The Capitol Region Metropolitan Medical Response System

Community-Based Medical Surge Capability

Presented to CREPC ESF 8 (Health and Medical)
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Let’s Talk…

• This is a new conversation
• It needs to be an honest conversation
• You’ll need to open your mind to new ideas and new possibilities
Definitions

From Revised Med Surge TCL (October 2006):

**Medical Surge Capacity:** Rapid expansion of the capacity of the existing healthcare system in response to an event that results in:

- Increased need of Personnel (clinical and non-clinical), Support functions (laboratories and radiological), Physical space (beds, alternate care facilities), Logistical support (clinical and non-clinical equipment and supplies)

It's what we do everyday
Definitions


**Medical Surge Capability:** the capability of the community to rapidly expand the capacity of the existing healthcare system in order to provide medical screening and subsequent medical care.

This includes providing definitive care to individuals at the appropriate clinical level of care, with sufficient time to achieve recovery and to minimize medical complications.

This is the community’s role to provide care when the healthcare system as we know it is maxed out.
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So, what’s the difference?

Healthcare System Med Surge Capacity:
• Since we do it everyday, we are comfortable with
  the concept
• We also know the answers right now:
  - CMED and EMS know where to go for added resources, how long it will take, and where is the breaking point
  - Hospitals know right now what their surge capacity is at 4 hours, 8 hours, 24 hours
• Most importantly, systems exist to make it all happen
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So, what’s the difference?

Community-Based Med Surge Capability:
• Since we have never done it, even the concept can be scary and uncomfortable
• We know some of the answers right now, but there’s a lot we don’t know
• Most importantly, we’re missing two key things:
  – Buy-in from our communities
  – Systems to make it all happen
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Metropolitan Medical
Response System

Rob Gougelet
Concept of CMSC and
Current Planning
The Capitol Region Metropolitan Medical Response System

Lisa Stone

Role of State Agencies in CMSC Planning
The Capitol Region
Metropolitan Medical Response System

Kathy Brinsfield

Boston’s Approach to Med Surge Issues
Surge Capacity Planning in Boston: history and challenges

Kathryn Brinsfield, MD, MPH
Boston EMS
Boston University
Information/Intelligence

HVA

Preparedness

Lessons Learned

Response/Drill
Information/Intelligence

• Locals are responsible for planning
  – Identifying areas of need
  – Wisely spending grant dollars

• Locals are responsible for response

• Why aren’t locals responsible for medical intelligence?
Welcome to Boston and the Democratic National Convention.
- We know some of the threat
- We don’t know how likely they are to happen
- Can’t do an HVA
Information/Intelligence ➔ HVA ➔ Preparedness ➔ Response/Drill ➔ Lessons Learned
Responses

• 9/11
• Station Nightclub Fire
• Mt Auburn Boiler Explosion
• Cambridge Fire
• Guerilla Marketing???
Mt Auburn Boiler Explosion Hospital Evacuation
Aqua Teen Hunger Force
Drills

- Surge: Severe Weather/Burn Capacity
- Surge II: Sars
- Surge III: Contamination of Area, EOC integration
- Son of Surge: Pandemic Influenza
- Daughter of Surge: Hospital Evacuation
• All drills start focus on initial actions
• Often over by time hospital, healthcare actions start
• Number of patients not adequate to truly test surge capacity of system
Lessons learned

• Regulations
  – Liability
  – Licensed beds

• Patient Tracking

• Blood Surge

• Evacuation
Boston Patient Tracking EMSWare Architecture
Warm Blood

- New England area operates on a less than one day supply of blood
- Approx 5000 units
- Using military numbers of 6 units/patient in an MCI
- Surge capacity is less than a 1000 patients
Evacuation
Critical Infrastructure

- Communications
- Infrastructure protection
- Part of the Recovery Plan
All Hazards Planning
MISTAKES

It could be that the purpose of your life is only to serve as a warning to others.
Ron Gross
The Role of Hospitals in Community-Based Med Surge
COMMUNITY-BASED MEDICAL SURGE CAPACITY (CMSC)

The Role of Hospitals in Planning

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My thanks to

• John J. Shaw, DMD, Medical Response Coordinator, Capitol Region Metropolitan Medical Response System for the privilege of participating

• Joseph V. Portereiko, DO, FACS, Member, MFH Project & Medical Director, CT USAR

and

Alexander Eastman, MD, Department of Surgery
UT Southwestern Medical Center, Chief Medical Officer, Special Operations/Homeland Security Division (SWAT), Dallas Police Department

for materials used in this presentation
Background: Theory (Myth?)

