

# 2010 Conference on Health and Humanitarian Logistics: “Disaster preparedness, response, and post-disaster operations”

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**New England Center for Emergency Preparedness  
at Dartmouth Medical School**

# NECEP Overview

## Mission



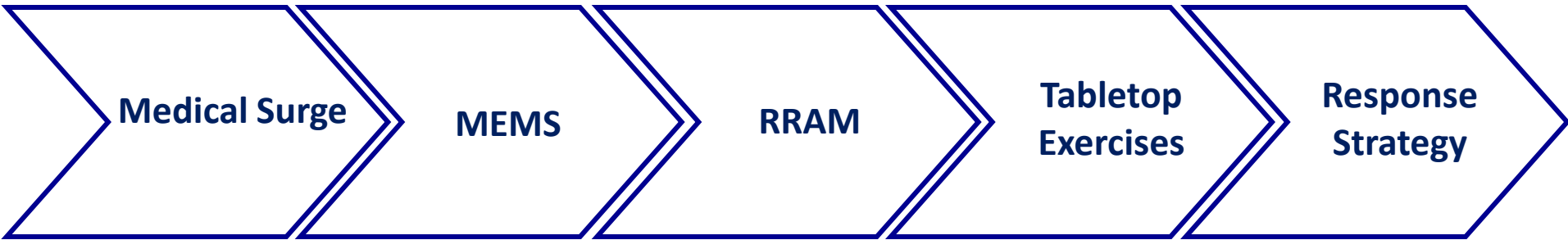
Emergency  
Response

Technical  
Assistance

Coordinating  
Agency

- Improve emergency response in Northern New England through facilitating coordination of all-hazards planning and response to mass casualty and other events
- NECEP provides assistance through training & education, planning guidance and operational exercises
- Leverage applied research and expertise:
  - Dartmouth-Hitchcock Medical Center
  - Dartmouth Medical School
  - The Dartmouth Institute for Health Policy and Clinical Practice
  - Tuck School of Business & Thayer School of Engineering
- Northern New England Metropolitan Medical Response System (NNE MMRS)
- New England Disaster Medical Assistance Team (NH1 DMAT)

# Presentation Summary



# Medical Surge: Definition

**MEDICAL SURGE** is the ability to provide medical treatment to patients that exceed normal health care system capacity by more than 30%. For state-wide medical surge plans, the number of patients requiring care exceeds the overall capacity of the state health care system by more than 30%.

A **Regional Response System (RRS)** capitalizes on the *inherent* capabilities of state and sub-state actors to coordinate an effective response in the hours and days after a catastrophic emergency.

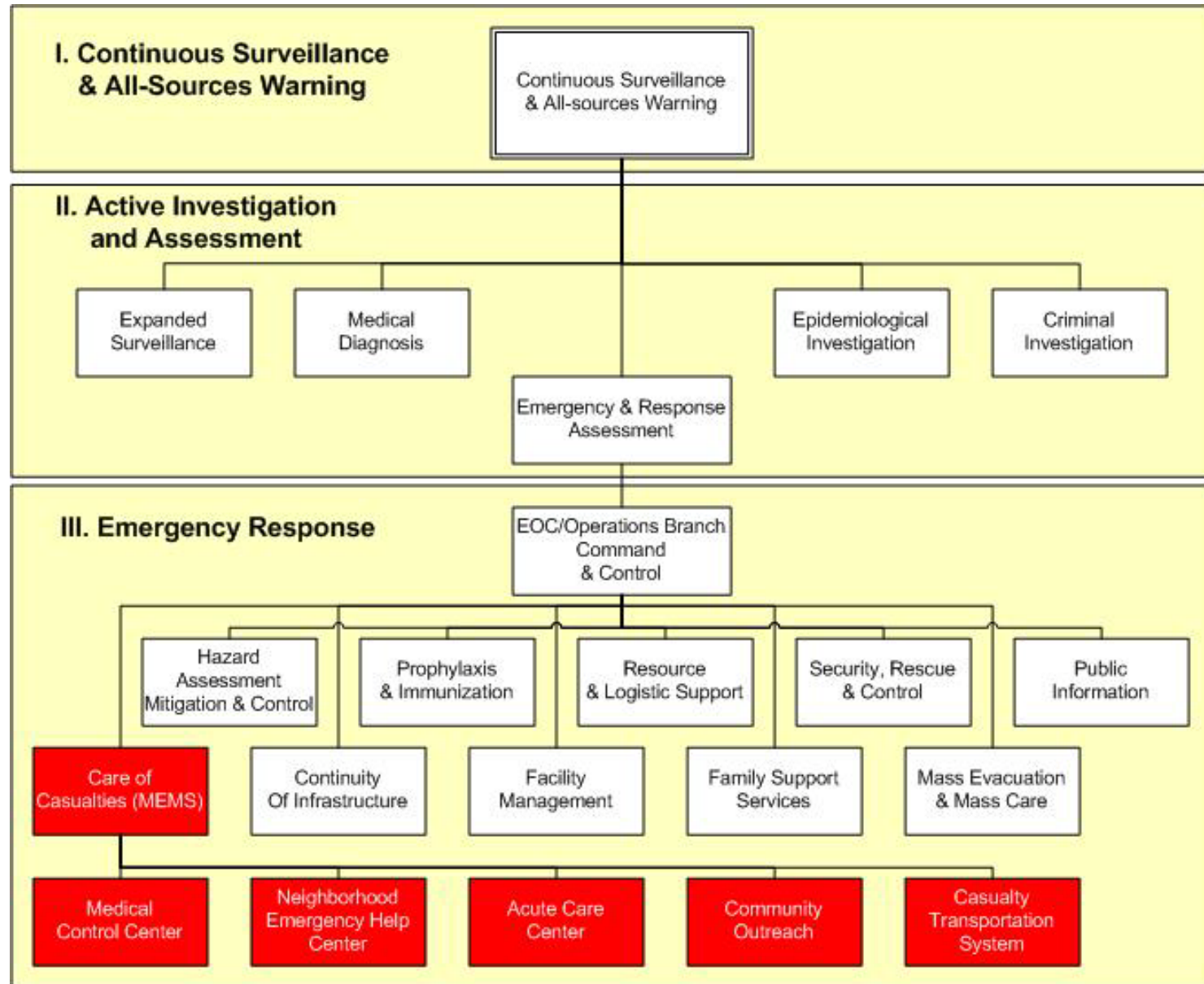
# Modular Emergency Medical System Capitalizing on *Inherent* Regional Capability

