Introduction to RMOCCs

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Disclosures

- AIMedica (consultant)

From the Midwest

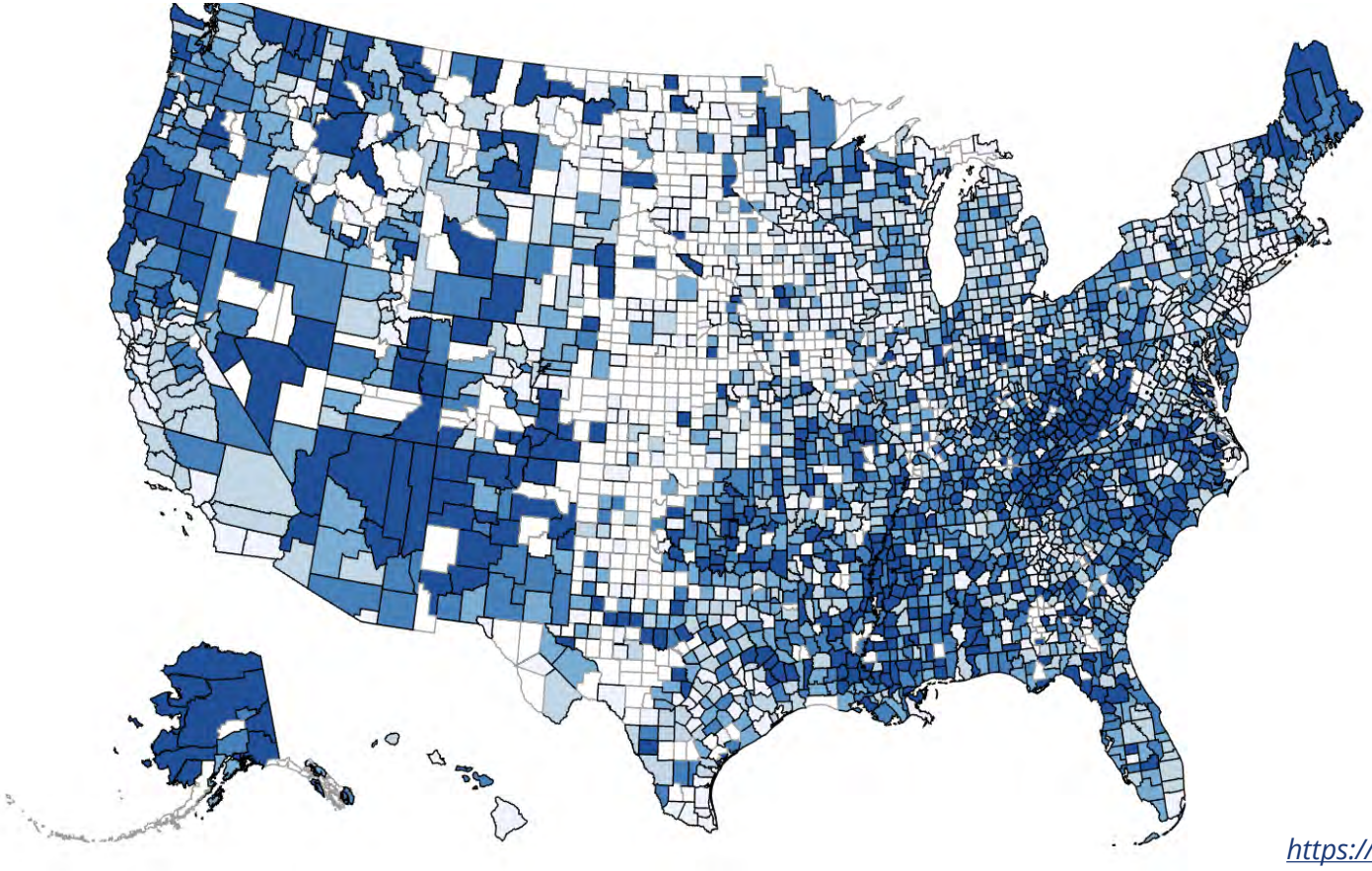
Wheaton, Illinois

To Silicon Valley

Regional Medical Operations Coordinating Center (RMOCC)

Objectives

- Why RMOCCs?
- What is an RMOCC?
- What is the vision?



https://wisqars.cdc.gov/ *accessed 7.22.25*

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Whether you survive may depend on <u>where</u> you are injured

Eastmen B, Where the Dart Lands. JACS. 2010

Wherever the Dart Lands: Toward the Ideal Trauma System

A Brent Eastman, MD, FACS

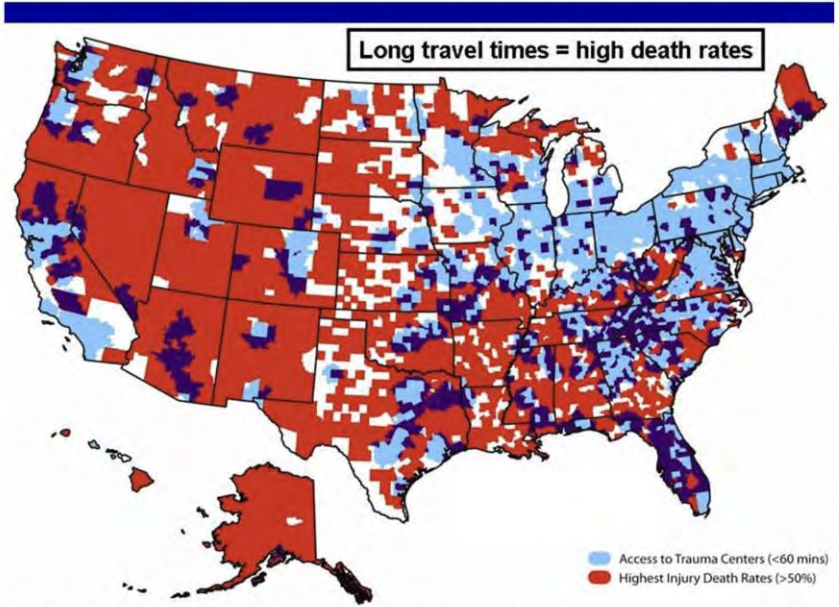


Figure 11. Access to trauma centers. (Courtesy of Charles Branas, PhD, Cartographic Modeling Laboratory, University of Pennsylvania, 2009).

