Mass Medical Care with Scarce Resources: Community Planning

National Emergency Management Summit

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Co Editor
Director, Public Health Emergency Preparedness
Providing Mass Medical Care with Scarce Resources: A Community Planning Guide

Collaboration between AHRQ and ASPR

- Ethical Considerations in Community Disaster Planning
- Assessing the Legal Environment
- Prehospital Care
- Hospital/Acute Care
- Alternative Care Sites
- Palliative Care
- Influenza Pandemic Case Study
<table>
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<th>Lead Authors:</th>
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<tbody>
<tr>
<td>– Marc Roberts, PhD Harvard University</td>
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<td>– James C. Hodge, Jr.- Georgetown and Johns Hopkins University</td>
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<td>– Edward J. Gabriel- Walt Disney Corp.</td>
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<td>– John L. Hick- Hennepin County Medical Center, University of Minnesota</td>
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<td>– Stephen Cantrill- Denver Health Medical Center</td>
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<td>– Anne Wilkerson- RAND Corp</td>
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<td>– Marianne Matzo- University of Oklahoma</td>
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Ethical Principles

- Greatest good for greatest number
  - Utilitarian perspective important to consider
- Other principles important to consider
  - Respecting the norms and values of the community
  - Respecting all human beings
  - Determining what is right and fair
Ethical Principles

- Ethical process requires
  - Openness
  - Explicit decisions
  - Transparent reporting
  - Political accountability

- Difficult choices will have to be made; the better we plan the more ethically sound the choices will be
Legal Issues

- Can the local community declare a disaster?

- Advance planning and issue identification are essential, but not sufficient

- Legal Triage – planners should partner with legal community for planning and during disasters
Prehospital Care

Edward Gabriel, M.P.A., AEMT-P
Edward Gabriel, Director of Crisis Management for Walt Disney Corporation; Past Deputy Commissioner for Planning and Preparedness NYC Office of Emergency Management
In the event of a Catastrophic MCE, the emergency medical services (EMS) systems will be called on to provide first-responder rescue, assessment, care, and transportation and access to the emergency medical health care system.

The bulk of EMS in this country is provided through a complex system of highly variable organizational structures.
Plan and implement strategies to maximize to the extent possible:

- Use and availability of EMS personnel
- Transport capacity
- Role of dispatch and Public Safety Answering Points
RECOMMENDATIONS: EMS PLANNERS

Mutual aid agreements or interstate compacts to:

- Address licensure and indemnification matters regarding responders
- Address memoranda of understandings (MOUs) among public, volunteer, and private ambulance services
- Coordinate response to potential MCEs
RECOMMENDATIONS: EMS PLANNERS

- Use natural opportunities to exercise disaster planning
- Develop strategies to identify large numbers of young children who may be separated from parents
- Develop strategies to identify and respond to vulnerable populations
RECOMMENDATIONS: EMS PLANNERS

- Develop partnerships with Federal, State, and local stakeholders to clarify roles, resources, and responses to potential MCEs.
- Improve communication and coordination strategies and backup plans.
- Exercise, evaluate, modify, and refine MCE plans.
“Emergency management is really about building relationships, whether you are in the public or private sector.”

“And in building those relationships, it is important to remember not to *tell*, but to *talk*.”
Hospital Care

John L. Hick, M.D.
Emergency Physician
Hennepin County Medical Center
Chair, Metropolitan Hospital Compact
Hospital Care
Planning Assumptions

- Overwhelming demand
- Greatest good
- Resources lacking
- No temporary solution
- Federal level may provide guidance

- Operational implementation is State/local
- State emergency health powers
- Provider liability protection
Coordinated Mass Casualty Care

- Effective incident management is critical.
- Fully integrated:
  - Conduct action planning cycles
  - Anticipate resource needs
  - Make timely requests and allocate
Coordinated Mass Casualty Care

