You can’t get there from here…

Shortfalls in post-disaster patient evacuation planning
Patient Movement

Staging → Transport → Receiving

Incident

Each step is a potential “weakest link”
Staging

- 55 Disaster Medical Assistance Teams (DMATs) furnish emergency medical response with civilian medical teams.
- Each DMAT can keep 30 medical/surgical noncritical inpatients stable pending evacuation, prepare 200 patients for evacuation, and stage (i.e., move to evacuation transport) up to 100 patients.
- All the DMATs in the country working together could handle about 5,000 patients per day.
- Military assets not positioned for timely response.
Transport - Staff

- Trained aeromedical personnel needed to transport patients are limited in number.
- Most military aeromedical personnel (65%) are in the Air Force Reserve
- Would likely take some time to be called up in a crisis
- For critical care patients, not only is there a limited number of highly trained personnel, but each three-member Critical Care Air Transport Team can only accommodate three ventilator patients or six non-ventilator critical care patients per flight.
Transport - Equipment

- More than 1,000 cargo planes in the U.S. Air Force, Air Force Reserve, and Air National Guard can be reconfigured for medical transportation
- Priority goes to operational missions
- C-9 Nightingale discontinued
- CRAF
Some 1,400 airframes, including 45 Boeing 767s, identified for aeromedical evacuation, are available to the federal government on short notice via the CRAF program. It would take 60 hours to reconfigure the first CRAF aircraft. Others would become available over a period of weeks, as all the planes must go to one contractor in Galveston for the conversion.
Who will receive?

- The lack of surge capacity in American hospitals is such that few, if any, hospitals could handle a sudden influx of 100 patients needing advanced life-support care. In most locales, even the combined resources of all hospitals in a metropolitan area could not handle such a demand. No city in America, and no contiguous geographic region could handle 1000 patients suddenly needing advanced medical care. (Senate Committee on Government Affairs, 2001)
Between 1995 and 2008, hospitals eliminated 129,556 (12%) of all operational beds.

From 1995 to 2001, 20% of intensive care unit capacity was lost.

Between 1990 and 2009, the number of emergency rooms (ERs) in non-rural U.S. hospitals declined by 27% (from 2,446 to 1,779).
Contributing Factors

- Distribution of professional staff
- Extent of training
- Just in time (JIT) supply practices
- Awareness
  - In a survey of training needs at NDMS-participating hospitals, 25% of respondent hospitals were unaware of their designation as an NDMS hospital
- Facility Availability
  - NDMS planning relies on 110,605 pre-committed beds
  - 11.6% of the total 951,045 U.S. hospital beds
  - Urban medical center overcrowding
Conclusion

- Serious deficiencies in patient movement planning factors
- Corresponding shortfall in receiving hospital capacity
- Dangerous assumptions in the availability, capability of federal medical response assets
- **Better coordination, planning is necessary**
References

- Cantrill, S.V. (2007). *Preparing for Pandemic Influenza: The Hospital and Community Perspective.* [Link](http://biotech.law.lsu.edu/blaw/flu/Cantrill_Flu_05_07.ppt)
References


References