To build a mass casualty emergency response system:

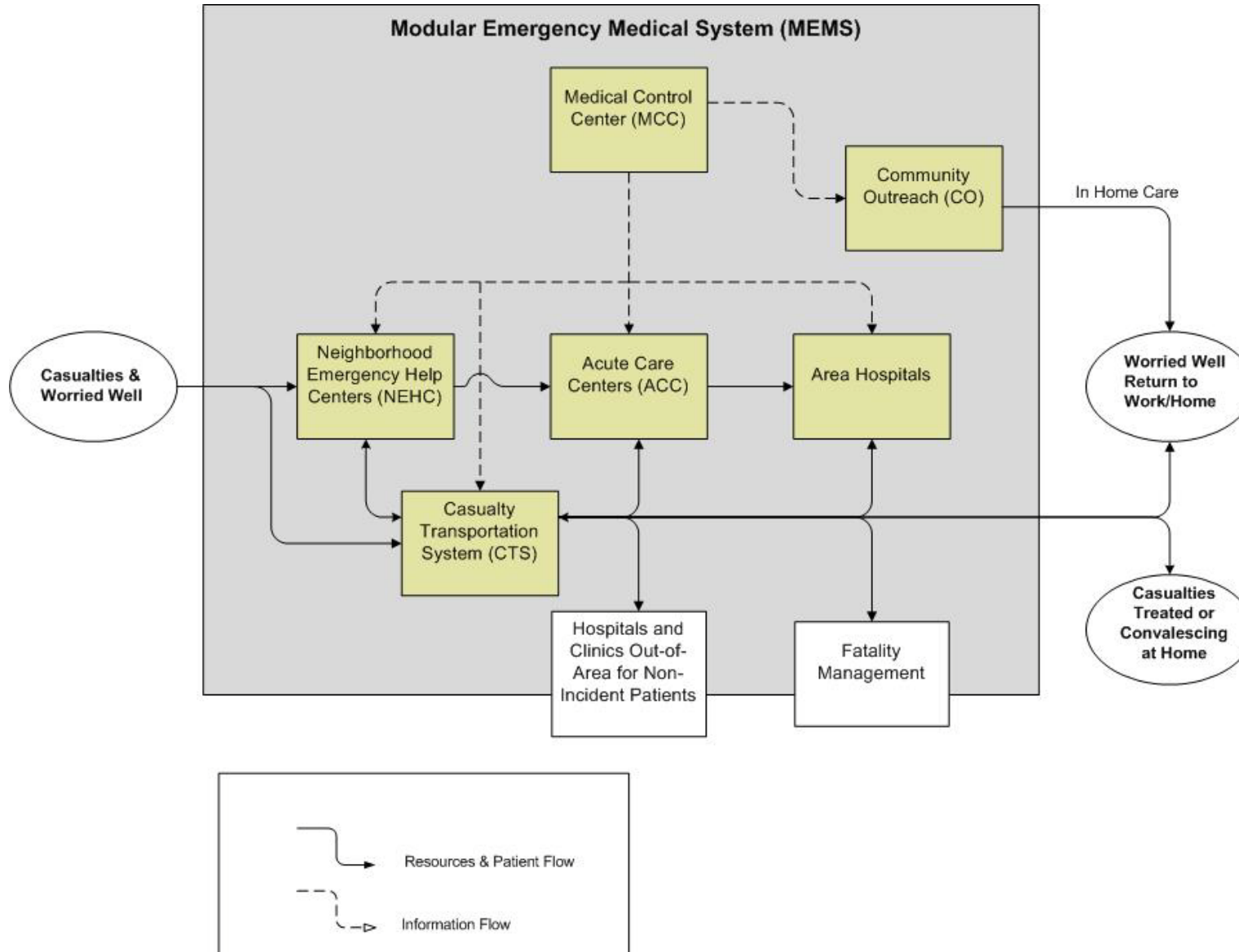
- Maximize utilization of community based EMS
- Create realistic expectations for the roles of healthcare facilities
- Identify most Essential Support Functions (ESFs)
- Provide near real-time information regarding resources and availability to accurately allocate resources
- Include essential partners in planning, training, and response
- Ensure document compliance with
  - National Incident Management System (NIMS)
  - National Response Framework (NRF)
- Form a process to allow for an altered standard of care
- Involve key community stake holders



