Come Hell or High Water – Infection Control During and After the Alberta 2013 Flood
Gwyneth Meyers and Barbara Long, Infection Prevention and Control Calgary Zone
A Webber Training Teleclass

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Objectives:
To share our IPC experiences from a frontline and operational perspective
- Unfolding Events
- Response
- Recovery: immediate and long term
- Summary of Key Learnings
- Parting Thoughts

Calgary Zone Health Care Sites Impacted
Calgary
- Holy Cross Hospital Site
- Sheldon Chumir Health Centre
High River
- High River Hospital & Annex Building
- High River Public Health
- High River Mental Health
Carmang
- Carmang Hospital
Black Diamond
- Oilfields Hospital

There was no warning!
June 19 Wednesday:
Heavy rainfall warning west of Calgary
300mm in 12 hrs
June 20 Thursday 0600:
Flooding in Carmang & Banff – Trans Canada Highway is cut off

Flooding in High River
Thursday June 20:
0600: Sandbagging at the Hospital
1010: Water approaches main hospital doors
1140: Power out, operating on generator
No landline phones and cell phone reception poor
1238: State of local emergency
1617: Non essential people evacuated
2100: Helicopter landing on the roof
Dragon: Evacuated 2 maternity pts.
Friday June 21:
Water receding
sewer system down, no potable water
150 patients evacuated
800 people rescued by helicopter

Goal Minimize Damage  Preserve the Facility

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All hands on deck – water coming through the back door leading dock too!

The main floor of the hospital affected - Coved floors matter!

In the end the whole hospital was closed for several weeks

Thinking on your feet: Innovation and practicality matter

- Teamwork - everyone pitches in
- Use of disposables as soon as possible
- Early relocation of clean and sterile supplies
- Delivery of portable water
- Cut holes in fence to move water
- Use of sandbags, sift, white rock, linen
- What to do with soaked linen?
- What to do with waste?
- HVAC change filters daily
- Fans to dry stairwell spaces
- Keep generator dry and fueled
- Evacuation: manure loaders, helicopter on hospital roof
- How to keep your feet dry and where to sleep?

Innovation and Practicality Matters: Generator Intake

Evacuation in Manure Trucks and Tractors

Canmore Hospital Flood: Thursday June 20
The same but different – scope of flood

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Time Lines:
Thursday June 20th
- Flood water entered through loading dock
- All hands on deck
Friday June 21st
- Pumping water from loading dock a losing battle
- Installation of concrete berm
- Flood water involving entire lower level

Moving to Higher Ground
- All essential supplies from MDR, Pharmacy, Stores, Kitchen and Laundry moved to the 1st floor
- Kitchen moved to 1st floor LTC unit
- Maintain essential services for existing patients and community
- Maintain ability to perform emergency C-Sects

Building the Berm
- Flood water is held back by the concrete berm
- Six to eight inches of water
- No sewer back up
- No interruption of power or water
- No HVAC interruptions
- Canmore town site boil water advisory

Lower Level of Hospital Flooded
Areas affected
- Kitchen/Cafeteria
- MDR
- Laundry Services
- Housekeeping
- Pharmacy
- Stores/Storage area
- Boiler Room
- Maintenance
- Large Conference Room
- Offices/Staff Lounges/Locker Rooms

Unfolding Story in Calgary
Thursday June 20: Flood warnings
0630 Contacted frontline ICPS in Canmore and High River
Sent all the resources we had:
- Water Loss Document
- Construction and Design Guidelines
- Mold Remediation Document
- CDC Flood/Hurricane Document
- ARRA Tips for Flood and Hurricanes
1230 Lost Contact with ICPS
Only news was from the Internet

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Friday June 21st

- Sheldon Chumir and Holy Cross Health Care Sites flooded
- Bridges across the Bow River closed
- Cutting off Calgary North/South
- ICPs who had to cross the river are sent home early
- No impact to IPC program
- Limited contact with ICPs in Canmore and High River

Flood Impact on Black Diamond Oilfields Hospital

Black Diamond Town
- Water treatment plant affected
- Overland hauling of potable water
- Road washed out to Turner Valley
- Impact on Hospital
- Sterile supply transport-disposables
- Water restriction
- Bottled water
- Portable Toilets

Initial Cleanup: Canmore

- Community Volunteers and staff squeegee and showl water and sift into open elevator shaft
- Rinsed, mopped and sanitized floors and walls up to three feet
- All kitchen equipment washed and sanitized

Recommissioning of Medical Device Reprocessing

MDR
- Terminal cleaning of department
- Sterilizer Validation (Qualification) CAN/CSA Z157685-06 (leak testing, air removal and empty load testing)
- Re-sterilizing of all supplies due to excessive moisture
- Sterilization of all supplies
- AER not able to use until boil water advisory rescinded (second week of July)
- Workplace Health and Safety, FM&E and IPC tour
- Checked air and wall moisture

Recommissioning continued

- Laundry back in service Tuesday June 25 (terminal cleaning)
- Stores (supplies not compromised)
- Pharmacy (recommission of Allinix hoods, floor and wall surfaces)
- Kitchen/Cafeteria inspected by Public Health

Belfor Restoration

Thursday June 28

Recovery plans discussed with Site Manager, IPC, ES, FM&E, Pharmacy, MDR and OR. Daily planning meetings
- IPC Construction and mould remediation checklists completed for all areas
- Cleaning, disinfection, dehumidifiers, industrial fans
- Drywall removed up to three feet
- Mould inspection and removal
- Negative air pressure maintained in all areas
- Assessment and disposal of flood affected equipment and furnishings
- Inspection of areas pre and post construction

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Canmore Hospital Grounds

High River Clean up
- The same process but more extensive
- There was more impact to the town infrastructure
- The hospital was closed for weeks and opened in stages
- There is still ongoing construction and remediation to some affected areas
- There was considerable damage; mold, dirt and debris
- Staff were displaced and relocated to other facilities

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Final thoughts

- There are a lot of amazing people out there
- 1 year later – ongoing impact on peoples lives (Post Traumatic Stress)
- All the planning in the world can’t prepare you for all the events that occur during a disaster
- The flood cost over $2 billion
- We are lucky to have the infrastructure we do
- There are differences between developed countries and the third world .... but we are all human and powerless in the face of mother nature.

Flooding in Malawi February 2013

This is another story to tell. You donated, we bought seed, people planted and now they have started harvesting. What you can see in the picture is a good example of a very good harvest. This encourages me a lot because people will have enough food for a number of months. Zikomo kwambiri (thank you in Chichewa) for the assistance you sent. People have come to our house with these healthy bags of maize to demonstrate the results of their labour.

Greetings from Malawi. Thank you very much for sending us news and pictures about the floods which have hit Calgary. The moment I opened your message I was forced to call all members of the family to show them the pictures which are very disturbing considering the fact that they knew what it means to be affected by floods. I have shared the same news to friends here. They are touched. We promise you and all who have been affected by floods and quiet wishes until all is well and they have their homes fixed and that they are healed from the problem. Please let us know about what is happening.
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