Hospital Surge Capacity for Mass Casualty Events – The Israeli System

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Background

There are disturbing signs that surge capacity has diminished since September 11, 2001.
Surge Capacity

“The ability to expand care capabilities in response to prolonged demand”

“Surge capacity encompasses potential patient beds; available space in which patients may be triaged, managed, vaccinated, decontaminated, or simply located; available personnel of all types; necessary medications, supplies and equipment; and even the legal capacity to deliver health care under situations which exceed authorized capacity.”

Surge capacity quantifies a hospital or health system's capacity to provide victims of a MCI with an adequate level of treatment

(Focus on the outcome – resources as SSS are tools to obtain the wanted outcomes)
Some assumptions from The Israeli system
Who is in Command???
Nationally coordinate resources

**National Supreme Health Authority:**

- Defines and enforces the nation’s health policies for disasters and mass casualty events
- Ensure that sufficient equipment and supplies are immediately at hand,
  - Stockpiles at each hospital
  - National distribution centers
Establish goals

- The first priority: Determine the number of patients each hospital must be prepared to receive and treat during MCE.
- This estimate gives planners an explicit goal.
- In Israel - The MOH decided: 20% of the usual bed capacity of the hospital.
Suggested Vs. current preparedness concept in all hospitals in Israel

Prepare Standard Operating Procedures

- All hospitals have SOPs and checklists for various MCEs
- Based on a national doctrine written by the MOH
- Using internal and external call-up systems
- Each hospital – person who responsible for preparing the hospital for MCE
Avoid ED crowding

In a case of MCE alert:

10-15 min – the ER will be cleared and ready for receiving casualties from the MCE

Home or Admission
Promptly clear EDs to accommodate incoming casualties

- EMS - coordinated by national and regional command and control centers

- These centers are linked to every hospital in Israel by radio and land lines

- When a MCE occurs, the command and control center notifies the hospitals closest to the event to prepare to receive casualties
Reinforce medical workforce

Non-emergency physicians and other health care personnel deployed to various tasks by the hospital’s designated MCE manager
Designate an adjoining site to treat patients with minor injuries

Solve battle-neck in the ED - Most hospitals open a temporary “ER” for mild injuries in close proximity to the ED
Injury Severity Scores (ISS) distribution (do patients need immediate care?)

<table>
<thead>
<tr>
<th>ISS</th>
<th>Discharged</th>
<th>1-8</th>
<th>9-14</th>
<th>16-24</th>
<th>25+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median</td>
<td>9</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Average</td>
<td>11</td>
<td>6</td>
<td>2</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Max</td>
<td>44</td>
<td>24</td>
<td>8</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td>Total</td>
<td>694</td>
<td>328</td>
<td>93</td>
<td>68</td>
<td>109</td>
</tr>
<tr>
<td>% of arriving casualties</td>
<td>53.7%</td>
<td>25.4%</td>
<td>7.2%</td>
<td>5.3%</td>
<td>8.4%</td>
</tr>
</tbody>
</table>

Designate a triage hospital

- If the number of casualties overwhelms the resources of the closest hospital, it stops functioning as an admitting hospital and converts to a triage hospital.

- **Triage Hospital** - stabilizing patients for transfer to more distant facilities.
Distribute severely injured casualties among several hospitals

- EMS distribute casualties to several nearby hospitals based on type and severity of injuries - prevent overwhelmed and higher quality of treatment

- Secondary evacuation of casualties - The MOH and the HFC coordinates this process
Assign an EMS liaison to each receiving hospital

- EMS sends a liaison to each hospital that will receive casualties
- This procedure facilitates optimal distribution of casualties
Full-scale drills

- Every hospital conduct a full-scale MCI exercise
- The MOH determines the:
  - scope
  - type (conventional, chemical, or biological)
  - timing of all exercises
- Evaluators are drawn from a different hospital
- The MOH conducts an after-action review with personnel from both hospitals
Biological Mass Event
Healthcare systems

• In Israel, health care in the community is provided by four sick funds (HMO).

• MDA is the national EMS, responsible for casualties evacuation and transfer.

• In a biologic event, the HFC, and the IDF medical corps are part of the community health providers.
In a Biological Mass Event:

- Patients will be referred to hospital only after all means of providing care in the community have been exhausted.

- Hospital will provide care only to severe cases that cannot be treated in the community.
Thanks for your attention
Constantly monitor surge capacity

Using a standard format, hospitals file a daily report with the MOH

It lists:

1. Inpatient and intensive case unit occupancy rates by specialty
2. The hospital’s overall bed capacity
3. The number of patients receiving ventilator support out of the ICU