Coronavirus Outbreak, Response, and Decontamination
• Evaluate current response
• Understand how they apply to your hospital floor plans
• Understand response capabilities
• How will you plan?
• How will you respond?
• What factors must you consider?
Why Does it Matter?

- When viruses cause national or global outbreaks of life-threatening diseases, risk management has a crucial role to play in the race against time.
- Companies face risks to both their employees and their revenues.
- Business interruption.
- Very large impacts - low probability of occurrence.
Healthcare Acquired Infections (HAIs)

- Reducing HAI is good for the patient, staff, and bottom line.
- The fourth leading cause of death in the United States, costing the healthcare system more than $40 billion a year.
- More deaths a year than breast cancer, AIDS and automotive accidents combined. This equates to the crash of a commercial 747 airliner every day (271/day).
- 87% of the medical facilities do not take the recommended steps to prevent infections.
# 20th Century Pandemics

<table>
<thead>
<tr>
<th>DISEASE</th>
<th>TIME</th>
<th>CASUALTIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spanish flu</td>
<td>1918</td>
<td>40–50 million</td>
</tr>
<tr>
<td>Asian flu</td>
<td>1957</td>
<td>1-2 million</td>
</tr>
<tr>
<td>Hong Kong flu</td>
<td>1968</td>
<td>1 million</td>
</tr>
</tbody>
</table>

Sources: WHO, BBC, globalsecurity.org
Stay informed about the local COVID-19 situation. Know where to turn for reliable, up-to-date information in your local community.

Develop an emergency plan. A COVID-19 outbreak in your community could lead to staff absenteeism. Prepare alternative staffing plans to ensure as many of your facility’s staff are available as possible.

Establish relationships with key healthcare and public health partners in your community. Learn about plans to manage patients, accept transfers, and share supplies. Review any memoranda of understanding (MOUs) with affiliates, your healthcare coalition, and other partners to provide support or assistance during emergencies.

Create an emergency contact list. Develop and continuously update emergency contact lists for key partners and ensure the lists are accessible in key locations in your facility. For example, know how to reach your local or state health department in an emergency.
During construction and renovation activities, dust can carry Aspergillus Fumigatus spores and other molds.

Spores are small (2.5 microns to 3.5 microns) and can settle very slowly (0.03 cm per second).

1 Hour = 3.5 Feet!
Penalties for HAI\textsubscript{s}

- Beginning in 2015, hospitals with the highest rates of HAI\textsubscript{s} will be penalized one percent of their Medicare payment.

- The new system encourages competition amongst hospitals to lower the amount HAI\textsubscript{s}.

- Future reform by the U.S. Department of Health and Human Services may choose to expand the HAI pool to include additional facilities, home health agencies, ambulatory surgical centers and skilled nursing facilities.
Penalties for HAIs cont.

- 724 Hospitals have already been penalized. Their Medicare payments are reduced by a percentage till Sept. 2015

- 2,610 Hospitals have been fined by Medicare. 39 of those hospitals are receiving the highest penalty allowed. Over the course of this year, the fines will total about $428 million

Sources: Kaiser Health News 2015
“Thank God for these curtains. The patient in the next bed is highly infectious.”
Why ICRA?

Sources: St. Petersburg Times, February 4, 2009
ICRA - Containment Barriers

Choosing the correct barrier
Infection Control Risk Assessment (ICRA)

Capabilities and Services

- Pre-Construction Risk Assessment
- Pre-Construction Techniques and Planning
- Construction Techniques
- Communication
- Permitting
- Containment
- Equipment
- Testing
- Clearance
- Infection Control
- Fire and Life Safety
Infection Control Risk Assessment (ICRA)

Containment Barriers

Class I + II

Class III + IV
High-Level Clean

Applied Disinfection, Decontamination, and Sterilization Advantages

- Kill air and surface bacteria, bacterial spores, mold, mold spores, and viruses.
- Reduce spread of illnesses due to ‘Sick Building Syndrome’
- Safe to use on delicate medical equipment and technology

Effective Against:

