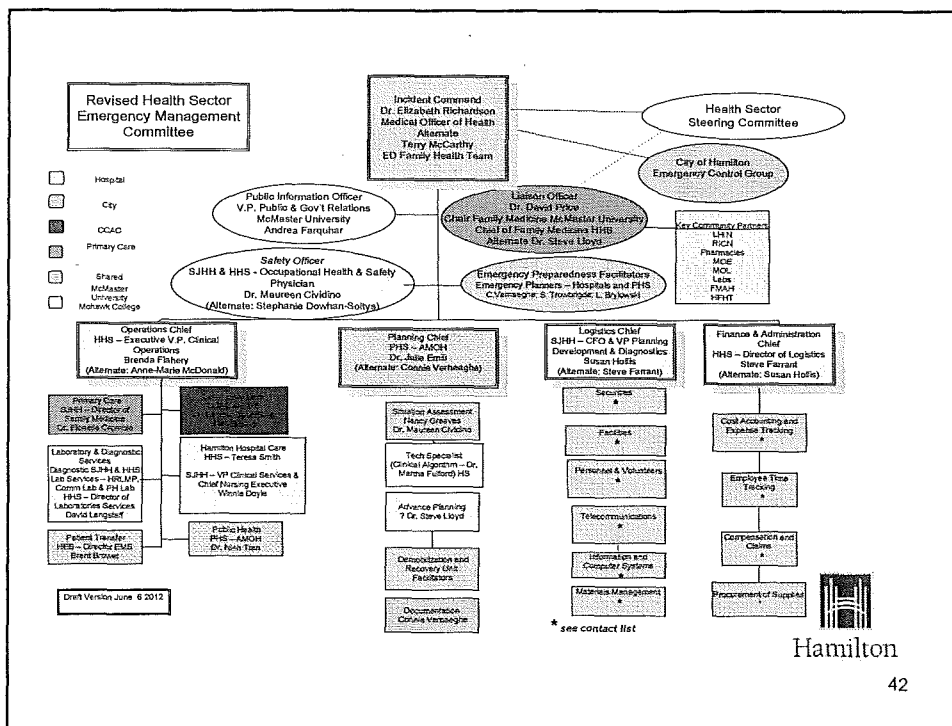
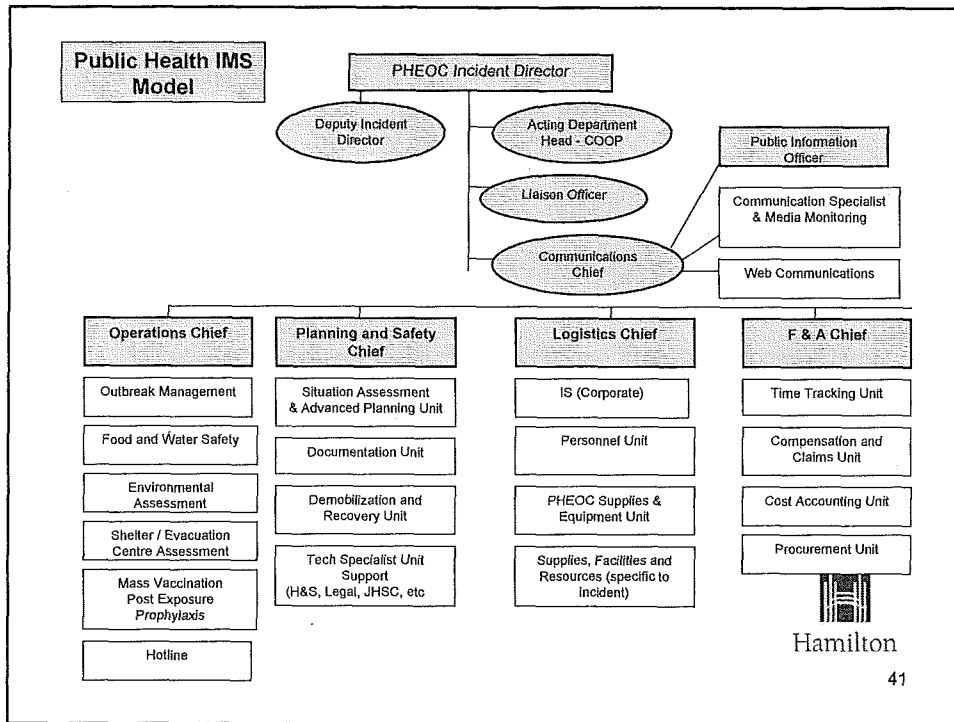


