

# Maintenance HAZMAT/ Chemical Safe Handling Procedures

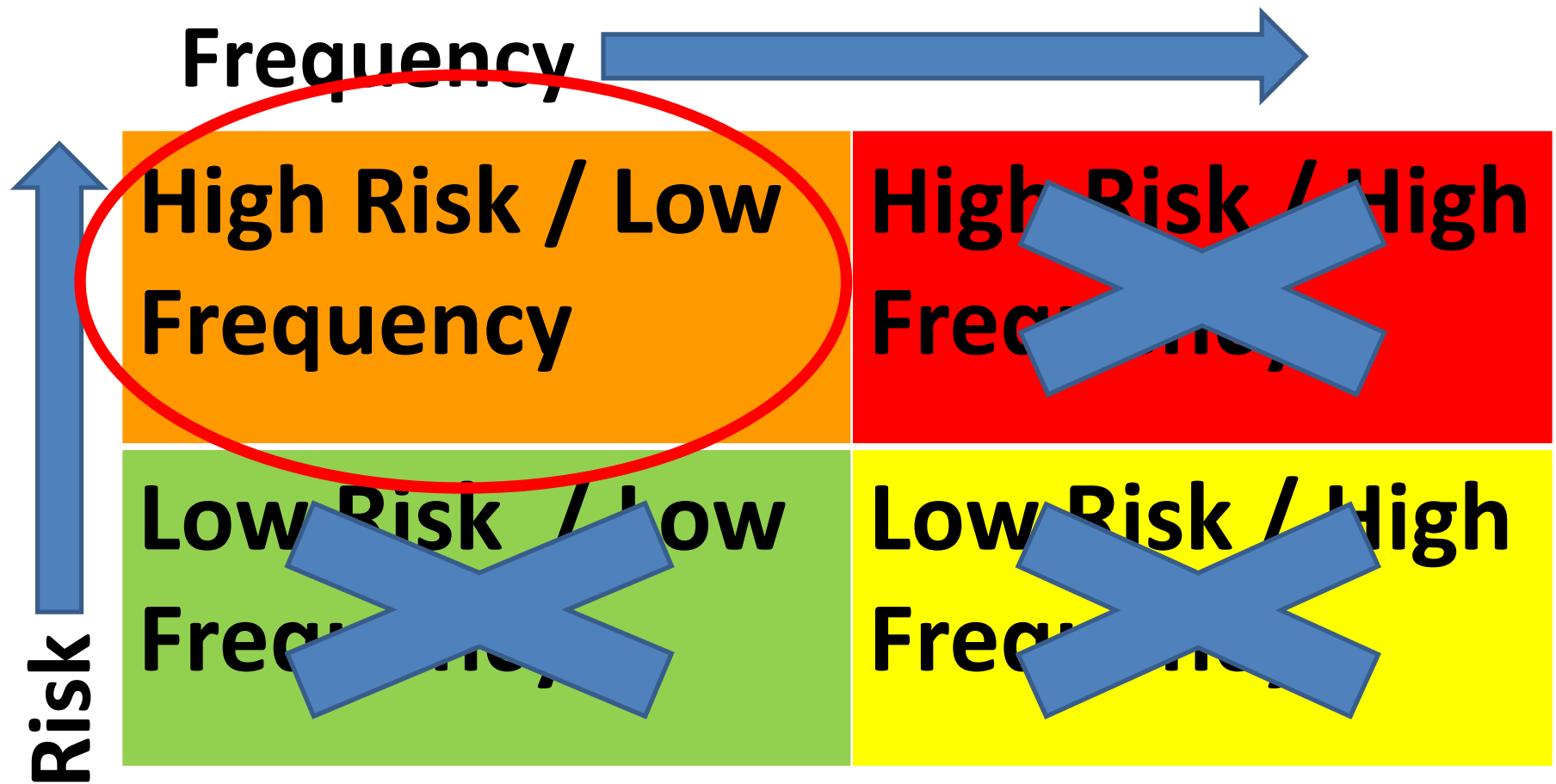
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# Why Should I be Concerned?

- It's never happened at my Facility
- We have a Code Brown plan in place
- We have a Disaster Management Plan
- Let's look at that from a Risk perspective