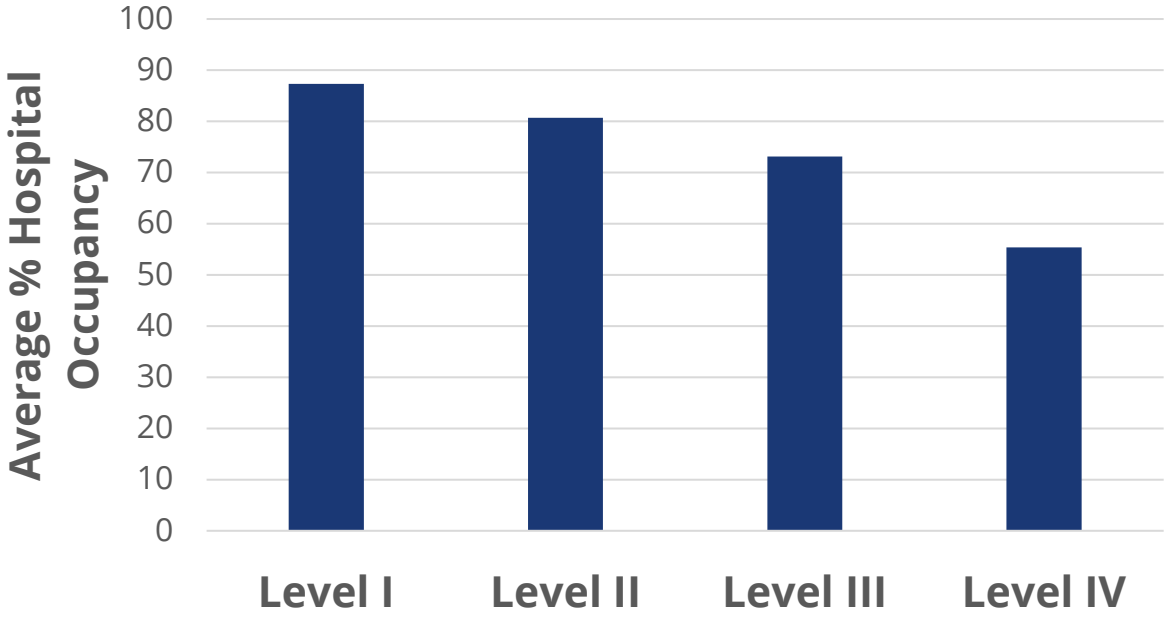
The U.S. does not have a trauma system—

It has islands of excellence in a sea of chaos

-Donald Trunkey and others

Challenges with Optimizing Resource Matching

U.S. Trauma Centers are At or Above Capacity



Unpublished data

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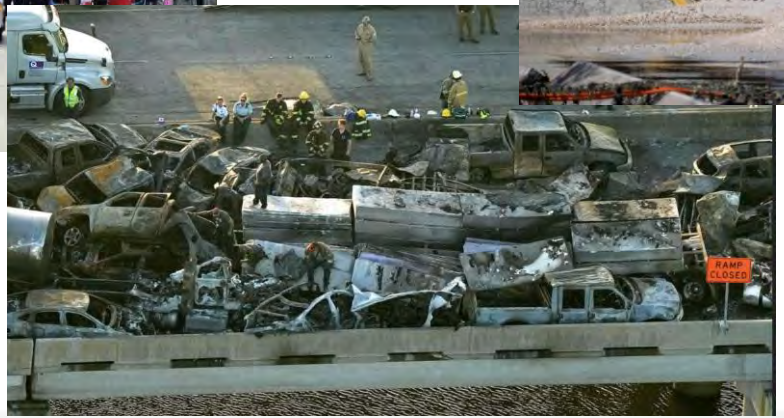
Challenges with Optimizing Resource Matching

