Emergency and Disaster Preparedness

Just when you thought you heard the last word

Presented by:

Sandra Callery RN MHSc CIC LTC CIP
No Conflicts of Interest
Learning Objectives

Review the different types of disasters that may be encountered
Discuss the impact of emergencies and disasters on staff and patient outcomes
Identify tools and resources available for the Infection Control Professional
Identify IPAC considerations when using alternative sites for delivery of care
Describe strategies for keeping disaster plans “evergreen”
What is an Emergency?

An unforeseen combination of circumstances or the resulting state that calls for immediate action.
What is a “disaster”? 

“A serious disruption of the functioning of a community or a society causing widespread human, material, economic or environmental losses that exceed the ability of the affected community or society to cope using its own resources” WHO 1998
Hazards and Vulnerability

Hazards – a dangerous phenomenon, substance, human activity or condition

Vulnerability – the likelihood that humans or assets will be damaged/destroyed or affected when exposed to a hazard

Hazards + Vulnerability = Disasters
Natural Disasters

Human Pandemics
Earthquake
Floods
Hail
Icebergs, sea ice and fog
Tornadoes
Landslides and snow avalanches
Storm surges/Tsunamis
Volcanic eruptions
Winter storms
## Canadian Disaster Database

<table>
<thead>
<tr>
<th>Event Type</th>
<th>Place</th>
<th>Event Start Date</th>
<th>Fatalities</th>
<th>Injured / Infected</th>
<th>Evacuated</th>
<th>Estimated Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazardous Chemicals: Derailment Release</td>
<td>Mississauga ON</td>
<td>November 10, 1979</td>
<td>0</td>
<td>0</td>
<td>225000</td>
<td>Unknown</td>
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<tr>
<td>Meteorological - Hydrological: Winter Storm</td>
<td>Ontario, Quebec and New Brunswick</td>
<td>January 4, 1998</td>
<td>35</td>
<td>945</td>
<td>17800</td>
<td>$4,635,720,433</td>
</tr>
<tr>
<td>Meteorological - Hydrological: Flood</td>
<td>Saguenay River Valley QC</td>
<td>July 19, 1996</td>
<td>10</td>
<td>0</td>
<td>15825</td>
<td>$300,000,000</td>
</tr>
</tbody>
</table>
Pillars of Emergency Management

• “These five components may be implemented in sequence or at the same time, but they are not independent of each other. Under most circumstances the components overlap as emergency management activities frequently fall under more than one component, and the boundaries between components are rarely distinct”. Ontario.ca
Prevention through immunization

PPE, Additional Precautions, Quarantine
Pillars of Emergency Management

- A responsibility for emergency management and public safety in Canada.
- The Framework aims to strengthen FPT collaboration and ensure more coherent, complementary actions among the FPT governmental initiatives.
Pillars of Emergency Management

Prevention, Mitigation, Preparation, Response and Recovery
A living document -
Testing and trialing plans
Testing implementation
Assessing the plans
Having “dry runs”, mock drills
“National Risk Profile”: assessing hazards from weather events
Modelling may not be able to predict what will really happen next.

Ask yourself if this event might lead to another challenge such as an interruption in supplies or resources.

Does the event potentially introduce an infectious disease?

Rumors, misinformation, and lack of control of information may interfere with the intentions of infection prevention and control.
What have we learned from other disasters in terms of infection outcomes?

- Infectious Disease Outbreaks in shelters and in refugee camps
- Disruption of immunization schedules
Haiti - Cholera outbreak post 2010 Earthquake

Photo by Eduardo Munoz/Reuter
Polio ‘making a comeback,’ experts say

Many fear crippling virus will hitch a ride with refugees fleeing war-torn Syria

SIMEON BENNETT

GENEVA—Polio, the crippling virus driven to the brink of extinction, may return to Europe as regional conflicts undermine a $10-billion eradication campaign.

Polio’s reappearance in Syria last month after a 14-year absence raises the risk that the virus will hitch a ride on unsuspecting refugees fleeing the country and return to areas, including Europe, that have been polio-free for decades, according to a letter published in The Lancet medical journal Friday.

Syria vows to vaccine all children against polio.