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39

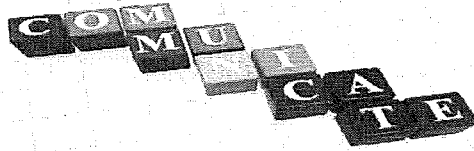
IMS Model





Requirement #4: 24/7 Notification Protocol

The board of health shall develop, implement and document 24/7 notification protocols for communications with board of health staff, community partners, and governmental bodies to facilitate the sharing of information



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43

Requirement #4: What does this mean to you?

- Two way communication within the board of health, key community partners and government bodies
- Timely and up to date information regarding relevant public health information

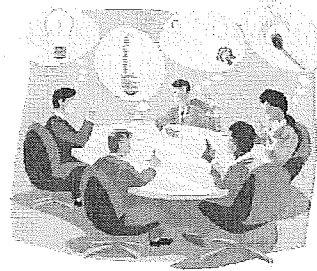


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44

Requirement #5: Public Awareness Activities

The board of health shall, in collaboration with community partners, increase public awareness regarding emergency preparedness activities.



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45

Requirement #5: What does it mean to you

- A process in place for increasing the public's awareness of emergency preparedness
- Partner with community partners: CEMC, emergency planners at hospitals and other city departments (Community Services & HES – EMS, Fire and Police) EP day

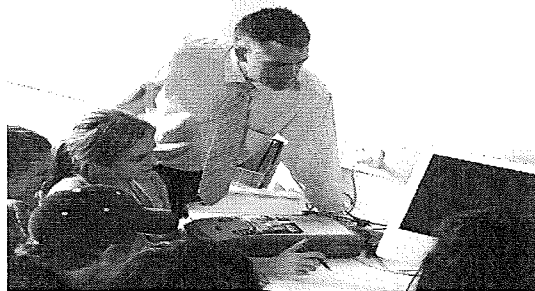


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46

Requirement #6: Education Program

The board of health shall ensure the provision of emergency preparedness and response education and training for board of health staff



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47

Requirement #6: What does it mean to you?

- Delivery of annual education sessions to board of health staff means staff are trained and prepared to respond to an emergency



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48

Staff Training

- IMS Response Functions (Command and Unit Leads defined)
- Response to Site (Anthrax, Fire, Evacuations)
- Shelter Training
- General response guidelines



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49

Requirement #7: Orientation Program

The board of health shall ensure that its officials are oriented on the board of health's emergency response plan



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50

Requirement #7: What does it mean to you?

- Awareness and knowledge of our PHS Emergency Response Plan and the components within the plan
- Confidence in PHS emergency response program
- Annually – a BOH presentation providing updates to PHS Emergency Management program

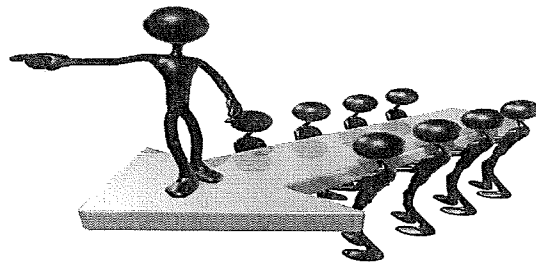


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51

Requirement #8: Exercise Program

The board of health shall exercise in whole or in part, the continuity of operations plan, emergency response and 24/7 notification procedure



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52

Requirement #8: What does this mean to you?