Disaster coordination

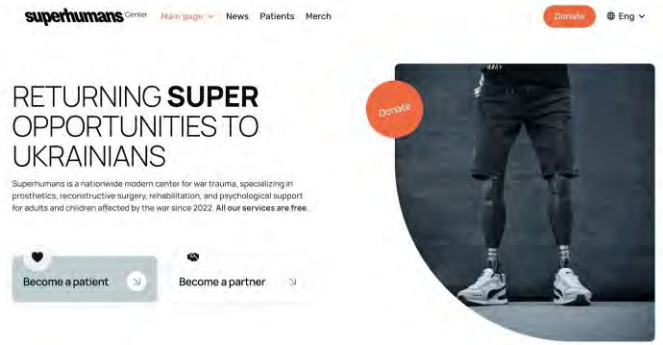
Boston bombing 2013



Super Fog 2023

Hurricane Ida 2021

War



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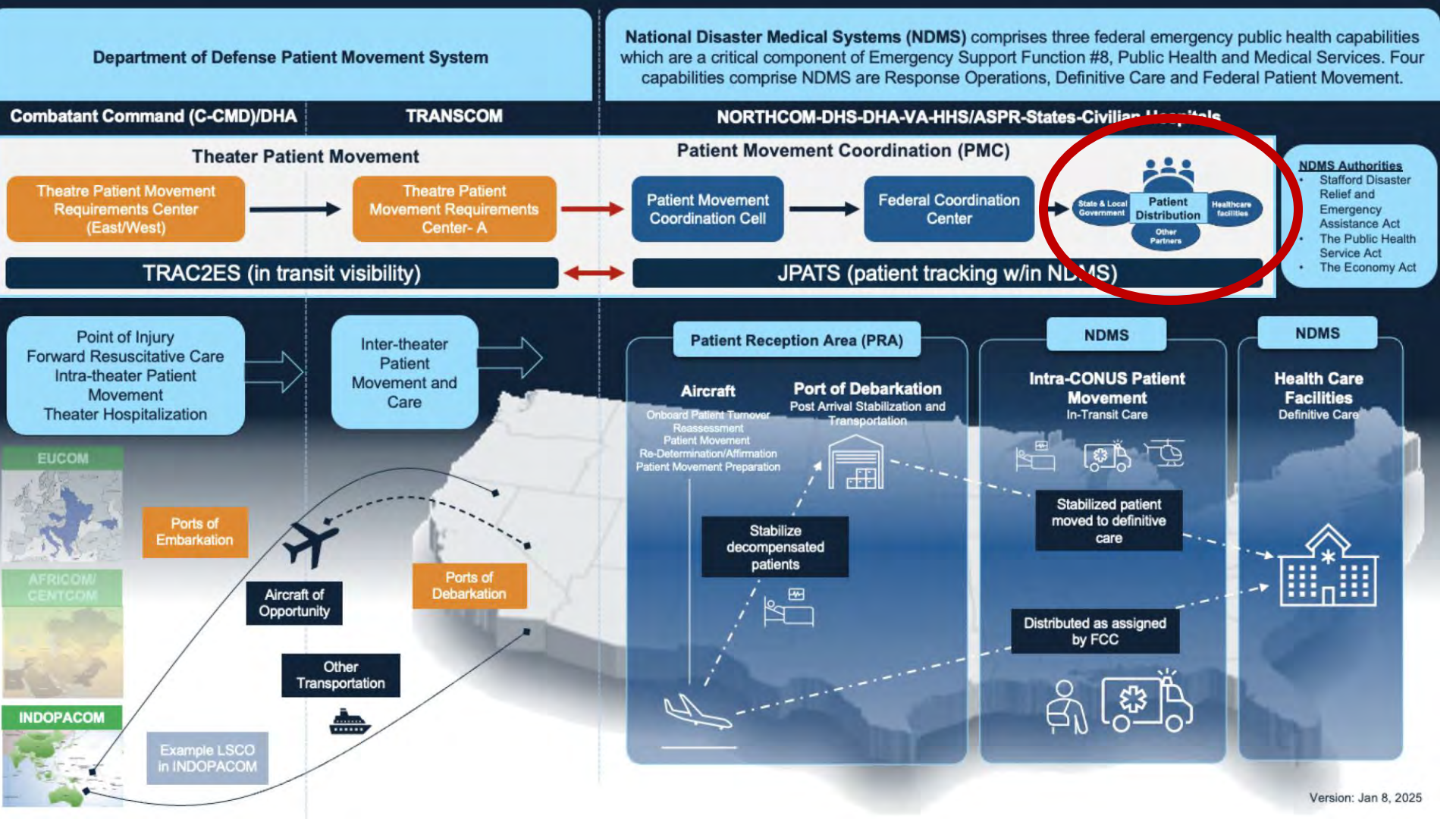
Large Scale Combat Operations

NATIONAL DISASTER MEDICAL SYSTEM PILOT PROGRAM

The National Center leads a Congressionally directed effort to assess and strengthen the National Disaster Medical System (NDMS) to meet the health and medical needs of U.S. casualties returning home from an overseas large-scale combat operation (LSCO). The National Center's extensive interagency partnerships enable it to address the complex issues related to synchronizing healthcare delivery between the civilian and military communities. The effort is focused on enhancing interoperability and expanding capability and capacity within the NDMS, including an initial focus on five Pilot sites strategically located throughout the country (Washington, D.C.; San Antonio, TX; Denver, CO; Omaha, NE; and Sacramento, CA). The National Center has partnered with organizations across the federal interagency as well as at the state and local levels to design, implement, and assess dozens of discrete projects across the Pilot sites.

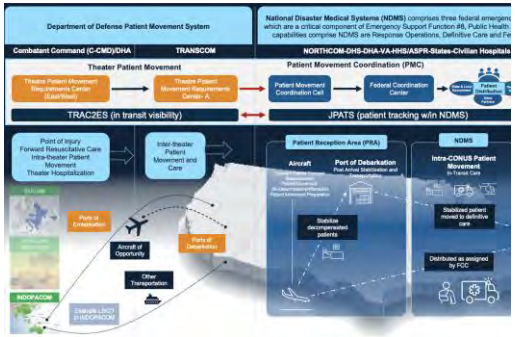
Key aspect—*Globally Integrated Military Civilian Partnership*

https://ncdmph.usuhs.edu/ndms-pilot


Department of Defense Patient Movement System
National Disaster Medical Systems (NDMS) comprises three federal emergency public health capabilities which are a critical component of Emergency Support Function #8, Public Health and Medical Services. Four capabilities comprise NDMS are Response Operations, Definitive Care and Federal Patient Movement.
Combatant Command (C-CMD)/DHA
TRANSCOM
NORTHCOM-DHS-DHA-VA-HHS/ASPR-States-Civilian Hospitals
Theater Patient Movement
Theatre Patient Movement Requirements Center (East/West)
Theatre Patient Movement Requirements Center- A
Patient Movement Coordination (PMC)
Patient Movement Coordination Cell
Federal Coordination Center
State & Local Government
Patient Distribution
Healthcare facilities
Other Partners
NDMS Authorities
Stafford Disaster Relief and Emergency Assistance Act
The Public Health Service Act
The Economy Act
TRAC2ES (in transit visibility)
JPATS (patient tracking w/in NDMS)
Point of Injury
Forward Resuscitative Care
Intra-theater Patient Movement
Theater Hospitalization
Inter-theater Patient Movement and Care
Patient Reception Area (PRA)
Aircraft
Onboard Patient Turnover
Reassessment
Patient Movement
Re-Determination/Affirmation
Patient Movement Preparation
Port of Debarkation
Post Arrival Stabilization and Transportation
NDMS
Intra-CONUS Patient Movement
In-Transit Care
NDMS
Health Care Facilities
Definitive Care
EUCOM
AFRICOM/ CENTCOM
INDOPACOM
Ports of Embarkation
Aircraft of Opportunity
Ports of Debarkation
Other Transportation
Example LSCO in INDOPACOM
Stabilize decompensated patients
Stabilized patient moved to definitive care
Distributed as assigned by FCC
Version: Jan 8, 2025

The Civilian Reality

From pilot to full nationwide capability



- If balloon went up today?
- What we need on the civilian side

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What is an RMOCC?