“Polio is making a comeback,” Martin Eichner, a professor at the University of Tuebingen who co-authored the letter to The Lancet, said by phone.

Eichner and a German colleague warned that the vaccine used in the United States and Europe offers only partial protection against infection and called for heightened screening of sewage systems near refugee settlements in Turkey and Jordan. Syrian war refugees, moreover, have begun arriving in Western Europe, including Sweden and Germany.

Syria isn’t the only area where polio has resurfaced. As the disease is formally known, is rearing its head.

It has resurfaced in the Horn of Africa as well as in sewage samples in Israel and Egypt.

The polio virus attacks the nervous system and can cause paralysis within hours, and death in as many as 10 per cent of its victims. There is no cure.

The proportion of children under age five in Syria who’ve received polio vaccinations dropped 99 per cent since 1988, largely thanks to a global vaccination campaign backed by Bill and Melinda Gates.

More than $10 billion has been invested to eradicate the disease, according to the Global Polio Eradication Initiative, a partnership between the WHO, Rotary International, the U.S. Centers for Disease Control and Prevention, and the Bill and Melinda

radic outbreaks globally, said Hamid Jafari, director of the Global Polio Eradication Initiative.

“What conflict does is that it produces that environment, whereby when poliovirus lands it has plenty of opportunity to thrive, circulate and paralyze children,” Jafari said Thursday in a telephone interview.

Twenty-two vaccinators have been
Statistics Canada

Health Care Worker (HCW) challenges included extended work hours, decreased vacation time, changes in the methods of delivering care and more.

The Survey on Health Care Workers' Experiences During the Pandemic (SHCWEP)\(^1\) show that most health care workers (95.0%) reported that their job was impacted by the pandemic, and a large majority (86.5%) felt more stressed at work during the pandemic. (e.g. increase workload, additional practices/procedures)

1 Survey conducted September – November 2021
Survey on Health Care Workers’ Experience During the Pandemic

1. PSW stands for personal support worker.

Source(s):
Survey on Health Care Workers’ Experiences During the Pandemic (5362).
https://www23.statcan.gc.ca/imdb/p2SV.pl?Function=getSurvey&SDDS=5362
Impact of the pandemic on patients and patient outcomes:

Review Article

COVID-19 pandemic and mental health consequences: Systematic review of the current evidence

Nina Vindegaard, Michael Eriksen Benro

https://doi.org/10.1016/j.bbi.2020.05.048

Highlights

• COVID-19 patients displayed high levels of PTSS and increased levels of depression.
• Patients with preexisting psychiatric disorders reported worsening of psychiatric symptoms.
• Higher levels of psychiatric symptoms were found among health care workers.
• A decrease in psychological well-being was observed in the general public.
• Well conducted large-scale studies are highly needed.
How changes due to COVID-19 in terms of antimicrobial usage, infection prevention, and health systems affect the emergence, transmission, and burden of AMR.

Increased hand hygiene, decreased international travel, and decreased elective hospital procedures may reduce AMR pathogen selection and spread in the short term.

However, the opposite effects may be seen if antibiotics are more widely used as standard healthcare pathways break down.
Preparing and Response
Adapting resources to different situations/scenarios:

• Create a cycle of testing and evaluation of disaster plan.
• Add things such as testing, implementation, assessing plans/evaluate and dry runs and mock drills, table top exercises
• Communication!
• Accessible resources
Recovery

Implement recovery plans for short-term and long-term priorities for restoration of functions, services, resources, facilities, programs and infrastructure.

Implement psycho-social recovery plans.

Implement procedures to restore and return operations from the temporary measures adopted during an incident to support normal operations after an incident.

Ensure a proactive communication strategy is in place to keep the community aware of actions being taken.

Recognize the importance of a systematic approach to incorporating prevention and mitigation strategies into recovery programs.

Re-evaluate the recovery plans and strategies to ensure that risk reduction priorities of prevention and mitigation strategies remain relevant and effective.
“The health workforce has a vital role in building the resilience of communities and health systems to respond to disasters caused by natural or artificial hazards, as well as related environmental, technological and biological hazards and risks”.