- Increased system capacity (surge capacity)
- Decisionmaking process for resource allocation
  - Shift from reactive to proactive strategies
  - Administrative vs. clinical changes
### Incremental changes to standard of care

#### Usual patient care provided

- Triage set up in lobby area
- Meals served by nonclinical staff
- Nurse educators pulled to clinical duties
- Disaster documentation forms used

#### Austere patient care provided

- Significant reduction in documentation
- Significant changes in nurse/patient ratios
- Use of non-healthcare workers to provide basic patient cares (bathing, assistance, feeding)
- Cancel most/all outpatient appointments and procedures

#### Clinical changes

- Vital signs checked less regularly
- Deny care to those presenting to ED with minor symptoms
- Stable ventilator patients managed on step-down beds
- Minimal lab and x-ray testing

- Re-allocate ventilators due to shortage
- Significantly raise threshold for admission (chest pain with normal ECG goes home, etc.)
- Use of non-healthcare workers to provide basic patient cares (bathing, assistance, feeding)
- Allocate limited antivirals to select patients

### Administrative Changes to usual care

- Low impact administration changes
- High impact clinical changes

### Clinical Changes to usual care

- Use of non-healthcare workers to provide basic patient cares (bathing, assistance, feeding)
- Minimal lab and x-ray testing

- Need increasingly exceeds resources
State-level Responsibilities

- Recognize resource shortfall
- Request additional resources or facilitate transfer of patients/alternative care sites

- Provide supportive policy and decision tools
- Provide liability relief
- Manage the scarce resources in an equitable framework
Hospital Responsibilities

- Plan for administrative adaptations (roles and responsibilities)
- Optimize surge capacity planning
- Practice incident management and work with regional stakeholders
- Decisionmaking process for scarce resource situations
Scarce Clinical Resources

- Process for planning vs. process for response
- Response concept of operations:
  - IMS recognizes situation
  - Clinical care committee
  - Triage plan
  - Decision implementation
Multiple institutional stakeholders decide, based on resources and demand:

- Administrative decisions – primary, secondary, tertiary triage
- Ethical basis – AMA principles, etc.
- Decision tool(s) to be used
Triage Plan

- Assign triage staff
- Review resources and demand
- Use decision tools and clinical judgment to determine which patients will benefit most
- Advise “bed czar” or other implementing staff
Implementing Decisions

- “Bed Czar” or other designated staff
- Transition of care support (as needed)
- Behavioral health issues
- Security issues
- Administrative issues
- Palliative care issues
Alternative Care Sites

Stephen V. Cantrill, M.D., FACEP
Associate Director
Department of Emergency Medicine
Denver Health Medical Center
Alternative Care Sites
Concept of an Alternative Care Site

- Nontraditional location for the provision of health care
- Wide range of potential levels of care:
  - Traditional inpatient care
  - Chronic care
  - Palliative care
  - Home care
Potential Uses of an ACS

- Primary triage of victims
- Offloaded hospital ward patients
- Primary victim care
- Nursing home replacement
- Ambulatory chronic care/shelter
- Quarantine
- Palliative care
- Vaccine/drug distribution center
Potential Alternative Care Sites

- Buildings of opportunity
  - Advantage of preexisting infrastructure support
  - Convention centers, hotels, schools, same-day surgery centers, shuttered hospitals, etc.

- Portable or temporary shelters
  - Flexible but may be costly

- Sites best identified in advance
Factors in Selecting an ACS

- Basic environmental support
  - HVAC, plumbing, lighting, sanitary facilities, etc
- Adequate spaces
  - Patient care, family areas, pharmacy, food prep, mortuary, etc
- Ease in establishing security
- Access: patients/supplies/EMS