# Hazard Evaluation -- Frequency vs. Risk



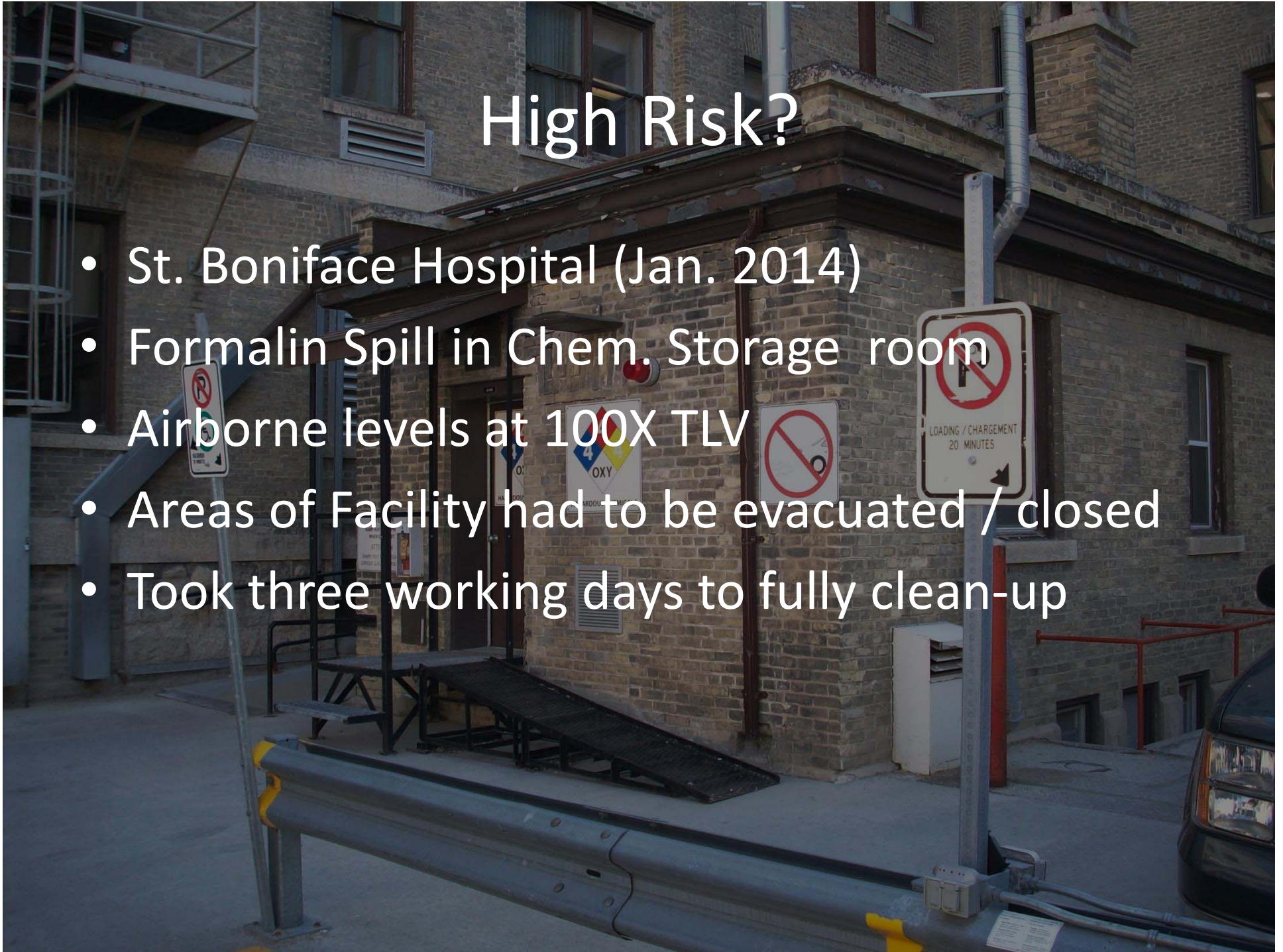
# High Risk?

- Dauphin Hospital (Nov 2006)
- Incorrect bulk delivery to Hospital Laundry chemical bulk tank resulted in a chemical reaction and gas cloud.
- 7 Hospital staff injured



# High Risk?

- St. Boniface Hospital (Jan. 2014)
- Formalin Spill in Chem. Storage room
- Airborne levels at 100X TLV
- Areas of Facility had to be evacuated / closed
- Took three working days to fully clean-up



# Low Frequency?

- Massachusetts Study (1997) 6% of state wide Hazmat calls were from Health facilities –of those 62% were Ethylene Oxide and 38% were Freon
- CANUTEC (2013) of all calls received (22016) 940 (4.2%) were deemed to be emergent calls. Of those 11 or 1.1% originated from a Medical facility.

# Potential Hazmat Sources

- **Medical Device Reprocessing (MDR)**

Gluteraldehyde - (Metricide / Thermosept) – Health effects

Ethylene Oxide - (Steri-Gas) – Health effects

-- Both being phased out and replaced with a Hydrogen Peroxide based cleaner (highly reactive)

Formaldehyde – (Formalin) – Health effects

- **Laundry**

Various laundry detergents – Incompatibility issues, Corrosive / Health effects

- **Housekeeping**

Very little as hazardous / incompatible cleaning materials have been removed from service

