



CARE DURING CRISIS

LET'S INCLUDE THE CHILDREN

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Non Disclosure

- The presenter has no financial relationships to disclose.
- The views presented do not represent the Department of Defense of the the University of Maryland
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Agenda

- Challenges with optimizing healthcare delivery during crises-Problem statement
- Healthcare delivery 101
- Describe the vision
- “Linking” solutions
- Potential future



Objectives

- Understanding pediatric preparedness tenants, that if employed, actually strengthen daily healthcare delivery
- Discussing healthcare executives perspectives on preparedness
- Explain the linkage between daily healthcare delivery policy, priorities and care with healthcare delivery during disasters
- The importance of understanding care in crisis, immediate bed availability, and the risks to patients and facilities of not being prepared

















MAX 1999 10.20

TIME

**THE MONSTERS
NEXT DOOR**

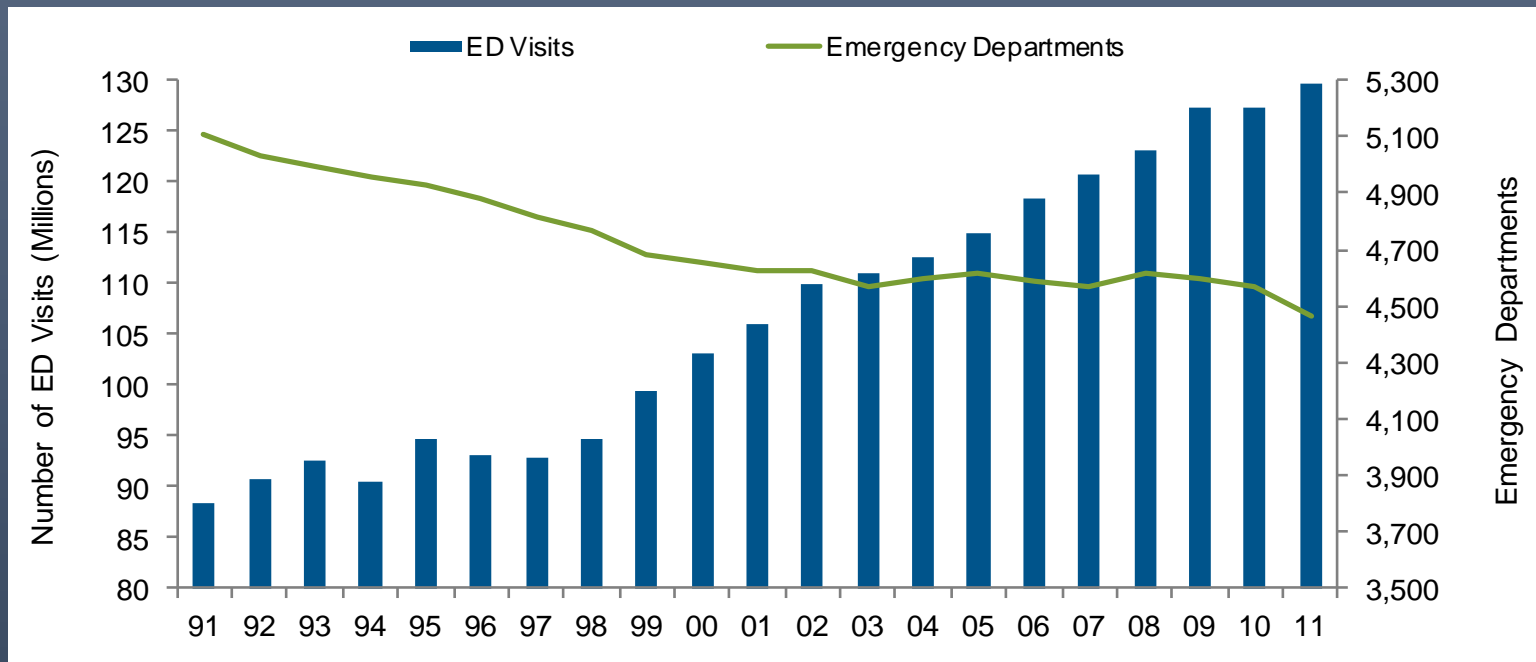
**WHAT MADE THEM
DO IT?**

AMC
مركز حلب للإعلامي





Emergency Department Visits and Emergency Departments⁽¹⁾ in Community Hospitals, 1991 – 2011