- Hospitals have built in surge capacity (aka “disaster plans”)
- Traditional focus on the hospital’s ability to expand capabilities
  - Facility
  - Staff
  - Resources
- THEN CAME SEPTEMBER 11, 2001
Background: REALITY

• Unknown threats exist
• Healthcare institutions remain underprepared
• Contamination or destruction of TC/EDs remains a major concern
• Existing urban trauma centers/emergency departments often at capacity
  – Hospital Diversion = surge capacity is gone!
Let’s agree on one thing first:

A community-based medical/surgical surge capacity program is the ONLY way that we are going to provide care in a mass casualty disaster setting.
KEY ISSUES

• Role of hospitals in CMSC
• Role of the community in CMSC
• Impact on hospital function
• What is the “standard of care” in a remote location?
• Liability
  – Hospitals
  – Staff
  – Locality
  – State
Determinants of Surge Capacity

Event

Pre-hospital management

Surge arrivals

Hospital or network capacity

Surge Discharge

Home

Out-of-region facility

SNF

Treated

Died

Staff

Medical supplies

Bed

Reality of Surge Plan

Event -> Pre-hospital management

Surge arrivals -> Hospital or network capacity

Hospital or network capacity -> Surge Discharge*

Surge Discharge* -> Home

Surge Discharge* -> Out-of-region facility

Surge Discharge* -> SNF

Hospital or network capacity -> Medical supplies

Medical supplies -> Staff

Staff -> Beds

Beds -> Hospital or network capacity

Treated

Died
Bulwark for a CMSC: Statewide Trauma System

• Connecticut DPH regulation - 1995
  – citizens from across the state have access to trauma care
• The goal of the State Trauma System Plan
  – inclusive and dynamic trauma system
  – appropriately funded
  – well staffed
  – resources needed to respond to the needs of the injured patient in the State of Connecticut
The Bottom Line…

• Infrastructure is already in place
  – American College of Surgeons verifies trauma centers as Level I-III
  – State Trauma Regulations designate trauma centers
  – Hospitals accustomed to working as a network
• ~ 90% of Connecticut citizens are within 20 minutes of a Trauma Center
• Essential to involve the hospitals and the trauma system in planning and preparation for disasters of any sort
Key Principles in (Community) Disaster Response Planning Issues

- Preparation
- Training
- Practice
- Detection and surveillance
- Triage and Access
  - Patients
  - Staff
- Communication
  - Intra-facility
  - Inter-facility
  - Family members
  - Media relations
  - Rumor control
  - Education
Conceptual Model of Education As A Modulating Factor

Additional Considerations for Effective Response

**Minimal Acceptable Care**

*NOT* **Standard of Care!**

Keep intervention to a MINIMUM (if at ALL) during acute casualty influx. Reassess needs once influx subsides.
Management of the Bird Flu Pandemic
Connecticut’s Assumptions About “the Surge”

• Resources of the US Department of Homeland Security’s National Disaster Medical System (NDMS) are not immediately available following a mass casualty occurrence.

• NDMS is a secondary resource for transportation of patients to definitive care outside of Connecticut during the first hours of a mass casualty
Connecticut’s Assumptions About “the Surge”

• For the first 24-96 hours of an incident, the Connecticut system of response relies on
  – existing transportation resources
  – mutual aid agreements
  – five designated emergency preparedness regions
    • established in 2005 by the CT Department of Emergency Management and Homeland Security (DEMHS).
Connecticut’s Assumptions About “the Surge”

- Sophisticated resources for the expert management of (medical/trauma/burn) patients typically are found in (medical/trauma/burn centers).
We are used to........
We can, and we will have to do this differently!
Connecticut’s Assumptions About “the Surge”

• (Medical/trauma/burn) center expertise in the interdisciplinary needs of these victims warrants the development of a pragmatic protocol for the primary triage of these victims that includes
  – on-scene or near-scene medical stabilization
  – transport to recognized (medical/trauma/burn) centers.
Connecticut’s Assumptions About “the Surge”

• The incident and the number of casualties is of such a magnitude that local communities require assistance from other regions, from the State of Connecticut, and from applicable federal agencies in order to successfully manage and transport such casualties.
Connecticut’s Assumptions About “the Surge”

• The State of Connecticut Protocol for the Pre-Hospital Management of Multiple (Burn/Trauma/Medical) Victims has been activated.
Connecticut’s Assumptions About “the Surge”

- The Statewide Trauma System Plan forms the matrix for
  - Disaster response planning
  - Prehospital triage
  - Forward movement of patients in an organized and predictable manner
  - Assisting the rapid implementation of the Capitol Region Metropolitan Medical Response System (CR-MMRS)
Connecticut’s Assumptions About “the Surge”

- Hospitals need to be involved in planning and preparation of all-hazards response protocols
  - Planning, surveillance, emergency response, communication, education, and evaluation

- Hospitals need to respond quickly
  - Injured will most likely seek care from their local hospital
RECONSIDER Connecticut’s Assumptions About “the Surge”

- (Medical/trauma/burn) center expertise in the interdisciplinary needs of these victims warrants the development of a pragmatic protocol for the primary triage of these victims that includes
  - on-scene or near-scene medical stabilization
  - transport to recognized (medical/trauma/burn) centers.
Connecticut’s Implementation of a Surge Capacity

- (Medical/trauma/burn) center expertise in the interdisciplinary needs of these victims warrants the development of a pragmatic protocol for the primary assessment triage of these victims that includes
  - on-scene/near-scene medical triage stabilization
  - transport to recognized (medical/trauma/burn) surge holding centers.
Statewide Need

• Where is there...
  – A true need?
  – Adequate space?
  – Adequate shelter?
  – Adequate resources?
  – Adequate personnel?