- COVID-19
- MRSA
- Staphylococcus aureus
- Pseudomonas aeruginosa
- Legionella
- Mycobacterium bovis
- HIV-1
- Hepatitis A
- Herpes Simplex-2
- c. Diff
- Rhinovirus type 37
HAZWOPER Response

- Deploy clean-up operations, including OSHA Hazardous Waste Operations and Emergency Response
- (HAZWOPER) trained and equipped personnel
- Oversee operations and maintenance of facility
- Monitor functional performance and measure Airborne Infection Isolation Room (AIIR)
- Direct waste management
Incident Response
Healthcare Contractor Services
Services Types

Proactive vs. Reactive

Proactive
- ICRA
- High-Level Clean
- Emergency Operations Planning (EOP)

Reactive
- Incident Response
- Support Response
Healthcare Contractor Services

Proactive
- High Level Clean
- ICRA

Reactive
- Incident Response
- Support Response
Proactive Services
High Level Clean
Old vs. New

Sources: www.tomiesinc.com
Decontamination Services
Three Types of Cleaning

1,000,000

3 Log = Sanitation
5 Log = Disinfection
6 Log = Decontamination
Proactive Services
ICRA
The Role of ICRA

- Detailed job scope
- Location of project
- Persons and organizations adjacent to the workspace
- Duration of the project
- The risk group of the patients in the work area
- Will the work area be occupied by patients
Preconstruction Risk Assessment

• Utilities
• Infection Control
• Fire and Life Safety
• Noise, Vibrations, and Electrical Communication Devices
• Privacy
• Security
Preconstruction Techniques and Planning

- Communication with Infection Control Managers, Life Safety Managers, Nursing Staff Supervisors, etc.
- Permits
- Containment Barriers
- Equipment
- Testing
- Final Clearance Criteria
Containment Procedures

• Proper Entry and Exit
• Worker Protection
• Tool Types and Tool Handling
• Cleaning and Monitoring
• Other?
Take the following into account:

- Duration of project
- Type of construction
- Surroundings
- Hard barriers vs. soft barriers
- Barriers must be air-tight and constructed of material of limited flammability
- Isolation of HVAC and mechanical systems
- Plenum Penetrations
Many times, a containment barrier is the *only* division between an active construction site and an occupied patient area.
It is important to choose the correct barrier for the project.

- 6 Mil Poly Barrier
- Hard Barrier
Establishing Negative Air

Where will the HEPA filters vent?
- Recirculate
- Exhausted outside of the building
- Exhausted outside of the project space.
Negative Air is Not Created Equal
Reactive Services

Incident Response
Emergency Response

- Fire and Smoke
- Water and Flood Mitigation
- Mold and Environmental Remediation
- Asbestos Abatement
- Infection Control and Decontamination
HAZWOPER Categories

- Facility
- Waste Management
- Emergency Response Operation

Sources: OSHA
Emergency Response Operation Defined

The Hazardous Waste Operations and Emergency Response Standard –
Emergency response operations for releases of, or substantial threats of releases of, hazardous substances without regard to the location of the hazard.

Source: www.OSHA.gov, § 1910.12 V
Emergency Response Operation

• Maintained by OSHA

• Divided by OSHA into five levels:
  • First Responder Awareness
  • First Responder Operational
  • Hazardous Material Technician
  • Hazardous Material Specialist
  • Hazardous Material On scene Incident Commander

• Several levels of training, however, general site workers initially require 40 hours of instruction, three days of supervised hands on training, and many hours of incident specific and refresher training annually

Source: www.OSHA.gov
Incident Response
Incident Response Services

- Rapid Response Service in the case of suspected or confirmed Infectious disease
- Triage of entry site
- Evaluate travel path
- Control exposure between one segment of occupants and the general occupancy
- Evaluate cross-contaminated pathways
- Deploy clean-up operations, including HAZWOPERS

Source: www.OSHA.gov
Reactive Response
Support Services
Hazard Zones
Questions?
24-Hour Emergency Hot-line:
800.808.1553

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