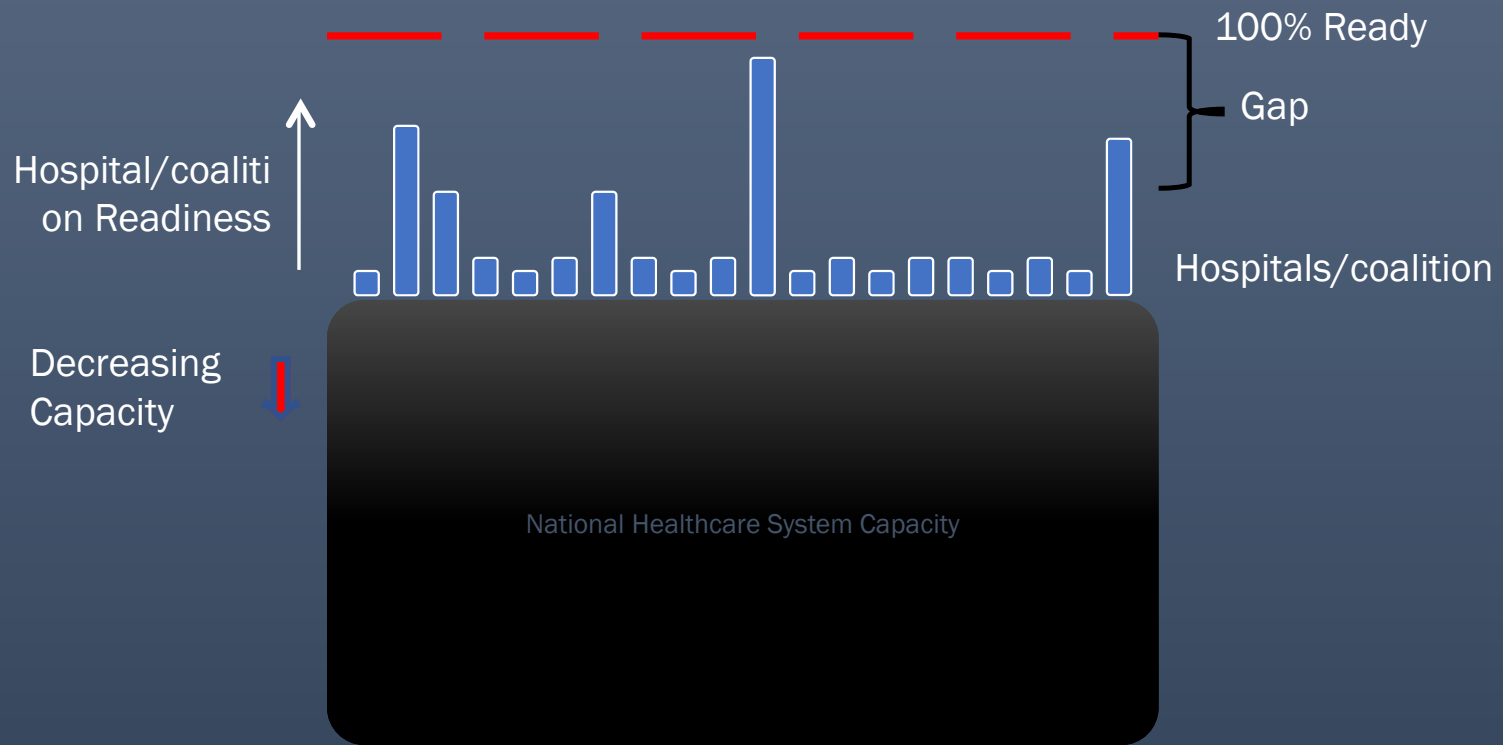
Source: Avalere Health analysis of American Hospital Association Annual Survey data, 2011, for community hospitals.

⁽¹⁾ Defined as hospitals reporting ED visits in the AHA Annual Survey.

