Radiology MCI PLAN DEVELOPMENT

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Dept Diagnostic & Interventional Imaging
NO
FINANCIAL DISCLOSURES
If you’re, like me, the Department MCI/DMP/Response Director...
Key Points

• **Integrate with Hospital System**
  • Work with the hospital Emergency Manager
  • Understand ICS

• **Know your Capabilities**
  • Determine triggers for activation
  • Surge capacity
  • Determine your bottlenecks

• **Plan for ALL Reasonable Contingencies**
  • Stick to SOP where possible
  • Run a HVA to determine likely scenarios and HOPE to operate within those constraints
  • Assess Communication strengths and weaknesses

• **Drill and Exercise**
  • Tabletop
  • Simulations
  • Adjust plan accordingly
Don’t be a “one man show”
Don’t be a “one man show”
Minimum Planners

Director

Assistant Director

Key Stakeholders
Integrate with Hospital System

- Work with the hospital Emergency Manager
Integrate with Hospital System

• Work with the hospital Emergency Manager
  • Vested Interest
Integrate with Hospital System

• Work with the hospital Emergency Manager
  • Vested Interest
  • Well Positioned for Success
Integrate with Hospital System

• Work with the hospital Emergency Manager
  • Vested Interest
  • Well Positioned for Success
  • Knowledgeable
Cullen Atrium Off-Site Area

Disaster Map
(Created April, 2016)

Walking wounded follow arrows to Cullen Off-Site Area

Ambulance Bay

MRI

Transportation

Hermann Atrium

Cullen Atrium Hallway
1st floor

Registration

MD
RN
Supplies

LINEN
Cullen Atrium
MD
RN
Supplies
LINEN
Registration
LINEN
Transportation
Hermann
Atrium
Cullen Atrium Hallway
1st floor
Cullen Atrium Off-Site Area
Disaster Map
(Created April, 2016)

Ambulance Bay
Walking wounded follow arrows to Cullen Off-Site Area

RADIOLOGIST
HERE!
(reading off portable unit, if necessary)
Integrate with Hospital System

- Work with the hospital Emergency Manager
- Meet with Trauma Surgery
- Meet with Emergency Medicine
Integrate with Hospital System

• Work with the hospital Emergency Manager
• Understand ICS
Integrate with Hospital System

- Work with the hospital Emergency Manager
- Understand ICS

Incident Command System
Integrate with Hospital System

• Work with the hospital Emergency Manager
• Understand ICS
  • Allows individual functional units to work together effectively
Integrate with Hospital System

• Work with the hospital Emergency Manager
• Understand ICS
  • Allows individual functional units to work together effectively
  • Provides mechanism to share resources
Integrate with Hospital System

• Work with the hospital Emergency Manager
• Understand ICS
  • Allows individual functional units to work together effectively
  • Provides mechanism to share resources
  • Modularly expandable and collapsible
Radiologist Physician Response - **WHO**

- All **Emergency Radiologists**
- **Interventional Radiologists**
- other **radiology faculty**
  - Body Imaging
  - **Neuro**
  - Chest
  - **Pedi**
    - Anyone else who wants to help – labor pool
- **Residents** onsite or on call
- Chief Residents
Radiologist Physician Response - HOW

- Paging System
- Telephone Tree
Radiologist Physician Response - HOW

- Paging System
- Telephone Tree
- Electronic Alerting System
  - such as Everbridge
Radiologist Physician Response - WHAT

• When and Where to show up
  • Can be built into alert system
Radiologist Physician Response - WHAT

• When to show up
  • Can be built into alert system
  • Need to begin planning for relief
Radiologist Physician Response - **WHAT**

- How they’re going to get there
  - Road Access
  - Road Closures
Radiologist Physician Response - WHAT

• How they’re going to get there
  • Road Access
  • Road Closures
  • Hospital Access
Road, Gas, Hospital Access
Radiologist Physician Response - **WHAT**

- Where to Report
  - Staging Area
Radiologist Physician Response - WHAT

• Where to Report
  • Staging Area
  • Labor Pool
    • Timekeeping management
Radiologist Physician Response - **WHAT**

- Where to Report
  - Staging Area
  - Labor Pool
  - Reading Area
SOP

Standard Operating Procedures
MUST PLAN for **ALL** Contingencies

- No power  →  No imaging

You’re done!
Plan for ALL Contingencies

• Stick to SOP where possible
ASSUMPTIONS

• Imaging Services are Operational
• ALL Imaging Equipment power is supplied by system supported with backup generator
ASSUMPTIONS

• Imaging Services are Operational
• ALL Imaging Equipment **power** is supplied by system supported with **backup generator**
  • Imaging Machines/Devices
  • PACS Servers and Workstations
    • ALL Integrated Program Servers
      • EMR
      • Reporting Tools
      • Internal Communications/Tracking (eg, Primordial)
ASSUMPTIONS

• Imaging Services are Operational
• ALL Imaging Equipment power is supplied by system supported with backup generator
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VERIFY with PACS Support and/or Emergency Manager
Plan for ALL Contingencies

• Stick to SOP where possible
• Plan for Everything
Plan for ALL Contingencies

• Stick to SOP where possible

• Plan for Everything...REASONABLE
Plan for ALL Contingencies

• Stick to SOP where possible
• Plan for Everything...REASONABLE
• Run an HVA (hazard vulnerability analysis)
Hazard Vulnerability Analysis