June 2022...”The impact of the pandemic on our health and care workforce is grave and substantive”. 
Human healthcare resources

• Building resilience and hardiness
• Self Care

• IPAC Canada
  • IPAC Canada Chapters
Debrief after an emergency (recovery)

• The after-action review (AAR) process is part of the emergency management cycle where agencies involved in the emergency attend a debrief.

• Debriefs capture:
  • Operational opportunities for future events
  • Improve coordination and communication with stakeholders
  • Contribute to more effective operations and activities

https://www2.gov.bc.ca/gov/content/safety/emergency-management
Educational, Online Resources
An Emergency Management Framework for Canada 3rd Edition

HOSPITAL READINESS CHECKLIST
for COVID-19
Emergencies and Disasters Toolkit
(4th Edition, Revised 2022)

This toolkit contains material to assist an infection prevention and control professional (ICP) when planning for and responding to a disaster utilizing an all-hazards type approach. The toolkit provides useful items such as checklists and templates that can be adapted to specific types of health care settings. Several of the resources have been used in the field and found to be useful by their creators.

Additional resources, key websites and references have been provided.

The toolkit contains procedures and information that may not be the sole responsibility of the ICP but are important to incorporate into the organization’s overall strategy and plan of action. Any emergency or disaster requires a coordinated response with several key players and aligned with local/regional and
Emergency education programs and toolkits

Education and awareness materials for hazards and preventable emergencies:

- General public education programs
- Resources for teachers
- Community events
- Social media kits

Social media toolkits
Create awareness about preparing for...

Emergency Preparedness Week
Get preparedness, safety, and risk reduction tips.

Check out our new site

High Ground Hike
This is a community-led tsunami evacuation...
Directory of NIOSH Emergency Response Resources

https://www.cdc.gov/niosh/emres/default.html
Health and Safety Committees

Jump start the effectiveness of your health and safety committee with tools and resources from CCOHS
### Emergency Management Checklist

<table>
<thead>
<tr>
<th>Element</th>
<th>Documented</th>
<th>Functional Ability Proven</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statement of policy on emergency response</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plan given appropriate authority by highest management level</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Plan is distributed to all that need to know</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plan establishes the emergency response team</td>
<td></td>
<td></td>
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<tr>
<td>The authority to declare a full evacuation is designated</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The authority to declare the emergency is &quot;over&quot; is designated</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All response personnel are medically fit to perform their duties</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The following functions have been clearly defined and assigned to individuals:</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

[https://www.ccohs.ca/oshanswers/hsprograms/emergency_management.html](https://www.ccohs.ca/oshanswers/hsprograms/emergency_management.html)
Communication
Timeliness of Communication

• Deliver messages in a format that is familiar to the audience
Means of Communication
Best Practices for the Use of Social Media in Public Safety Communications

APCO ANS 1.132.2-2020
Social Media

IPAC dept. should consider small sound bites and “tweets” that they can use.

Most beneficial when organizations cannot keep up with phone calls and are unable to monitor social media due to a significant increase in call volume.

Agencies should consider pre-planning with their surrounding agencies regarding social media policy, practices, and any impact on the operational response during an emergency incident.
Agencies should develop policies for monitoring and responding to social media posts from citizens during an emergency.

Agencies must recognize citizens expect immediate information. If agencies do not provide the needed information, the public will seek it from other sources.

Any release of information or public communications regarding the incident should follow the agency’s designated decision making policies.
How will Communication be delivered?

• Proactive vs Reactive Media relations
• Press Release vs Press Conference
• Clarity
  • Think of the effect that your news will have on the public
  • Predict what public reaction might be
  • Guide it appropriately
  • Consult with media experts before taking irrevocable steps
  • Remember that the public good is the highest priority

• IPAC Canada- Infection Prevention and Control in Emergencies and Disasters Toolkit
• Resilience is the capacity of a system, community or society to adapt to disturbances resulting from hazards by persevering, recuperating or changing to reach and maintain an acceptable level of functioning.
Mitigating the impact of infection control practices

Ethical decision making:

Distinguish between loneliness versus social isolation

Laura L. Ooi, Li Liu, et al; Social isolation, loneliness and positive mental health (PMH) among older adults in Canada during the COVID-19 pandemic. HPCDP April 2023

• Pooled results from PHAC’s 2 surveys Survey on COVID-19 and Mental Health (collected by stats Canada in 2020 and 2021). 5332 respondents >65 yrs.