ER visits still rising despite ACA

- JAN 2015 Modern Healthcare:
 - *“Patient emergency room visits rose sharply at hospitals with the highest ER use in 2013, the last year before the Affordable Care Act's insurance expansion kicked in... and many of the hospitals with the busiest ERs in 2013 are reporting even higher volumes in 2014 despite the nation's declining uninsured rate.”*
- The article goes on to describe that the nation's 24 busiest emergency rooms reported 18.7% more visits in 2013 over 2012
- It appears this trend will continue

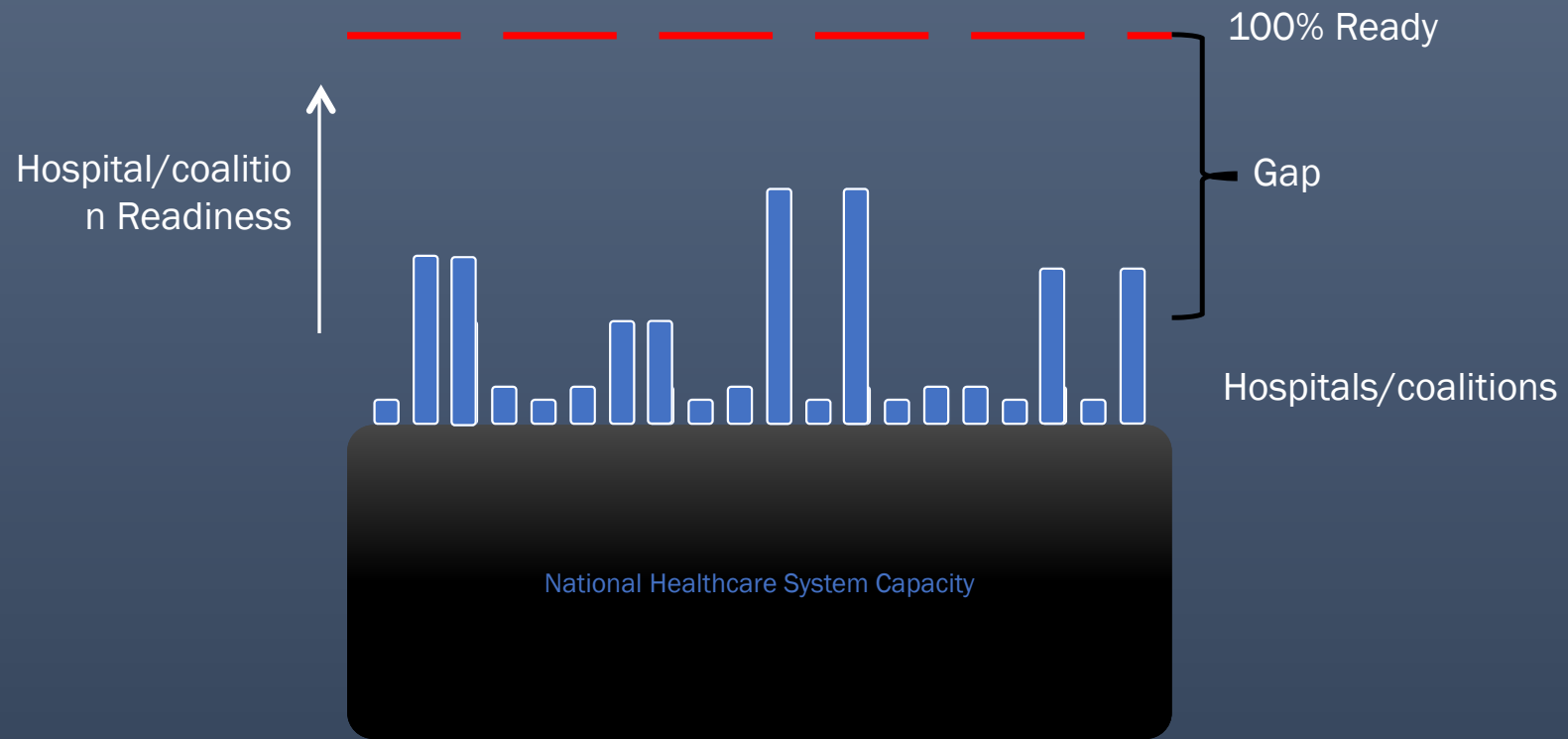
Health Care Delivery during Crises



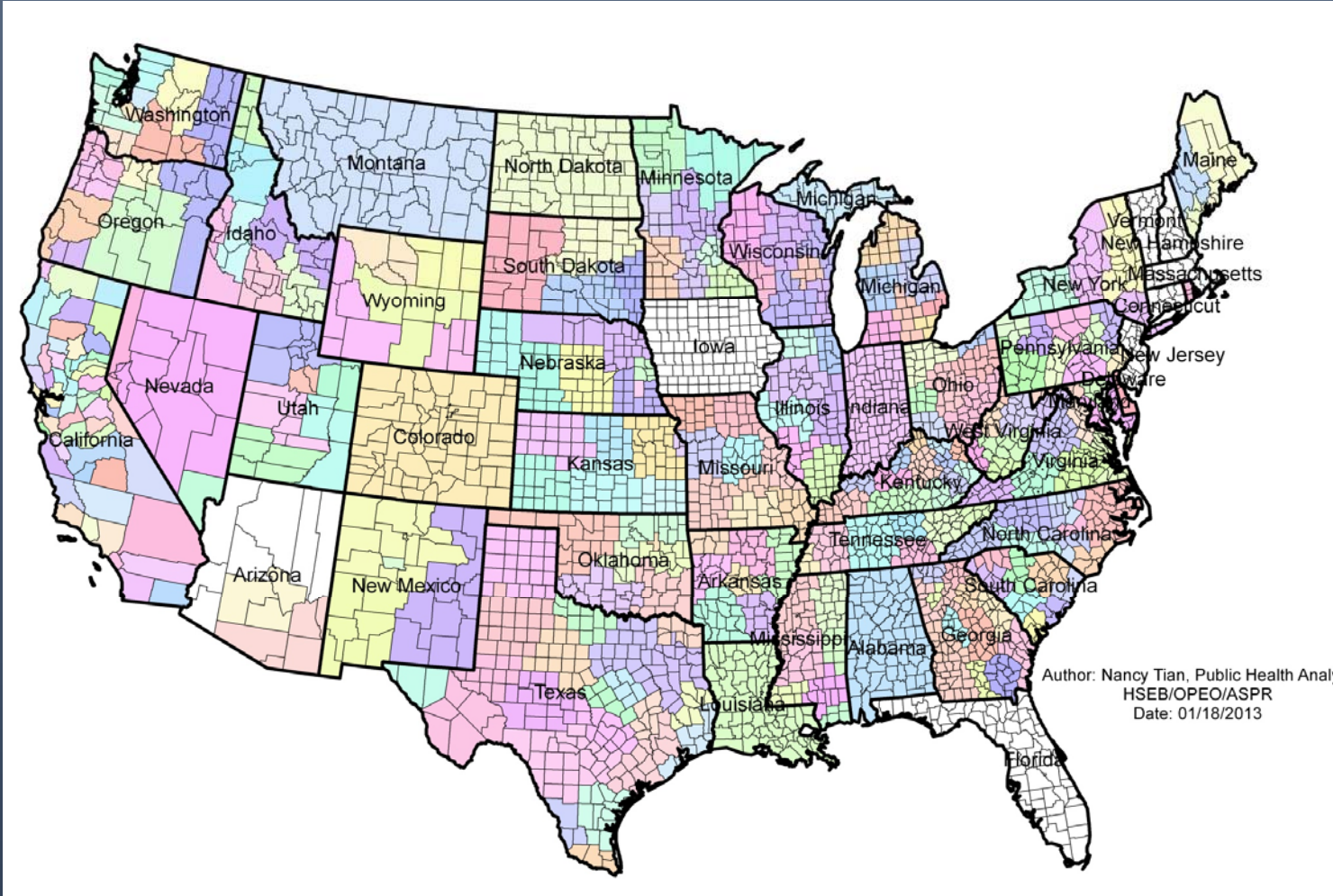
Slide 19

DHHS1 Seems slide 7 is "Today", and slide 8 is "Future". Considering titling slides as such.
DHHS, 10/22/2012