• Considers Likelihood and Impact of Potential Threats

• Used to Formulate Plan of Action – should these occur
<table>
<thead>
<tr>
<th>EVENT</th>
<th>PROBABILITY</th>
<th>HUMAN IMPACT</th>
<th>PROPERTY IMPACT</th>
<th>BUSINESS IMPACT</th>
<th>PREPAREDNESS</th>
<th>INTERNAL RESPONSE</th>
<th>EXTERNAL RESPONSE</th>
<th>RISK</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Likelihood this will occur</td>
<td>Possibility of death or injury</td>
<td>Physical losses and damages</td>
<td>Interruption of services</td>
<td>Programming</td>
<td>Time, effectiveness, resources</td>
<td>Community/ Medical and staff and supplies</td>
<td>Relative threat*</td>
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<tr>
<td>SCORE</td>
<td>Low</td>
<td>0 = NA</td>
<td>0 = NA</td>
<td>0 = NA</td>
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<td>0 = NA</td>
<td>0 = NA</td>
<td>0 - 100%</td>
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</tbody>
</table>

- Mass Casualty Incident (Trauma)
- Mass Casualty Incident (Medical/Infectious)
- Terrorism, Biological
- VIP Situation
- Intent Abduction
- Hostage Situation
- Civil Disturbance
- Labor Action
- Forensic Admission
- Scrim Threat

AVERAGE 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0%

*Risk increases with percentage.*
### Hazard and Vulnerability Assessment Tool

**Event**

<table>
<thead>
<tr>
<th>Event</th>
<th>Probability</th>
<th>Human Impact</th>
<th>Property Impact</th>
<th>Business Impact</th>
<th>Preparedness</th>
<th>Internal Response</th>
<th>External Response</th>
<th>Score</th>
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<tbody>
<tr>
<td>Mass Casualty Incident (Trauma)</td>
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<td>Terrorism, Biological</td>
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<tr>
<td>VIP Situation</td>
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<tr>
<td>Hostage Situation</td>
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<td>0</td>
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<td>Forensic Admission</td>
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<td>0.00</td>
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<td>0.00</td>
<td>0.00</td>
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**Relative Risk**

\[
\text{Relative Risk} = \frac{\text{Probability of Event Occurrence (0-3)}}{3} \times \frac{\text{Human Impact (1-3)} + \text{Property Impact (1-3)} + \text{Business Impact (1-3)} + \text{Preparedness (1-3)} + \text{Internal Response (1-3)} + \text{External Response (1-3)}}{18}
\]
Know Your Capabilities

• Determine triggers for activation
  • How many patients can you image per hour?
  • How many exams can you read per hour?
Drill and Exercise

- Test individual functions
- Tabletop exercises
- Simulations
Drill and Exercise

- Test individual functions
- Tabletop exercises
- Simulations
- Adapt plan based on performance
Functional Operations

• Resources
  • Manpower
  • Equipment
  • Communications
Functional Operations

• Resources
  • Manpower
    • Technologists
    • Clerks
    • Transporters
    • Readers (attending, fellow and resident radiologists)
Functional Operations

• Resources
  • Manpower
  • Equipment – Image Acquisition
    • XR
    • CT
    • US
    • IR Suites
Functional Operations

• Resources
  • Equipment – Image Acquisition
    • XR
  • CT
    • Routine protocol
    • Modified MCI protocol
    • IV or no IV contrast
    • PRELOAD on ALL potential SCANNERS
Functional Operations

• Resources
  • Equipment – Image Interpretation
    • PACS Workstations
Functional Operations

• Resources
  • Equipment – Image Interpretation
    • PACS Workstations
      • Onsite/offsite
        • Network/connectivity issues
        • Communication issues
Functional Operations

• Resources
  • Equipment – Image Interpretation
    • PACS Workstations
  • Reporting
    • Electronic
    • Paper
      • Communication?
      • Runners?
• Resources
  • Equipment – Image Interpretation
    • PACS Workstations
  • Reporting
    • Preliminary
    • Checklists?
    • Diagnoses only?
  • Final

<table>
<thead>
<tr>
<th>Head</th>
<th>Face</th>
<th>Neck</th>
<th>Equipment</th>
<th>Resources</th>
<th>PACS Workstations</th>
<th>Reporting</th>
<th>Preliminary Checklists?</th>
<th>Diagnoses only?</th>
<th>Final</th>
</tr>
</thead>
</table>
Functional Operations

• Resources
  • Equipment – Image Interpretation
    • PACS Workstations
    • Reporting
      • Detail
Recovery

• Responder Relief
• Responder Compensation
• Continuation of Normal Operations
  • “Continuity Planning”
• Don’t forget about current hospital census
Post Event

• Debrief meeting ASAP (After Action)
  Determine what worked well
  Determine what did not work well
  Formulate plan to improve performance in future

• Critical Incident Stress Debriefing - UT EAP (Employee Assistance Program)
\[ x + y + z = ??? \]

\[ X + Y + Z = ??? \]

\[ x + y + z = ??? \]
To Summarize...

Work within the system
To Summarize...

Work within the system

Know your capabilities and limitations
To Summarize...

Work within the system
Know your capabilities and limitations
Anticipate scenarios
To Summarize...

Work within the system
Know your capabilities and limitations
Anticipate scenarios
Practice, practice, practice...and adapt
Thank you very much.