“Social isolation (associated with physical health problems and mortality) and loneliness (more associated with mental health problems e.g. depression) were associated with poorer well-being among older adults in Canada during the pandemic. Loneliness remained a significant factor related to all PMH outcomes after adjusting for social isolation but not vice versa. Highlights the need to support lonely older adults during and beyond the pandemic”.

This study can inform public health policy and funding considerations for programs and services that specifically target loneliness among older adults.
My Anecdote...

• Dialogue with patients during a VRE outbreak 1999

• Outbreak on a general medical unit
• Interviews of patients placed in Contact Precautions
• Older adults expressed feeling felt less control over their circumstance
• “Quarantine” – stigma
• Policies and training of staff and volunteers to visit those isolated from other patients/residents
Non-Traditional Sites
Alternative Sites
Alternative Sites

• What to consider an alternative site? When to activate the site?
• IT Disaster Recovery sites for data management: cold site, warm site and hot site
• Staffing issues (who orientates them to the setting?)
• What types of human resources? RN? PSW? Environmental? Physician?
• Does it function with an organization

IPAC Canada- Infection Prevention and Control in Emergencies and Disasters Toolkit
COVID-19
Immunization Clinic
VACCINATION AREA
Sunnybrook Mobile Health Unit
Pearls of Wisdom
• “With previous emergency evacuations, some LTC homes were not aware of their receiving care facility. Evacuation plans were not updated and some were misplaced and it was time consuming in the midst of the emergency to make sure patient/resident identification, along with their health records were ready to go”.

• “Make sure to include your partner organizations in your Emergency and Disaster Planning and table top exercises”. Collaborate and support.
Context is important, but it’s important to tie actions during emergency response to principles. There were lots of things done during COVID that were based on IPAC principles, but depending on other contexts may not be the right things to do.

New ICPs may benefit from thinking about the general IPAC principles when planning for the next event, rather than just applying a list of things that they used in a previous event, that may not apply in a different context.

A support system is needed. I know that sounds obvious, but I think too often we expect that each facility has worked things out during planning, or that we can refer them to a few documents/guidance/resources and they should be able to apply what is written. But experience has shown this isn’t always the case. Having a “buddy system” of sorts helps to ensure there is broader support – a safety net.
Suzanne

• I have observed people feeling scared – and *reacting* rather than taking a pause, to think about the measures to be implemented. They quickly debrief, think about it after and then move on to the next activity.

• We are good at documenting “lessons learned” but do we *implement* those lessons learned?

• Put in measures /strategies/resources that can be sustained over time
Anne and Laura

• Test your E&D plan! Review the plan annually. (Update with new scenarios, verify the alternate sites for surge capacity still exist!)

• Decide to review a *section* of the plan in more detail each year (e.g. a table top exercise). Invite your internal and external partners to the table. Collaborate and support.

• Can our tools and resources be easily adapted to the current event?
• The importance to debrief and the power of debriefing for the health care team (resilience)

• Decision making “in the moment” especially with surge capacity. Have your skilled/experienced HCW involved with this decision making.

• Emergency Department screening and triage has become so much better! We picked up a significant reportable disease with the travel history.

• We now have some good habits since the pandemic. Teams are automatically donning the appropriate PPE for Code Blue!
Sandra

• Communicate!

• Ongoing communication internally and with partner organizations. We are dependent on each other in a disaster!

• For communication, be prepared for the unknown and course-correct if necessary – manage expectations and communications.

• How to reassure people with change occurring..
Audience:

How do we move the needle?

Scalability – going from local to F/P/T level to global – or – in the opposite direction. How do we take global initiatives to the local level?

Resilience – stress/burnout and long term effects. How do we work with our Occupational Health programs and Employee Assistance programs?
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• Laura Farrell – former Infection Control Specialist Public Health Ontario
• Gayle Gillies – former Halton Health Care Emergency Department RN
• Diane Smith – former Quinte Health Care Emergency Department RN
Thank you !