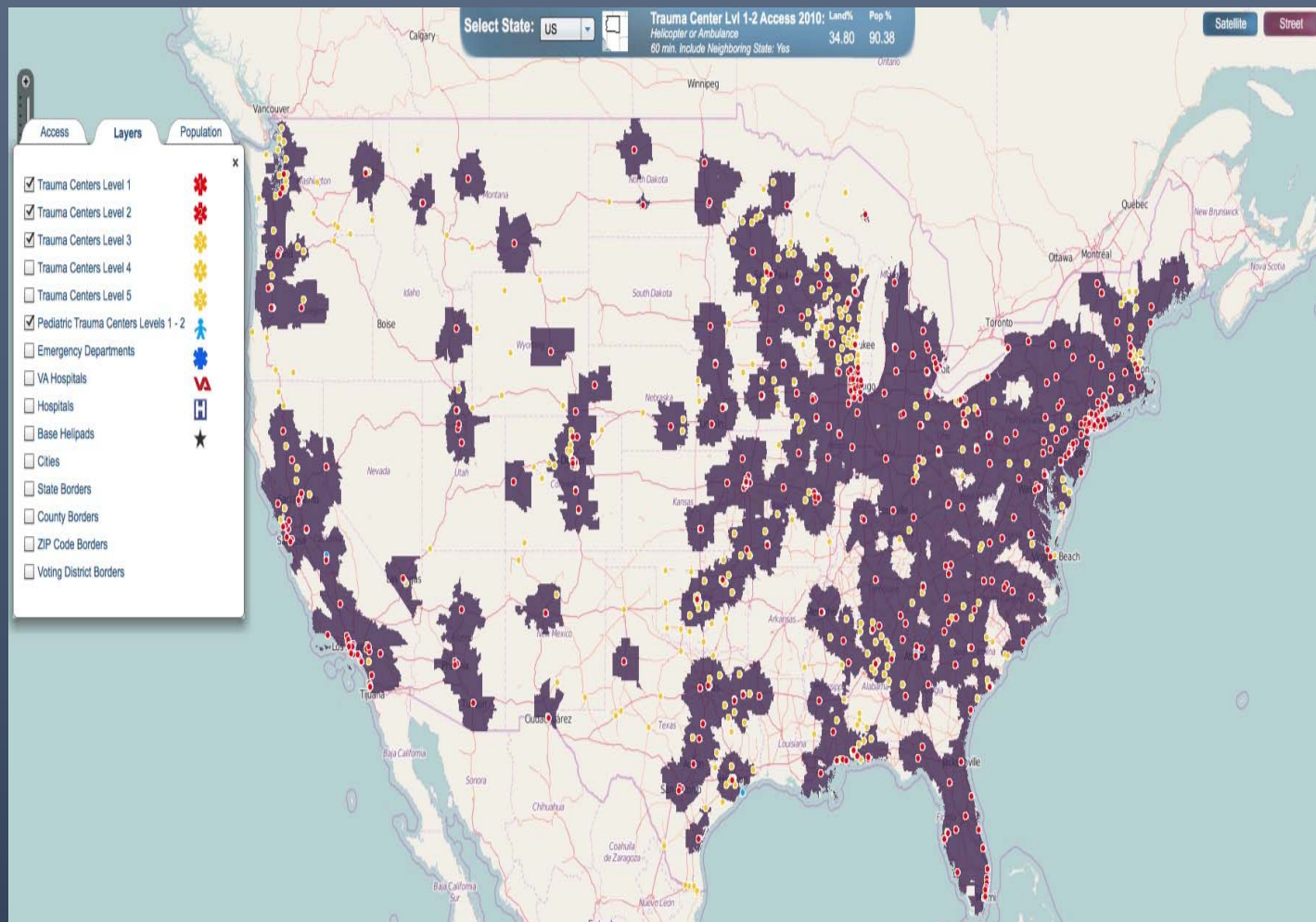
Health Care Delivery during Crises



Geographic Dispersion of HPP Healthcare Coalitions

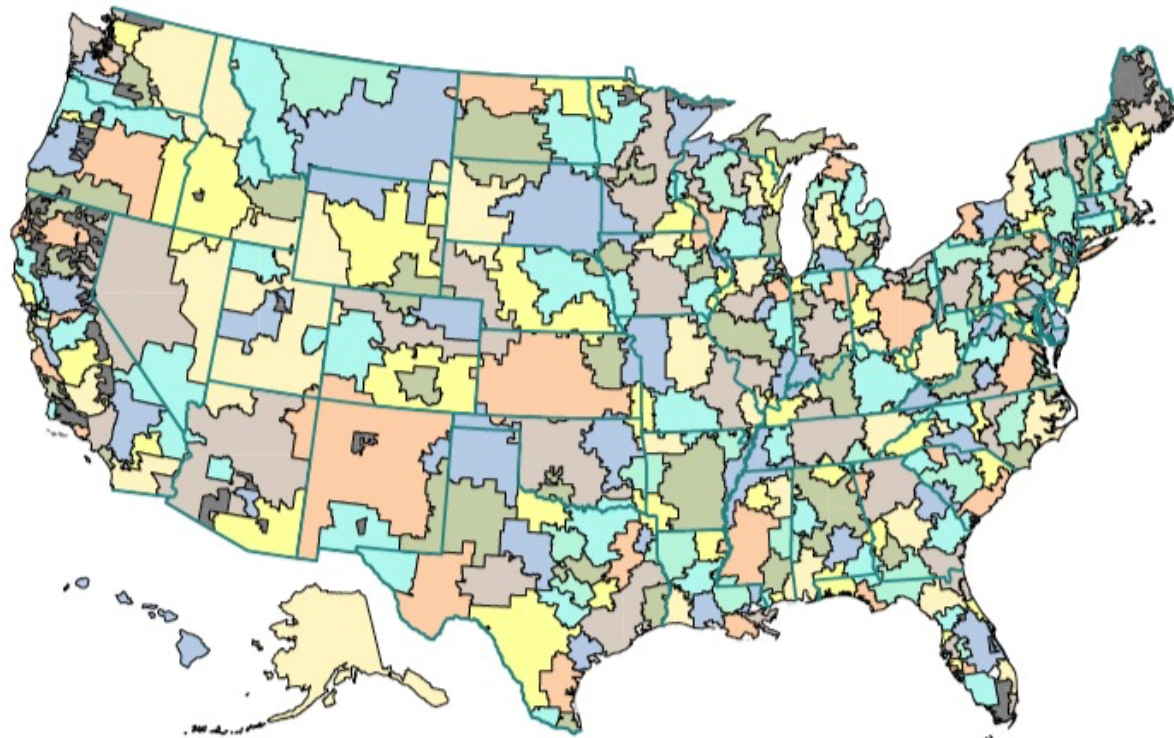