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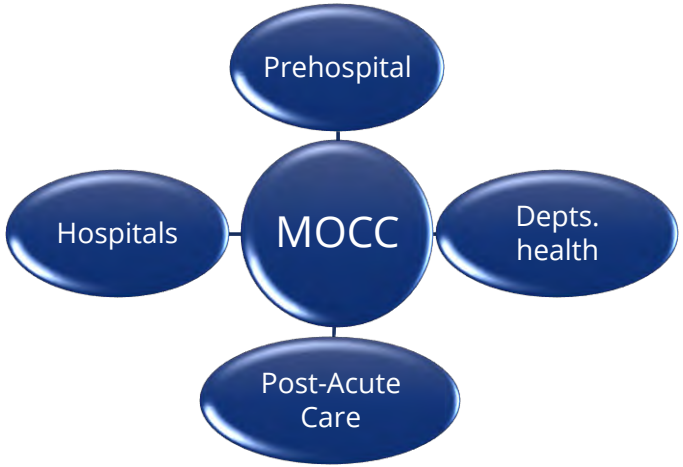
The RMOCC Concept

A construct for regional patient distribution to avoid or mitigate crisis conditions by deploying health care resources across a state, territory, or region

- Regional healthcare capacity monitoring
- Regional hub for the management of capacity
    - Single point of contact
    - Does NOT replace usual mechanisms
- EMS Disaster Coordination and Response
- Workforce / Resource Sharing
- Informs EOC of Status Changes and Needs
- Facilitates inter-hospital consultation



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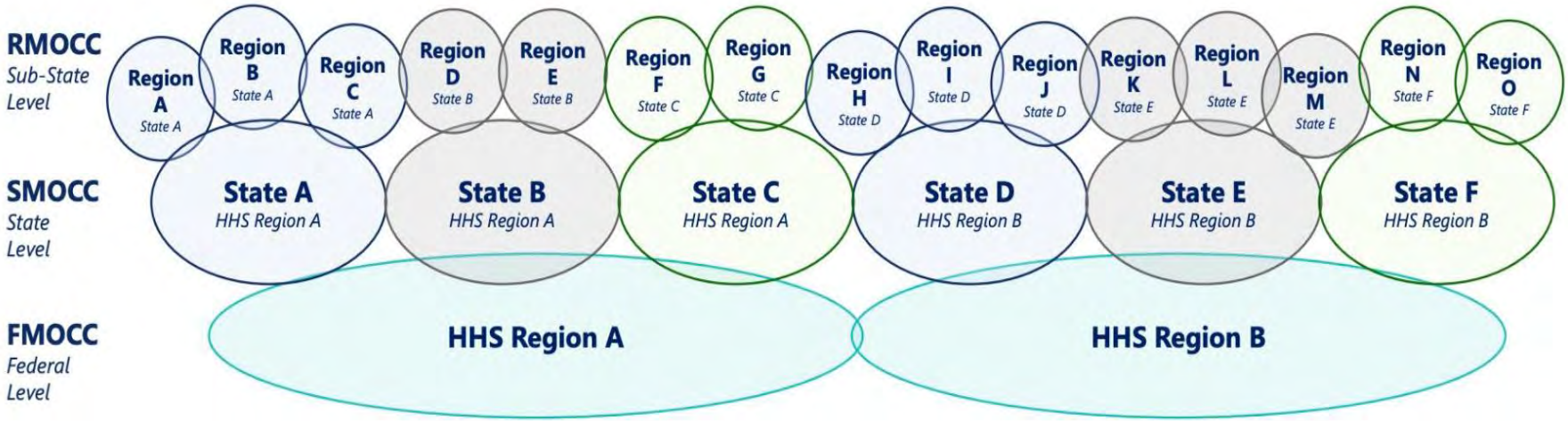
The Integrated MOCC Concept



https://asprtracie.hhs.gov/MOCC accessed 7.22.25

Daily Operations and Disasters

- Standing up emergency operations is challenging
    - Weak or non-existent operational relationships
    - Communication channels not established
    - Poorly-socialized protocols

A coordinating center running day-to-day can easily scale to manage disasters

Las Vegas Shooting

COVID and MOCCs

- Survey of all 50 states with an 88% response rate
- State-level coordinating centers (SCCs or SMOCCs) in **19** states (43% respondents)
- In follow-up **5 of 12** surveyed states had continued to operate their SMOCCs