Site Selection Tool:
www.ahrq.gov/downloads/pub/biotertools/alttool.xls
<table>
<thead>
<tr>
<th>Potential Non-Hospital Site Analysis Matrix</th>
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<tbody>
<tr>
<td>Ability to lock down facility</td>
</tr>
<tr>
<td>Adequate building security personnel</td>
</tr>
<tr>
<td>Adequate Lighting</td>
</tr>
<tr>
<td>Air Conditioning</td>
</tr>
<tr>
<td>Area for equipment storage</td>
</tr>
<tr>
<td>Biohazard &amp; other waste disposal</td>
</tr>
<tr>
<td>Communications (# phones, Local/Long Distance, Intercom)</td>
</tr>
<tr>
<td>Door sizes adequate for gurneys/beds</td>
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<tr>
<td>Electrical Power (Backup)</td>
</tr>
<tr>
<td>Family Areas</td>
</tr>
<tr>
<td>Floor &amp; Walls</td>
</tr>
<tr>
<td>Food supply/food prep areas (size)</td>
</tr>
<tr>
<td>Heating</td>
</tr>
<tr>
<td>Lab/specimen handling area</td>
</tr>
<tr>
<td>Laundry</td>
</tr>
<tr>
<td>Loading Dock</td>
</tr>
<tr>
<td>Mortuary holding area</td>
</tr>
<tr>
<td>Oxygen delivery capability</td>
</tr>
<tr>
<td>Parking for staff/visitors</td>
</tr>
<tr>
<td>Patient decontamination areas</td>
</tr>
<tr>
<td>Pharmacy Area</td>
</tr>
<tr>
<td>Proximity to main hospital</td>
</tr>
<tr>
<td>Roof</td>
</tr>
<tr>
<td>Space for Auxillary Services (Rx, counselors, chapel)</td>
</tr>
<tr>
<td>Staff Areas</td>
</tr>
<tr>
<td>Toilet Facilities/Showers (#)</td>
</tr>
<tr>
<td>Two-way radio capability to main facility</td>
</tr>
<tr>
<td>Water</td>
</tr>
<tr>
<td>Wired for IT and Internet Access</td>
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</tbody>
</table>
| Total Rating/Ranking (Largest # Indicates Best Site) | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Some Issues and Decision Points

- Who is responsible for the advance planning?
- “Ownership” and command and control of the site
- Decision to open an alternative care site
- Supplies/equipment
- Staffing
  - Emergency System for Advanced Registration of Volunteer Health Professionals: ESAR-VHP?
  - Medical Reserve Corps?
Some Issues and Decision Points

- Documentation of care
- Communications
- Rules/policies for operation
- Exit strategy
- Exercises
Katrina/Rita: ACS Issues

- Importance of regional planning
- Importance of security
- Advantages of manpower proximity
- Segregating special needs populations
- Organized facility layout
- Importance of incident command system
Katrina/Rita: ACS Issues

- The need for “House Rules”
- Importance of public health issues
  - Safe food
  - Clean water
  - Latrine resources
  - Sanitation supplies
Palliative Care Issues

Marianne Matzo, Ph.D., APRN, BC, FAAN
Professor, Palliative Care Nursing
University of Oklahoma College of Nursing
Palliative care is care provided by an interdisciplinary team.

- Focused on the relief of suffering
- Support for the best possible quality of life
Catastrophic Mass Casualty
Palliative Care

Palliative Care is:
- Evidence-based medical treatment
- Vigorous care of pain and symptoms throughout illness
- Care that patients want

Palliative Care is not:
- Abandonment
- The same as hospice
- Euthanasia
- Hastening death
- Good palliative care occurs wherever the patient is.
- The community should be prepared about the principles of palliative care in a disaster situation.
The minimum goal: die pain and symptom free.

Effective pain and symptom management is a basic minimum of service.
Adequate and aggressive palliative care services should be available to everyone.