US Trauma Systems



Hospital Referral Regions

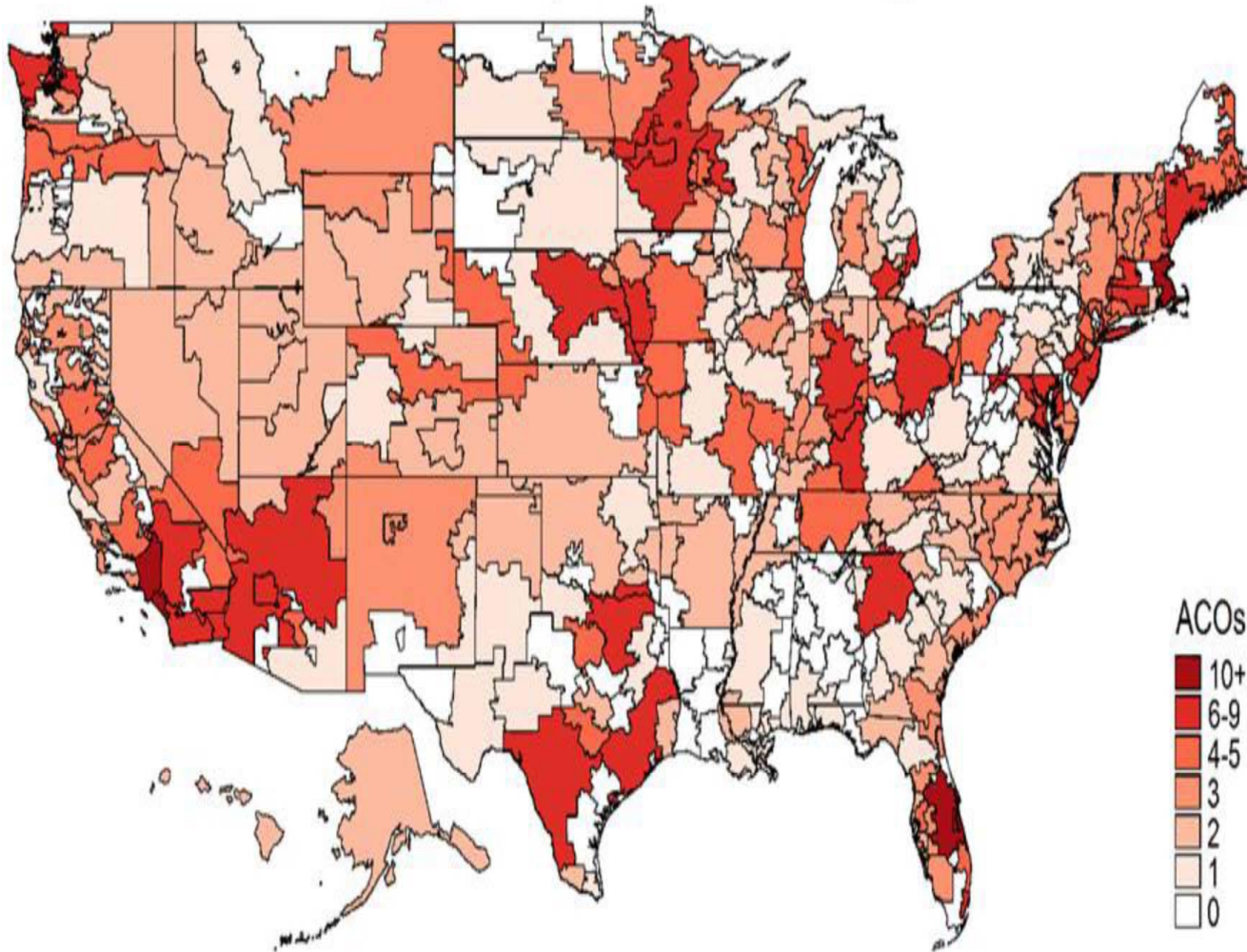
Map A. The Dartmouth Atlas hospital referral regions