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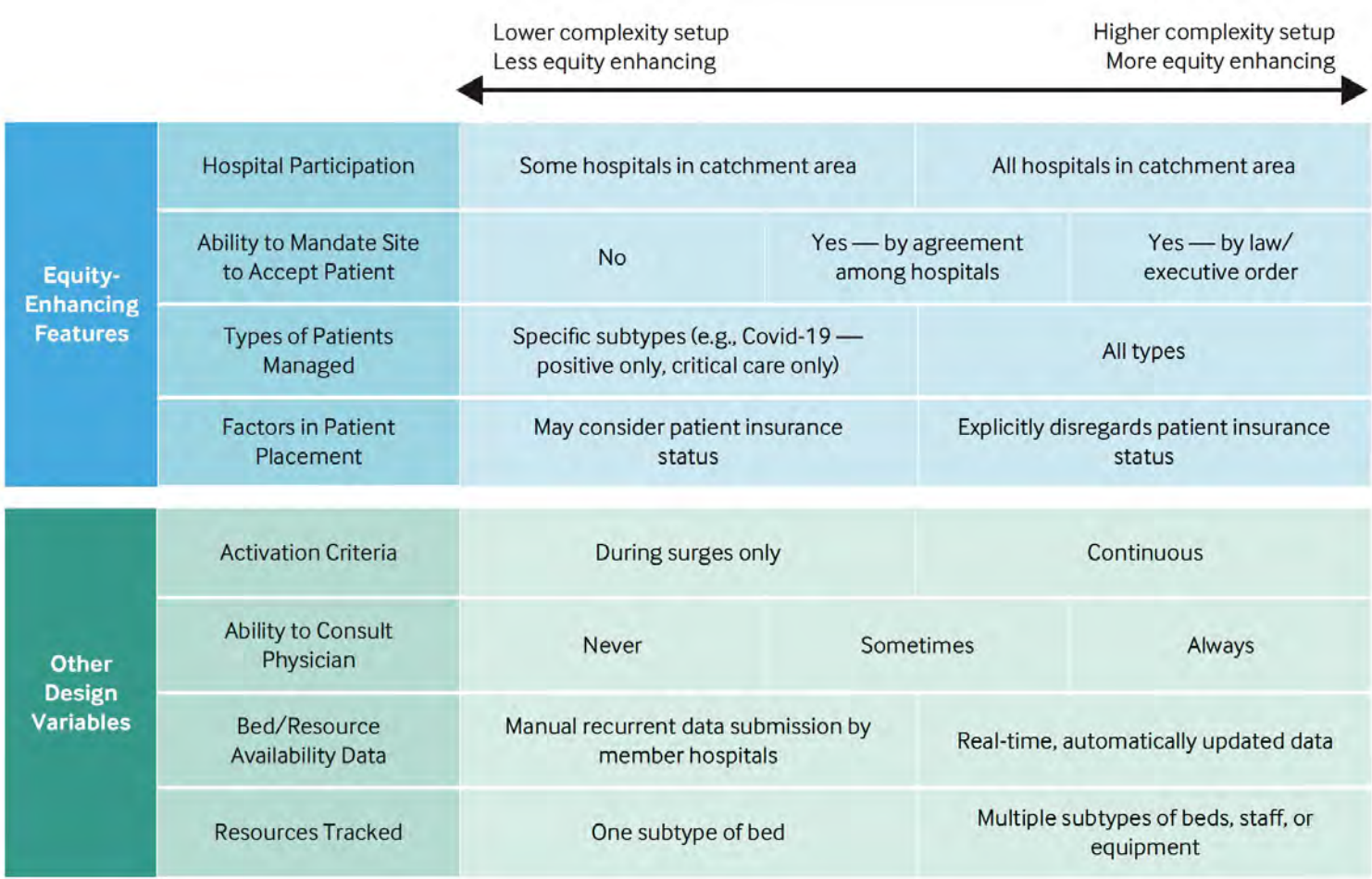
MOCC vs. Private Transfer Centers

	SCCC	Private Transfer Center
Definition	1. Centrally aggregates real-time or regularly updated data regarding hospital bed capacity (and potentially other resources) from multiple independent hospitals and health systems in a region and 2. Manages or coordinates patient placement and interhospital transfers to load balance patients among these independent facilities	Privately operated centers that do not meet the definition of an SCCC
Primary Objective	Load balancing during surges and ensuring equitable access to specialty care within a region, regardless of hospital affiliation	Day-to-day transfer management for the benefit of the operating entity
Profit Motive	No	Common
Operating Entity	Any, including state department of health, state hospital association, or private hospital/health system	Private hospital/health system
Hospitals Involved in the Center's Data Sharing and Transfer Coordination	Broadly inclusive (i.e., most or all hospitals in a state or region) across multiple independent health systems	Hospitals owned by a single health system or a limited number of unaffiliated hospitals in a region with established transfer arrangements
Patient Insurance Status	Usually not considered	Usually considered
Oversight by a Nonhospital Entity (e.g., State Department of Health)	Common	Uncommon
Examples	• Arizona Surge Line • Maryland Critical Care Coordination Center • Washington Medical Coordination Center	Various privately operated transfer centers or capacity command centers

Franklin BJ, State Capacity Coordination Centers to Facilitate Access to Acute Care. NEJM Catalyst. 2024

Variability in Design



Franklin BJ, State Capacity Coordination Centers to Facilitate Access to Acute Care. NEJM Catalyst. 2024

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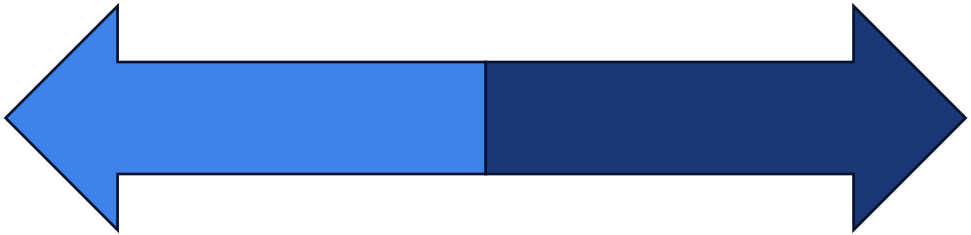
Design Differences

Range in complexity

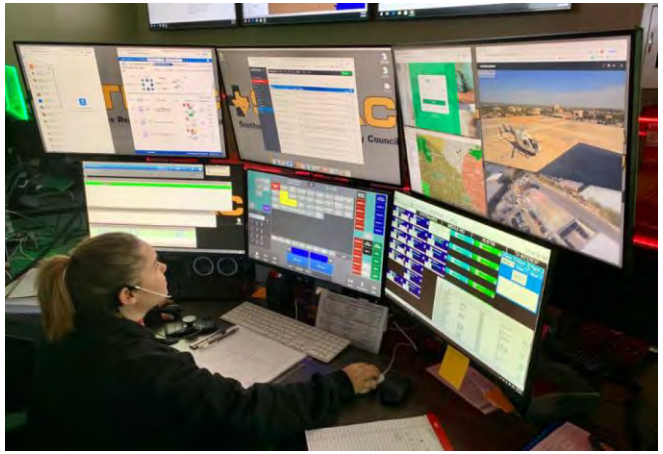
One RN,
One Phone



STRAC

South Texas Regional Advisory Council (STRAC)

- Day-to-day Structured Collaboration
  - Inclusive of EMS and all hospitals
  - Performance Improvement
  - Education
- Disaster coordination
  - Exercises
  - Decontamination
  - EMTF
- Informatics and Research
  - Field Apps
  - Data and Research



Alabama Trauma Communications Center

MedCom function

- Staffed 24/7/365
- Guides field paramedics
- Direct linkage to hospital capacity
- Connect field provider to hospital
- Continuous situational awareness