# MEMS as RRS Component



# MEMS Components and Patient Flow



## Notes:

- All MEMS components have established communication and coordination links.
- The MCC oversees all operations.
- The CTS transports casualties between all MEMS components.
- If the NEHC operates as a POD or VC, then the population at risk is processed through and returns to work/home.
- Special Needs Shelters Will receive patients from ACC based on their medical needs.
- Mass Care Shelters will house non-medical evacuees.

## Assumptions:

- Although the primary point of entry into MEMS is the NEHC, patients will self present to hospitals, ACCs and any other available medical resource

**Notes:** The NEHC can provide mass vaccination & mass prophylaxis to prevent casualties and triage and treatment of casualties and worried well. The MCC oversees all MEMS operations. The CTS transports casualties between MEMS components. Area Hospitals need to provide gross and secondary decon for people that self refer.

# Resource Requirements & Allocation Model (RRAM1) Description

- EXCEL based tool developed to analyze response to biological terrorists attacks
- Expanded and adapted to influenza pandemic response
- Used to analyze and validate influenza pandemic response strategy
- Projects casualties and resource requirements for each day of the outbreak and compares to available resources



# Why RRAM?

- Existing tools are not designed for community users and do not support the real scenarios, locations, or enhanced capabilities required by MEMS
- Avoid proprietary models: cost, ownership
- Preempt problems of manual integration with other models and data sources—integrated with CDC FluSurge
- Poorly validated and coordinated methods that inform policy-making on emerging infectious diseases may dangerously mislead critical response implementation

# Using RRAM1

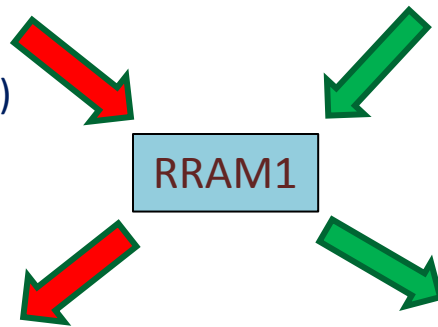
## Step 1.

### Input Scenario Variables

- Population of region
- Available hospital beds
- Maximum/minimum number ACCs and NEHCs
- Gross infection rate (25%)
- Duration of pandemic (8 weeks)

### Immediate Results

- Casualty profile by day (presenting, worried well, acute requiring hospital care, critical requiring ventilation, community outreach patients)
- Resources required by day (physicians, nurses, nurse assistants, medical clerks, police, logisticians, volunteers, cots, protective equip., IV kits)
- Assignment of resources to MEMS modules



## Step 2.

### Collect and input regional resources

- Query sources of human, equipment and supply resources
- Estimate total non-affiliated volunteers (18 to 65 year old regional population)
- Assign an availability factor (10%)
- Input total resources and availability factors into model

### Obtain Resource Analysis

- Compare required versus available resources throughout event
- Identify resource gaps and timing
- Consider and test ways to reduce gaps (assignment of personnel, availability factors, staffing plans)

# Tabletop Exercises

- Exercise Objectives:
  - *Resource Integration*: Exercise relationships between state and local agencies for pandemic influenza response
  - *Resource Coordination*: Examine relationships in command and control and Emergency Operations Center (EOC) coordination
  - *Mass Prophylaxis*: Review plans, policies and procedures for mass prophylaxis dispensing operations
  - *Media Control*: Assess plans for use of media
  - *Public Information*: Review plans for distribution of information to the public

# A Feasible Response Strategy

## Overall:

- Base response strategy on Modular Emergency Medical System (MEMS), appropriate Elements of the Regional Response System (RRS), RRAM, and TTXs

## Specific:

- Focus on Community Outreach to reduce the spread of disease and provide in-home care of victims
- Use Neighborhood Emergency Help Centers (NEHCs) to train volunteers and provide information, protective equipment, and anti-viral medications
- Use Acute Care Centers (ACCs) when hospitals are overwhelmed
- Activate the Medical Control Center (MCC)
- Provide casualty transportation, logistical support and security
- 24-hour regional call in center (located at NEHC)
  - Provides phone triage and instruction to in-home and sector patrol volunteers
  - Directs limited number of nurses to triage victims in their homes
  - Directs the transportation of victims from home to hospital or ACC
  - Maintains overall picture of regional health-care situation

**Leverage medical resources, mobilize citizenry, provide adequate care**

# Contact Information

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