Palliative care under circumstances of a mass casualty event is aggressive symptom management.
Catastrophic MCE

Triage + 1st response

Prevailing circumstances

Receiving disease modifying treatment

Existing hospice and PC patients

The too well

The optimal for treatment

The too sick to survive
The too sick to survive *

Initially left in place

Then: Transport Other than active treatment site

* 1. Those exposed who will die over the course of weeks  
2. Already existing palliative care population  
3. Vulnerable population who become palliative care due to scarcity
Clinical Services After Triage

- Resources:
  - Personnel
  - Coordination
  - Supplies
Clinical Process Issues

- Symptom management, including sedation near death
- Spirituality/meaningfulness
- Family and provider support – mental health
- Family and provider grief and bereavement
- Event-driven protocols and clinical pathways
“Many of us discussed the need to evaluate what happened and learn how to be better prepared for the future.”

“You’re expected to know how to do mass casualty…. You must train for the worst and hope for the best.”
Application of Concepts to a Pandemic Case Study

Ann Knebel, R.N., D.N.Sc., FAAN

Captain
U.S. Public Health Service
ASPR
Co Editor

AHRQ
The Next Pandemic – What Can We Expect?
## Estimates of Impact of 1918-like Event

<table>
<thead>
<tr>
<th>Category</th>
<th>Estimate</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Illness</td>
<td>90 million</td>
<td>(30%)</td>
</tr>
<tr>
<td>Outpatient medical care</td>
<td>45 million</td>
<td>(50%)</td>
</tr>
<tr>
<td>Hospitalization</td>
<td>9,900,000</td>
<td></td>
</tr>
<tr>
<td>ICU care</td>
<td>1,485,000</td>
<td></td>
</tr>
<tr>
<td>Mechanical ventilation</td>
<td>745,500</td>
<td></td>
</tr>
<tr>
<td>Deaths</td>
<td>1,903,000</td>
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Containment Strategies
Community-based Interventions

1. Delay outbreak peak
2. Decompress peak burden on hospitals/infrastructure
3. Diminish overall cases and health impacts

Pandemic outbreak:
No intervention

Pandemic outbreak:
With intervention

Days Since First Case

Daily Cases

#1

#2

#3
Seasonal Flu vs. Pandemic Flu

Seasonal
- Predictable patterns
- Some immunity
- Healthy adults not at serious risk
- Health systems adequate to meet needs

Pandemic
- Occurs rarely
- Little or no immunity
- Health people may be at increased risk
- Health systems may be overwhelmed
Role of the Primary Care Provider

Emergency Hospital during influenza epidemic, Camp Funston, Kansas. Shows head to foot bed arrangement. National Museum of Health and Medicine, Armed Forces Institute of Pathology, NCP 1603.
Role of Home Care

- Significant role for primary care providers
- Family members will play a significant role
- Planning should consider
Daily Deaths, Ohio, 1918

Take Home Messages

- Community-level planning should be going on now, including the broad range of stakeholders
- Regional planning and coalition building serve as “force multipliers”
- Engage the community in a transparent planning process and communication strategy
More Information

Pandemic Flu.gov

One-stop access to U.S. Government avian and pandemic flu information. Managed by the Department of Health and Human Services.

Understanding Flu Terms

- Flu terms defined — Seasonal flu, avian flu, and pandemic flu are not the same.

News

- Nov 20 — HHS Buys Additional Vaccine for Potential Use in an Influenza Pandemic: More >>
- Nov 14 — U.S. and Mexico Pledge Increased Cooperation in Pandemic Influenza Preparedness Along Border: News Release >>
- Nov 14 — Inexpensive Test Detects H5N1 Infections Quickly and Accurately: News Release >>
- Nov 13 — Department of Health and Human Services Releases Pandemic Planning Update III: More >>

News Archive >>

WHO Pandemic Alert Phase

- Phase 3: No or very limited human-to-human transmission

Avian Flu Watch

- Human Cases (WHO)
- Animal Infection (OIE)
- Situation Update (WHO)
- Indonesia Situation (WHO)
Visit the AHRQ Web site:

http://ahrq.gov/browse/bioterbr.htm

Community Planning guide:

http://www.ahrq.gov/research/mce