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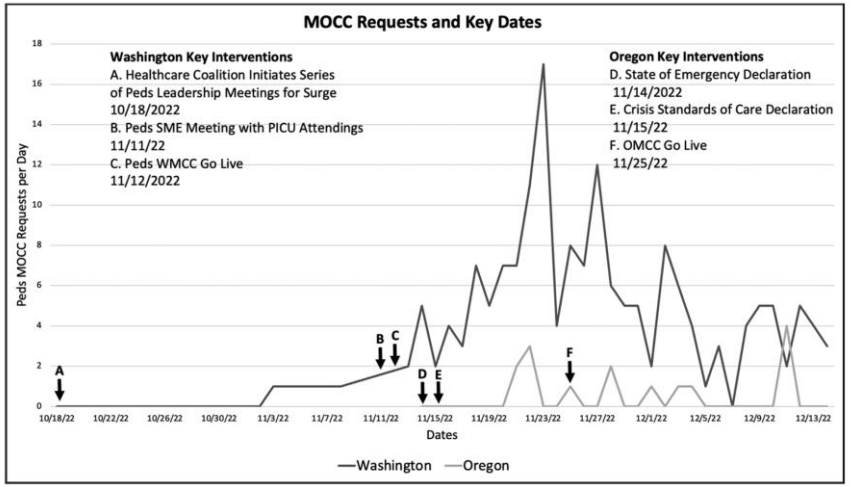
Washington Medical Coordination Center

Flexes when needed
Example 2022 triple-demic

- Between November and December 2022 WMCC managed:
  - 171 pediatric transfer requests
  - 58% were critically ill
  - 17% from critical access hospitals
  - 100% acceptance rate
  - Mean time from initial call to accepted facility: 3 hours



Mitchell SH, Using Two Statewide Medical Operation Coordination Centers to Load Balance Pediatric Hospitals During a Severe Respiratory Surge in the United States . Pediatric CCM. 2023

Do RMOCCs work?

Annals of Internal Medicine

ORIGINAL RESEARCH

Association Between Caseload Surge and COVID-19 Survival in 558 U.S. Hospitals, March to August 2020

Sameer S. Kadri, MD, MS; Junfeng Sun, PhD; Alexander Lawandi, MDCM, MSc; Jeffrey R. Strich, MD, MHS; Lindsay M. Busch, MD; Michael Keller, MD; Ahmed Babiker, MBBS; Christina Yek, MD; Seidu Malik, PhD; Janell Krack, PharmD; John P. Dekker, MD, PhD; Alicen B. Spaulding, PhD, MPH; Emily Ricotta, PhD, ScM; John H. Powers III, MD; Chanu Rhee, MD, MPH; Michael Klompas, MD, MPH; Janhavi Athale, MD; Tegan K. Boehmer, PhD; Adi V. Gundlapalli, MD, PhD; William Bentley, MS; S. Deblina Datta, MD; Robert L. Danner, MD; Cumhur Y. Demirkale, PhD*; and Sarah Warner, MPH*

25% of deaths during COVID potentially attributable to hospitals overwhelmed by case load

States with SMOCCs (12)

Pre-MOCC vs. Post-MOCC transfers

Pre-MOCC

- Negative association between surge rates and transfers
- Thought to be due to inefficiencies introduced due to surge

With MOCC in place

- Increased transfers
- Relative rate 4.78

Ritchert M, Impact of State Transfer Coordination Centers on Interhospital Transfer Rates During Pandemic Surgers . CCM. 2025

Costs

Basic Function

- 24/7 Coverage
- Personnel (2-6; depending on model)
- Equipment and services

$1-2M

Creating a Comprehensive Network

The National Trauma and Emergency Preparedness System

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ACS Committee on Trauma
American College of Surgeons

National Trauma and Emergency Preparedness System (NTEPS)

V. 2.0

Vision

The vision of the NTEPS is to have timely and high-quality trauma care with equitable access for everyone injured across the entire spectrum of care, from prevention to long-term outcomes and from individual injuries to mass population events.

Mission

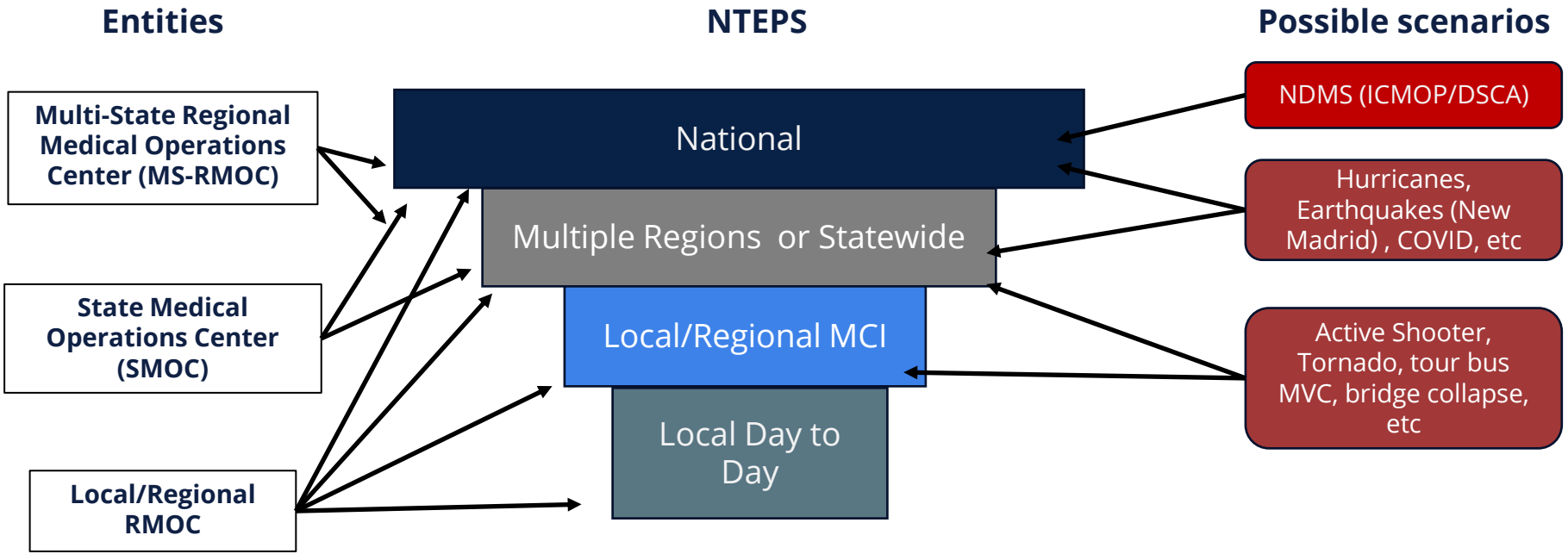
The NTEPS will oversee the coordination of resource and patient/casualty distribution in daily and mass population events by supporting an interconnected RMOCC system. NTEPS will develop system standards, benchmark regional system performance, synthesize and disseminate knowledge, and promote uniform community outreach for prevention and resiliency.