- PHS is prepared
- Yearly exercises
- June 22nd 2012 PHS exercise their emergency response
- Focus was on nuclear response (lost isotope-125)
- Involved community partners such as McMaster Nuclear, Radiation Safety Officer (MUMC & St. Joseph's), PHO, EMB – MOHLTC
- After Action Report outlined lessons learned and recommendations for change to improve PHS response



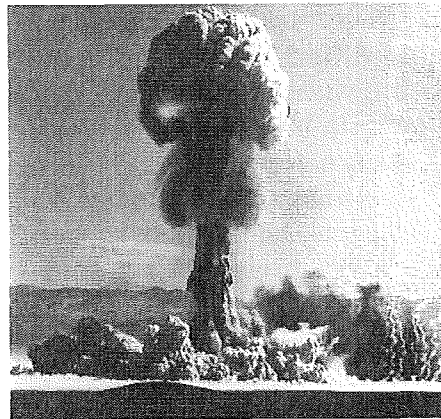
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53

Exercise Involvement

Exercise Involvement

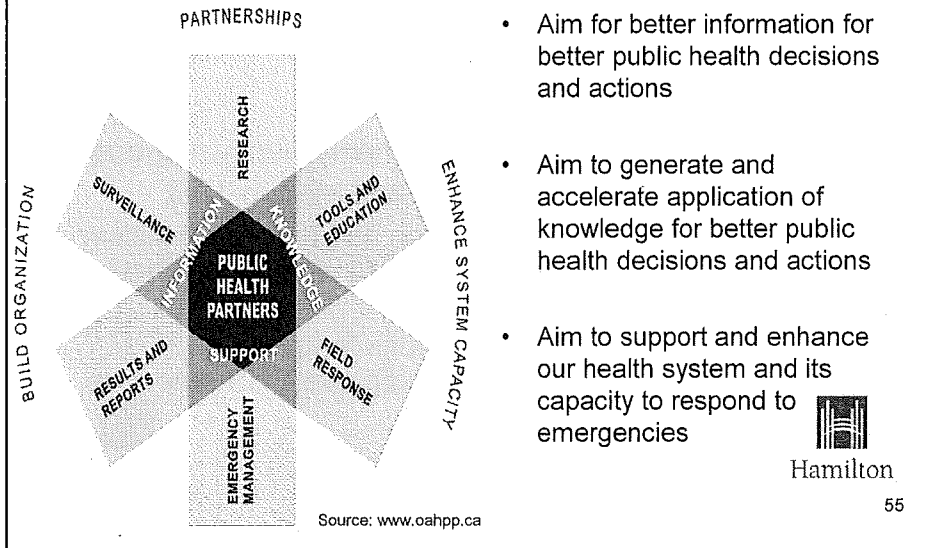
- Tornado Exercise: City 2002
- Operation Shut Down: Police Exercise 2003
- Plane Explosion: City 2004
- Gas Leak Exercise: Shell Canada 200)
- Pandemic and Train Derailment: City 2005
- Gas Leak: City 2006
- Measles Outbreak: PH 2007
- Pandemic Outbreak: PH 2008
- Flooding Exercise: City 2010
- Industrial Explosion: Provincial 2011



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54

Aim: Model Public Health Ontario Approach for the future



- Aim for better information for better public health decisions and actions
- Aim to generate and accelerate application of knowledge for better public health decisions and actions
- Aim to support and enhance our health system and its capacity to respond to emergencies

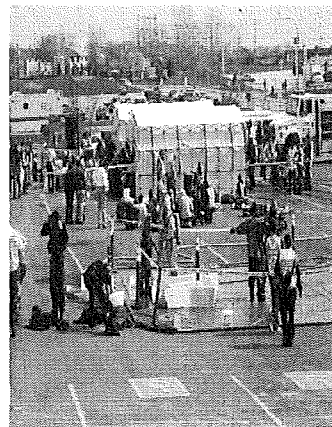


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55

Organizational Research by Lerner, 2007

- Identified “model” communities using criteria including
 - key linkages
 - use of system response
 - involvement of both public health and emergency response organizations
- Identified 7 common elements for an ideal community response



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56

7 Community Elements for Emergency Response

- ✓ Strong working relationships between leaders of the emergency care community and public health.
- ✓ Regular scheduled face-to-face meetings with personnel from public health, the emergency care community, and other possible responders including non-traditional partners.
- ✓ Education on each other expertise and role during a disaster including cross-training for some services.
- ✓ Response plans developed together and met the unique local circumstances.
- ✓ Work together on a day-to-day basis on disaster and non-disaster related activities.
- ✓ Strong leadership driving the collaboration between the emergency care community and public health.
- ✓ Shared resources and leveraged funding to accomplish their goals.

