Air Medical Integration into an MCI

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Topics to be Covered

• Understand Helicopter Emergency Medical Services (HEMS)
• Role in disaster planning
• Various entities needed for successful response
• Value of incorporating HEMS in disaster drills
• How HEMS will benefit your current disaster plan

Considerations: Integration of HEMS in a MCI

• Is HEMS in your current disaster plan?
• How is it being utilized?
• Active/passive or no participation in mass casualty drills?
• Performance metrics?
• Has the role of HEMS been incorporated into all phases of disaster management?
What we deal with...

- Shootings
- Mass transportation crash
- Terrorism – various forms
- Natural disasters

Helicopter Emergency Medical Services (HEMS)

- Optimize/speed
- Coordinate
- Integrate
- Brakes traditional paradigm of ground transport medical care
- Decreases medical disparity between rural and urban settings

Traditional uses of HEMS

- Rapid retrieval of patient
- Ability to transport to appropriate center
- Austere environment entry
- Focuses around Trauma, STEMI, Stroke, OB, Peds, Neonates
HEMS History

- Military – war experience – Korea and Vietnam
- Success in transporting multiple injured vehicles downrange
- Adopted various military practices into civilian MCI
- 1972 – first continuous HEMS – St Anthony in Denver
- Over 300 services with over 300 helicopters and 300 fixed wing

HEMS

Various HEMS assets – helicopter specific

- Types of Helicopter assets in your area
  - Single engine
  - Dual Engine
  - Military
  - Corporate
  - IFR capable
HEMS – other assets

- Triage
- Communications
- Advanced care personnel
- Surveillance
- Are they being utilized?
- Are they being optimized?

Triage

- Many times first on-scene
- Ability to act as scene commander under appropriate assets arrive
- Most critical initial steps in an MCI

Communications

- Various modalities are used
- UHF and VHF still mainstays
- Multiple hazards can cause many communication issues: terrain/earthquakes/hurricanes
- HEMS can act as repeaters connecting ground units to disaster centers/hospitals, etc.
**Advanced care personnel/Augmented response**

- HEMS can bring uniquely trained medical personnel specific for MCI
- Trauma surgeon, toxicologist, pharmacist, administrators
- Supplies: Blood products, medications, antidotes, Geiger counter, etc.

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**Surveillance**

- Ability to extend radius of monitoring MCI
- Locate victims
- Alert of potential hazards
  - HAZMAT
  - Road/bridge destruction
- Quick determination of damage assessment

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**MCI Issues - HEMS**
Role of HEMS in Disaster Planning

Joint Planning

- Key stakeholders
- Civilian, Military, Corporate
- Hospitals, Government, EMS agencies
- Drills, drills, drills and more drills...
Coordination

- Success of HEMS relies on local/regional/state and federal cooperation/communication
- Best practices
- Coordination of movements
- Best utilization of resources

Integration of a helicopter emergency medical service in a mass casualty response - Jacobs

- Tasked to develop integrated response plan
- 6 New England states
- 3 hospitals based HEMS
- Simulated drills
- Mass casualty events 150 mile radius
- 4 year period

Review of incidents

- Type of event
- Number of victims involved
- Air medical response
- Utilization
- Medical scene control
- Communications
- Hospital involvement
- Transportation
Table 1

<table>
<thead>
<tr>
<th>Incident</th>
<th>Casualties</th>
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<td>Actual</td>
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<td>Building Explosion</td>
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<td>Hotel Fire</td>
<td>12</td>
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<td>School Bus Accident</td>
<td>46</td>
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<td>Aircraft Accident</td>
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<td>Motor Vehicle Accidents</td>
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<td>Evacuation</td>
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<td>Total</td>
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* 13 on 8/8, actual 12 ** Managed by State PD

Table 2

<table>
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<tr>
<th>Actual Events</th>
<th>Number of Victims</th>
<th>Augmented Response</th>
<th>Triage</th>
<th>Medical Treatment</th>
<th>Aid</th>
<th>Surveillance</th>
<th>Evacuation</th>
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</table>

*Initial report for response to plane crash included 16 total victims.
Connecticut HEMS

- HEMS assets are determined by responding team
- Planning process provided excellent cooperation between military and civilian assets
- Each incident has its specific requirements (hazmat, radioactive, burns)
- Main focus areas:
  - Chain of command
  - Communications system
  - On-scene triage
  - Hospital notification
  - Hospital response

Interagency Issues
Connecticut HEMS

- HEMS success rests on pre-established response system and defined roles
- Scene safety very static – importance of updates
- Early notification and key specific info improves overall success of mission
- HEMS should be flexible to provide multiple nontraditional roles at the MCI
- Practice makes perfect (almost...)

Is HEMS in your MCI...

Assessment of U.S. Helicopter Emergency Medical Services' Planning and Preparedness for Disaster Response - Fenn

- Survey to 187 rotor wing members of Association of Air Medical Services
- Divided into three categories
  - Written policy that fulfilled all guidelines
  - Written policy with partially fulfilled guidelines
  - No written policy
Results

- 104 of 187 surveys returned
- 58% responded to an actual disaster
- Only 16% addressed all guidelines
- 53% had written plan with partial met guidelines
- 31% no written plan

Established programs addressed issues better than ones without a plan
Conclusions

- Annual participation in disaster drills
- Disaster response guidelines are keys to success
- Overall: US HEMS are not well prepared for disaster response

Drills and the effect on communications

- Evaluation of Responses of an Air Medical Helicopter Program during a Comprehensive Emergency Response Drill - Burns, et al
- Emergency scenarios
  - Power outage
  - Large number of patients presenting with abdominal pain, n/v
  - Crash on interstate
  - Gasoline truck crash in large building
- Checklist scores – how communications effectively coordinated HEMS
- Exposed various issues that would have gone unrecognized without participation in the emergency preparedness exercise
- Reinforces need for drills

Take Home Points...

- Understand how HEMS can enhance your MCI response
- Fully incorporate HEMS into your MCI
- Ensure HEMS has full participation into MCI exercises
- Drills and HEMS optimization
Questions?


