A Comparison between Government and Hospital Incident Management Teams during Hurricane Harvey


BACKGROUND

Increasing Threats of Natural Disasters

<table>
<thead>
<tr>
<th>Global annual loss: $ 300 billion</th>
<th>U.S. annual loss: $ 100 billion</th>
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<tbody>
<tr>
<td>Total Number: 2.455</td>
<td>Total Number: 2.689</td>
</tr>
<tr>
<td>Total Number: 3.395</td>
<td>Total Number: 3.370</td>
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Hurricane Harvey in 2017

- The costliest tropical cyclone in the U.S. history
- Inflicted $ 125 billion in damage
- Considered a 1,000-year flood
- 30,000 people sought shelter
- 10,000 rescue missions
- Major Disaster declared by State

Incident Management Team (IMT)

- Multidisciplinary: fire, law, medical, etc.
- Multijurisdictional: multiple cities, counties, and states.
- Impromptu formation: constituting members may (can) not be pre-determined.
- Under pressure: limited time, lack of resources, inaccurate and incomplete information.
- Needs for adaptation: coping with constantly changing conditions.

RESEARCH AIMS

Aim 1 To identify similarities and differences between government and hospital IMTs operated during Hurricane Harvey

Aim 2 To offer recommendations for improved emergency responses against future disasters

METHODS

Semi-structured interview

- Participants: 16 (10 gov. + 6 hospital)
- Period: March to September 2018

Data Processing

- Transcribing the interviews
- Automated (AI-based) and manual

Data Analysis

- Qualitative data analysis
- Thematic analysis (Braun and Clark, 2006)
- Using MaxQDA Analysis Pro 2018

RESULTS

1) Structural Aspect

- Consists of five major sections.
- Established in an ad-hoc manner.
- Mid-large team size: up to 900 personnel

2) Functional Aspect

| Government IMT | [ ‘Abnormal emergency’ ]
|----------------|---------------------|
|                | “I have never seen a hurricane [that] stalked five counties in the state ever in my life and nobody had...”
|                | “Hurricane hit on majority of the people that had never experienced or even weren’t around for Alice, Allison.”

| Hospital IMT   | [ ‘Normal emergency’ ]
|----------------|---------------------|
|                | “We had people who were able to do the jobs they normally do.”
|                | “So a lot of our emphasis in our role is placed on resuming the normal operations.”

3) Interface Aspect

| Government IMT | [ A wide range of inter-governmental interface with other government and non-government organizations. ]
|----------------|---------------------|
|                | Limited coordinating activities with adjacent hospitals.

| Hospital IMT   | [ Healthcare IT is not fully integrated with government systems. ]

IMPLICATIONS

- Practical implications for IMTs
  - Flexibility of IMT structure
  - Structure can be adjusted depending on type and scale of events
  - Needs to tailor the IMT to predicted scenarios in the hospital context

Recommendations for Improved Incident Response

- Importance of training for duties during incident operations
  - Training for unfamiliar duties for government IMTs (e.g., five functions)
  - Training for unexpected scenarios for hospital IMTs (e.g., mass casualty)

- More interfacing efforts between IMTs

FUTURE WORK

For theoretical aspect

- Resilience of IMTs during disasters
  - How the two types of IMTs handle expected and unexpected events and remain functional during a disaster.

- Team cognition of IMTs during disasters
  - How the IMTs establish and maintain team cognition (or common operating picture) during a disaster.

For methodological aspect

- An in-situ study of real-world incident
  - Real-time observation for better understanding of IMT operations
  - Identification of adaptive and improvisational behaviors of members

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