https://www.facs.org/quality-programs/trauma/systems/national-trauma-emergency-preparedness-system/

Advantages

- Addresses daily needs, scales up for disaster or war
- Is a regional approach
    - Adapts to regional needs
    - Does not force top-down unfunded mandates

NTEPS Facilitates Miliary-Civilian Coordination



Slide courtesy of Eric Epley, CEO STRAC

Developing RMOCC Standards

Standards provide a clear framework for delivering ***high-quality***, ***consistent care*** across diverse settings.

They serve as a foundation for evaluation, improvement, and accountability, ensuring patients receive safe, effective, and coordinated treatment.

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Principles Behind RMOCCs

Guiding Standard Development

- **Structured Cooperation**
  Cultivate inter-organizational relationships before an event to ensure coordination among entities that typically compete in daily operations.
- **Maximal Inclusiveness**
  Engage *all* relevant stakeholders — trauma and non-trauma hospitals, EMS, public health, and emergency management — in planning and response.
- **Timely Scalability**
  Enable rapid activation and expansion from daily coordination to full-scale disaster response using pre-established systems and processes.
- **Decisions by Consensus**
  Use shared, actionable information and a common operational language to promote agile, unified decision-making.
- **Bias for Action**
  Prioritize proactive engagement over passive monitoring — anticipating needs and acting early during uncertain conditions.

Basic Structural Components to be Addressed by RMOCC Standards

Category	Key Needs
Authority	Legal/contractual authority to access data, compel transfers
Trust	Transparent governance, equitable policies
Infrastructure	Data platform, comms systems, call center setup
Staffing	Medical director, transfer coordinators, specialty consultants
Funding	Sustainable model
Integration	Ties with EMS, public health, trauma, and emergency management, others
Capabilities	Attributes outlined by ASPR (see next slide)

Basic Attributes/Capabilities to be Addressed by RMOCC Standards

Attribute	Description
Centralized 24/7 Operations	Centralized, always-on coordination hub
Access to Real-Time Data	Bed capacity, strain indicators, specialty services, EMS availability
Prehospital Coordination	The ability to communicate and coordinate pre-hospital care with EMS
Transfer Coordination	Clinical prioritization and referral management
Legal Authority	Agreements that provide the authorization to compel acceptance of a transfer
Cross-Jurisdictional Function	Formal ability to work across counties/states
Compliance	Policies in compliance with EMTALA, disability rights, and other laws
EMS & Emergency Management Links	Integration with dispatch, EOCs, and regional incident command
Performance Improvement	Continuous monitoring and adaptation

Will include Tiering

Rationale

1. **Scalability**
   Allows smaller regions or states to establish basic coordination capacity
2. **Funding Alignment**
   Enables resource allocation (e.g., HPP, ASPR, state funding) based on tier-specific goals and metrics.
3. **Buy-In**

   Enables different points of entry based on local needs

What Standards Will NOT do

1. Will not mandate uniform staffing models
2. Will not assume authority without local agreement
3. Will not be static or one size fits all
4. Will emphasize function over bureaucracy
5. Will focus on BOTH day-to-day and Crisis or Disaster Use
6. Will not existing functioning healthcare relationships

Creating a Comprehensive Network

The National Academies of Sciences, Engineering, and Medicine Action Collaborative

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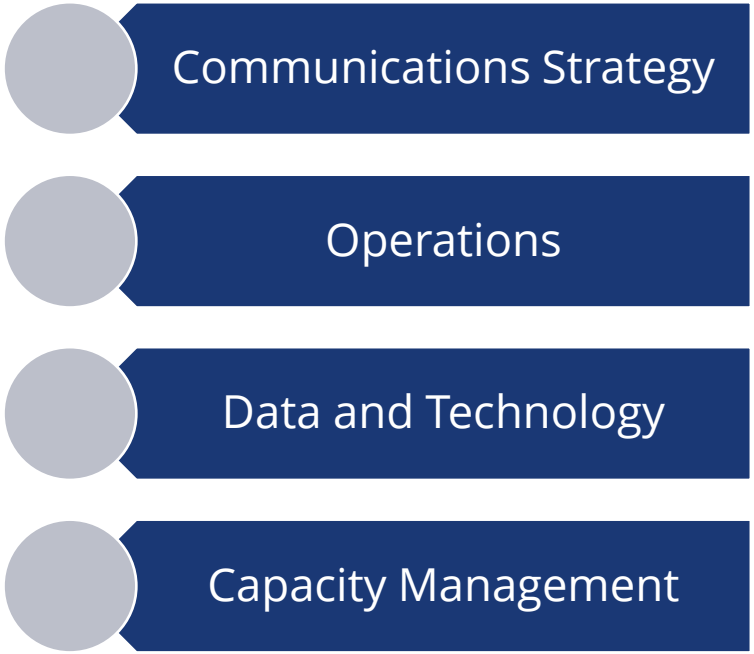
NASEM Action Collaborative

What are action collaboratives?