…… for “additional locations”?
Connecticut Mobile Field Hospital

• 2003 bond appropriation
  – $8.2 million
    • $5.0 million - non-medical equipment
    • $3.0 million - medical equipment
    • $??? - Personnel
Connecticut Mobile Field Hospital

- 100 bed multi-function facility
  - Four 25 bed segments
    - Independently functional
  - Towable
    - 38 trailers
    - Most by SUV
  - Single segment set up in 6 - 8 hours
  - Complete set-up in 24 hours
Connecticut Mobile Field Hospital

- 100 configuration
  - Receiving / Triage Center
  - 30 bed ICU
  - 10 bed step-down unit
  - 60 bed ambulatory care ward
Connecticut Mobile Field Hospital

- 25 – (100) bed facility
  - Quarantine center
  - Triage center
  - Remote staging facility
  - Vaccination center
  - Alternative care site
  - Physical resource for disrupted facility
Mission Versatility

• Pandemic outbreaks
• CBRNE incidents
• Natural disasters
• Facility catastrophic loss

…ALL-HAZARDS…
All-Hazards Planning

• Remote triage/care facility (facilities)
  – Lessen contamination
  – Lessen overcrowding
  – Release to “home care”
  – Refer to inpatient facility
  – Stage transfer out of region/state
All-Hazards Planning

• Additional inpatient footprint
  – Protect main facility
  – Augment bed capacity
    • For routine care areas
    • For surge reception / treatment
  – Sickest to facility’s critical care beds
  – Less sick to MFH beds or facility’s beds
  – Non-infected general population to MFH beds
COMMUNITY-BASED MEDICAL SURGE CAPACITY

• All disasters are LOCAL events
  – Local plan, LOCAL PLANNERS
  – Local participants, resources
  – Institutional awareness AND buy-in
  – Regional resources
    • MRC, MMRS, Health systems
  – CT Emergency Credentialing Program
  – Medical Response Corps
    • Volunteers
COMMUNITY-BASED MEDICAL SURGE CAPACITY

• Communities must
  – Pre-determine appropriate sites
  – Perform comprehensive assessment of available resources at established time intervals
  – Level of support for
    • Manpower
    • Disposable goods
    • Durable goods
    • Transportation
COMMUNITY-BASED MEDICAL SURGE CAPACITY

• Equipment Requirements
  – MFH cache
  – Augmented by institution
  – Training of personnel
  – Logistics Support for MFH structure

• Transportation assistance
  – Movement between locations
  – Regional plans
  – Established MOU’s
Unanswered Questions

• Prehospital Casualty Triage
  – Most important medical mission at scene
  – “Disaster triage”
    • Greatest good for the greatest number
    • Who needs immediate care vs who does not?
  – RATIONING of resources/care
  – Who will take THAT responsibility?
Unanswered Questions

Who is going to determine the “Standard of Care” in an alternative site that handles the surge?
Unanswered Questions

• Who is going to staff what?
  – Physicians
  – Nurses
  – Respiratory technicians
  – Dietitians
  – Social service coordinators

• What if surgery is needed?
Unanswered Questions

• What if life saving-surgery is needed?

• ANSWER:
  – “You’re gonna die”
  OR
  – Rethink MFH capabilities
  – Commandeer local
    • Surgicenters
    • Dentist offices
Unanswered Questions

• Credentialing
• Who allocates personnel resources?
  – Scheduling
  – Malpractice
  – Workman’s compensation
  – Health insurance
ANSWERS & CONCLUSIONS:

• Hospitals will be overwhelmed and assets will be exhausted in the early phase of a disaster or mass casualty incident without local assistance
• Hospitals CAN (and most likely will) be taken out
• The State Trauma System Plan can be used to form the bulwark of the disaster response
• Hospitals are LOCAL resources that serve regional bases
• Community health departments and elected government officials must form the base of a local response plan that is networked to the local and regional assets
ANSWERS & CONCLUSIONS:

• Traditional models will NOT work
• Community leaders and health departments must be involved in pre-planning
• Communities must network to form integrated regional plans
• Community assets must be
  – Frequently inventoried
  – Readily available
ANSWERS & CONCLUSIONS:

• Optimal surge response plan does not exist
• Mobile Field Hospital as viable option
• Versatility is an institutional, local, and regional asset
• Hospital plans must anticipate surge and must rely on community support
• Plans should include regional collaboration
Next Steps

- Working group appointed to evaluate AHRQ ACS selection tool in pre-hospital setting
  - Scott Aronson, Chair; Andy McGuire, Maryann Cherniak-Lexius, Bob Falaguerra, Cressy Goodwin
  - Report to ESF 8 at June meeting

- Expand the conversation
- Develop the systems
- Make it work
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Setting the Goal

MAY, 2008

• Identification and pre-selection of (10?) CMSC sites in the Capitol Region
• Report on Community-based medical surge planning in the Capitol Region to include:
  • Community participation
  • Preparedness status
  • Challenges remaining
  • Recommendations for coming year
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Thank You, Pat and Tony’s!

Rev. Jim Hynes, OFM
Rev. Steve Pavignano, OFM