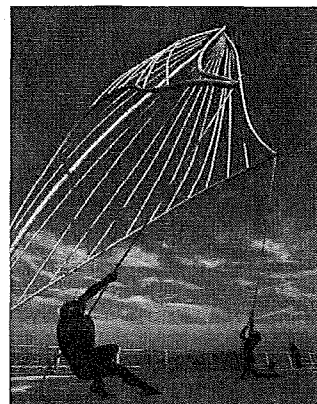


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57

Where are we Going – Opportunities to Work Together

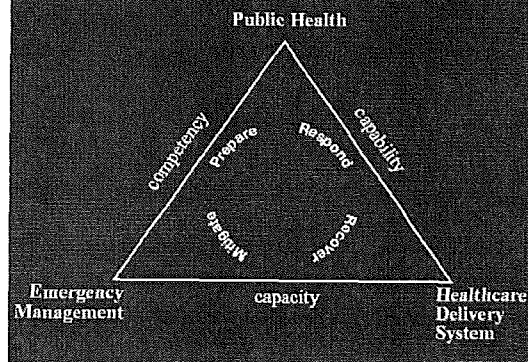
- Health care – moving from the treatment of individuals to mass casualties (planning for the PAN AM Games)
- Integrating Incident Management in health care - moving to community health settings and physicians offices
- Integrating health with non-health sector (Mohawk and McMaster) for health education programs
- Working together – with hospitals and emergency management: “The Emergency Preparedness and Response Triad”



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58

The Health Emergency Preparedness and Response Triad



From: Agency for Healthcare Research and Quality. Bioterrorism and Health System
Preparedness. Issue Brief #8. 2004. <http://archive.ahrq.gov/news/ulp/btbriefs/btbrief8.pdf>



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59

Develop a means to Evaluate

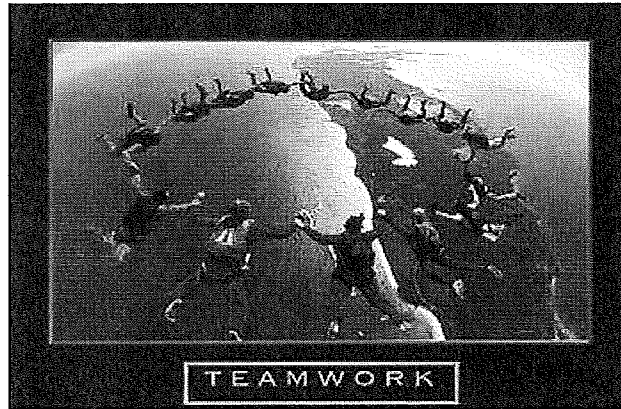
- **Interventions during an emergency response need evaluation.....**
 - **Were the affected populations assisted?**
 - **Did our message reach the public?**
 - **Did the health system deliver the service needed?**
 - **Did our response make a difference?**



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60

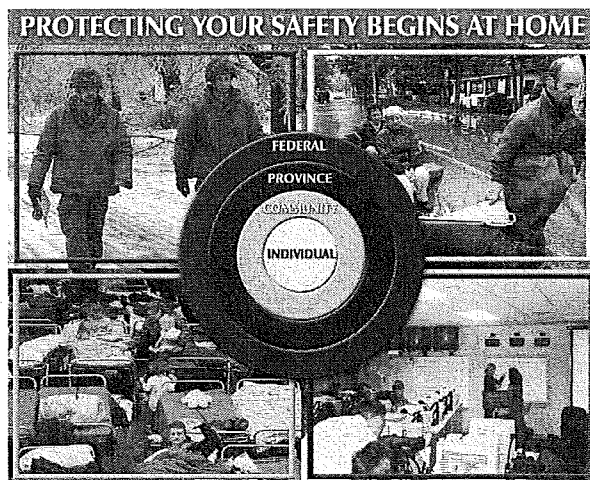
PHS Emergency Preparedness



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61

Preparedness Begins at Home



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62

11