- **Facilities Management**

Water Treatment chemicals – Corrosive / Reactive / Environmental effects

Welding / Refrigerant gases -- Flammable / Asphyxiant

Paints/ Lubricating oils / Adhesives

- **Lab**

7-Deaza-2'-Deoxyguanosine 5'-Triphosphate, 5mM Solution (c7 dGTP), 2  $\mu$ mol

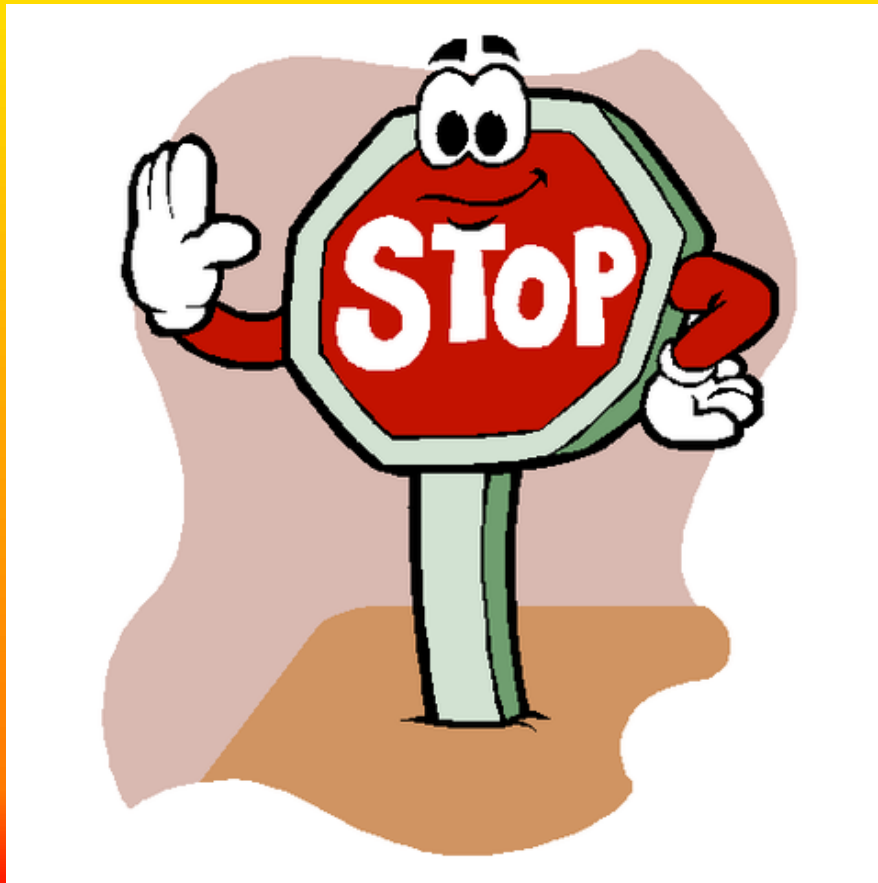
# Emergency Management Plans

- Most if not all of us have Disaster Management plans
- Better if we can keep those on the shelf
- Most sites have Code Brown plan
- Plan is useless unless you train / practice response skills



# What can you do?

- How about preventing an incident in the first place?



# How do we do that?

- Starts with the correct supplies – Do you really need that big barrel of ‘Whatever’ the salesman claimed would fix the water treatment “issues”?
- Work with Logistics to obtain the safest materials not just the best price...
- Is your plant equipment well maintained?  
Good quality parts? (no off shore junk)

# Procedures? Training?

- Written operation procedures
  - Do procedures reflect what is actually done?
- Emergency shutdown
  - Are emergency shutdowns tested?
- Operator training
  - Is operator training documented so that a new operator receives the current methods ?

# Documentation

- Inventory of hazardous materials -- most of a Hazmat response is spent trying to figure out what the material is – a good inventory is GOLDEN
- Review WHMIS MSDS (SDS) – know what to expect if a substance spills.
- Get a copy of Transport Canada Emergency Response Guidebook – “There’s an app for that”

**Download** --<http://www.tc.gc.ca/eng/canutec/guide-ergo-221.htm>

**Android**—<https://play.google.com/store/apps/details?id=gov.nih.nlm.erg2012>

**Apple** -- <https://itunes.apple.com/us/app/erg-2012-for-iphone/id592158838?mt=8&ign-mpt=uo=2>

# Plan

- Develop a pre-incident plan for the more hazardous products
- Make sure you have correct PPE
- Stock of clean-up materials / neutralizers  
Use commonly stocked materials (sand)

# Practice

- Develop your “First-Aid” for spills routine
- Run a few mock drills so staff are familiar with what they need to know and do
- Involve your local emergency services (Fire Dept. / Paramedics)

Once final  
bit of  
advice.....



# Fire Marshal Course Overview

- Developed in conjunction with RRC
- Produced a one day and a three day course
- Courses have received positive feedback
- Currently on hold as the Health system re-aligns.



# Current Training Direction

- Provincial Fire Safety Assessment Steering Committee currently discussing training needs as a part of on-going maintenance of fire safety systems
- Currently working with OFC / Mb. Health to determine current and future training needs.
- Fire Marshal course does meet part of the identified need.

# Other Required Training

- Provincial Fire Safety Assessment has identified significant amounts of fire stopping deficiencies
- The study has determined a large portion of this work could be done in house by FM staff.
- FM staff need first need to receive fire stop maintenance training.
- Should “small repair / maintenance ” training be offered?

# Fire Systems Training

- As fire / life safety systems are installed / upgraded there will be a need to upgrade maintenance training.
- There are Code required daily / weekly / monthly checks that generally fall outside of the work provide by service contractors.
- We need to think about what training will be required for our FM staff.

**QUESTIONS?**