- Smaller, time-limited working groups
- Participant-driven,
- Open to non-Forum members.
- Purpose is to co-develop solutions
- Support externally funded workshops or studies
- Serve as a forum to build knowledge

NASEM RMOCC Action Collaborative



Drive consensus and awareness

Barriers—The Top 3

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TRUST

Solutions

The BIGGEST problem

- EVERY MOCC cites this issue, but….
- When benefits are realized, participation is enthusiastic
- Need assurances that business interests and missions are safe (maybe even safer) within a MOCC environment


INTEROPERABILITY

Solutions Currently in Use

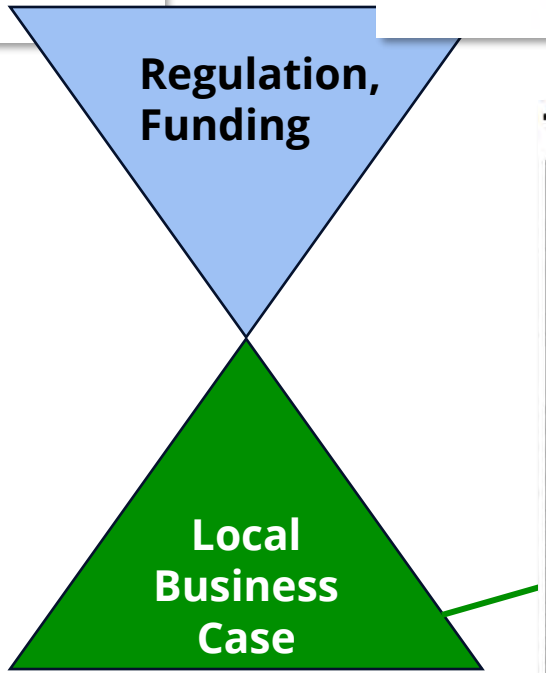

DF 54993053B
F6
ONE HUNDRED DOLLARS
EL 12638488 A
L12
50
CG 87767312B
G7
20
AB 75456983C
B2
100

Proposed CMS Rules Include Medicare Pay Increase, ACEP-Suggested Telehealth Fixes, Boarding Measure

UPDATE: CMS Proposes ACEP-Supported Quality Measure on Timeliness, Access

The Centers for Medicare & Medicaid Services (CMS) is proposing to adopt a new quality measure developed and supported by ACEP members. The measure is designed to improve access to and timeliness of emergency care.

Will need top-down and bottom-up financial approaches



STRAC Southeast Texas Regional Advisory Council

Acceptance & Capabilities of Psychiatric Inpatient Facilities v.07.2025

Acceptance & Capabilities of Psychiatric Inpatient Facilities	Baptist Health System	Cedar Hills	Clarity Child Guidance Center	Crisis Care Center	Laurel Ridge	Methodist | Specialty and Transplant	San Antonio Behavioral Health	University Health
Age Range:	≥15	18-55	3-17	≥18	All Ages	≥18	<12 Female Only 12-64 Both Genders	≥18
Genders (Include transgender)	Female, Male, Transgender	Female, Male, Transgender	Female, Male, Transgender	Female, Male, Transgender	Female, Male, Transgender	Female, Male, Transgender	Female, Male, Transgender	Female, Male, Transgender
Pregnant Patients Accepted?	NO	YES	YES	NO	NO	<20wks can go to Psych Unit @ MSTH case by case >20wks has to go to OB Medical Floor @ Main Methodist	Case by Case	YES
Covid Negative (if tested)?	YES	YES	YES	YES	YES	YES	YES	YES
On Site Labs for Walkins?	All	UDS Pregnancy COVID Accucheck Rapid Strep Rapid Flu Breathalyzer	UDS Pregnancy COVID Accucheck Rapid Strep Rapid Flu	UDS Pregnancy Accucheck Breathalyzer	UDS COVID Accucheck Rapid Strep Rapid Flu Breathalyzer	All	UDS Pregnancy COVID Accucheck Rapid Strep Rapid Flu Breathalyzer	All
EKG Available?	YES	YES	YES	YES	YES	YES	YES with QTc <450ms	YES
Imaging Available? Basic Portable Xray w/in 24 Hrs	YES	YES	NO	NO	YES	YES	YES	YES
Buprenorphine accepted?	YES	YES	NO	YES	YES	YES	YES	YES
Methadone accepted?	YES	YES	NO	YES	Case by Case	YES	NO	YES
Insulin Pumps accepted?	YES	Case by Case	Case by Case	NO	Case by Case	YES	Case by Case	Case by Case
Wound Care available?	YES	Case by Case	Case by Case	Case by Case	Case by Case	Case by Case	Case by Case	YES
PT/OT available?	YES	NO	NO	NO	NO	YES	NO	YES
CPAP/BiPAP allowed?	Case by Case	Case by Case	Case by Case	NO	Case by Case	Case by Case	Case by Case	YES
Assistance with ADL(s) provided?	Case by Case	NO	NO	NO	NO	NO	NO	NO
IV available?	NO	NO	NO	NO	NO	NO	NO	NO
Dialysis available?	NO	NO	NO	NO	NO	YES	NO	YES
GTube allowed?	NO	NO	Case by Case	NO	NO	NO	NO	Case by Case
Foleys allowed?	NO	NO	NO	NO	NO	NO	NO	Case by Case
Trach allowed?	NO	NO	NO	NO	NO	NO	NO	NO
Colostomy allowed?	Case by Case	NO	NO	NO	NO	Case by Case	NO	YES
Wheelchairs allowed?	YES	YES	YES	NO	YES	YES	YES	YES
*Walkers allowed?	Case by Case	Case by Case	Case by Case	NO	Case by Case	YES	Case by Case	NO
*Canes allowed?	NO	NO	NO	NO	NO	NO	NO	NO
Detox accepted?	Case by Case	YES	Case by Case	YES	YES	Case by Case	YES	YES
Orthopedic Devices allowed?	Case by Case	Case by Case	Case by Case	NO	Case by Case	Case by Case	Case by Case	Case by Case
Hearing Impaired allowed?	YES	YES	YES	NO	YES	YES	YES	YES
Blind allowed?	YES	YES	YES	NO	YES	YES	YES	YES

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The Wrap Up

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NTEPS and RMOCCs

A national priority

- RMOCCs solve multilevel problems
    - Day-to-day challenges
    - Mass casualty events
    - LSCOs
- RMOCCs work
- RMOCCs require dedicated efforts
    - Grass-roots
    - ”Top-down” alignment and funding

Questions?

kristans@stanford.edu