← Conclusion

Appendix B: About the *U.S. News*
Best Hospitals for Clinical Excellence →

ACOs by Hospital Referral Region



Health Disparities

Year: 2014
Geography: County
Measure: Prevalence
Adjustment: Actual
Analysis: Base Measure
Condition: 2 of the Claims-Based Cc
Sex: All
Age: All
Dual Eligible: Dual & Non-Dual
Race and Ethnicity: All
Comparison: All
Race and Ethnicity

Download

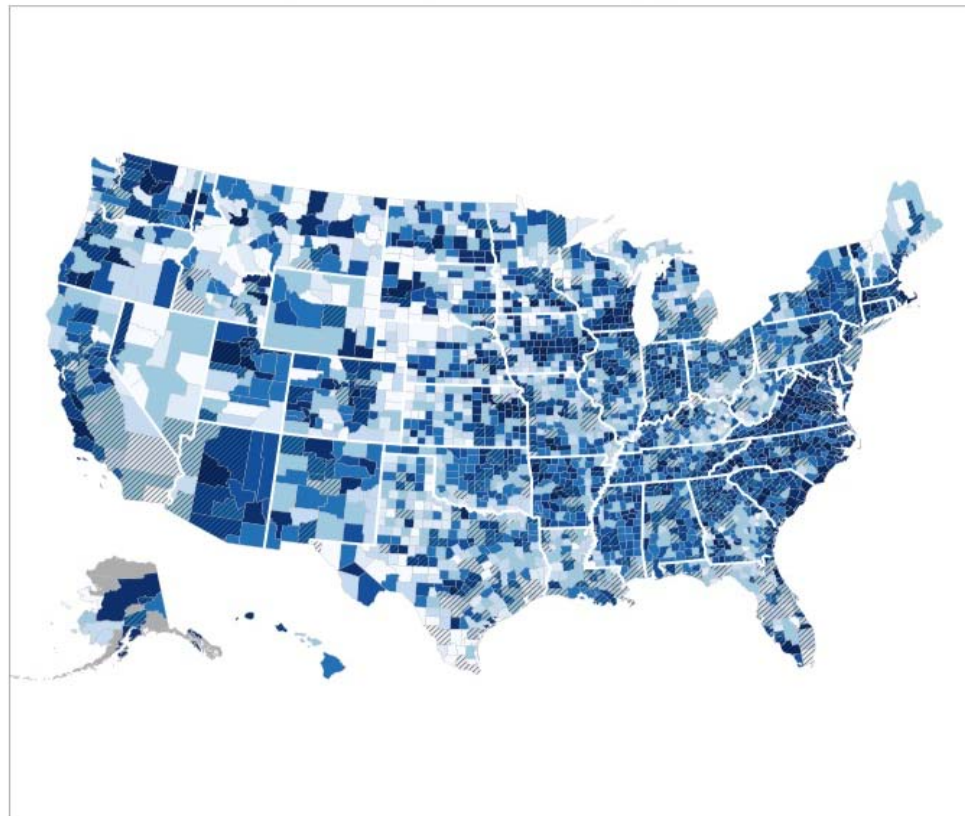
To zoom in on a region, move your cursor over the region of interest and scroll your mouse wheel (scroll-up). To zoom back out, scroll-down. Chrome is recommended.

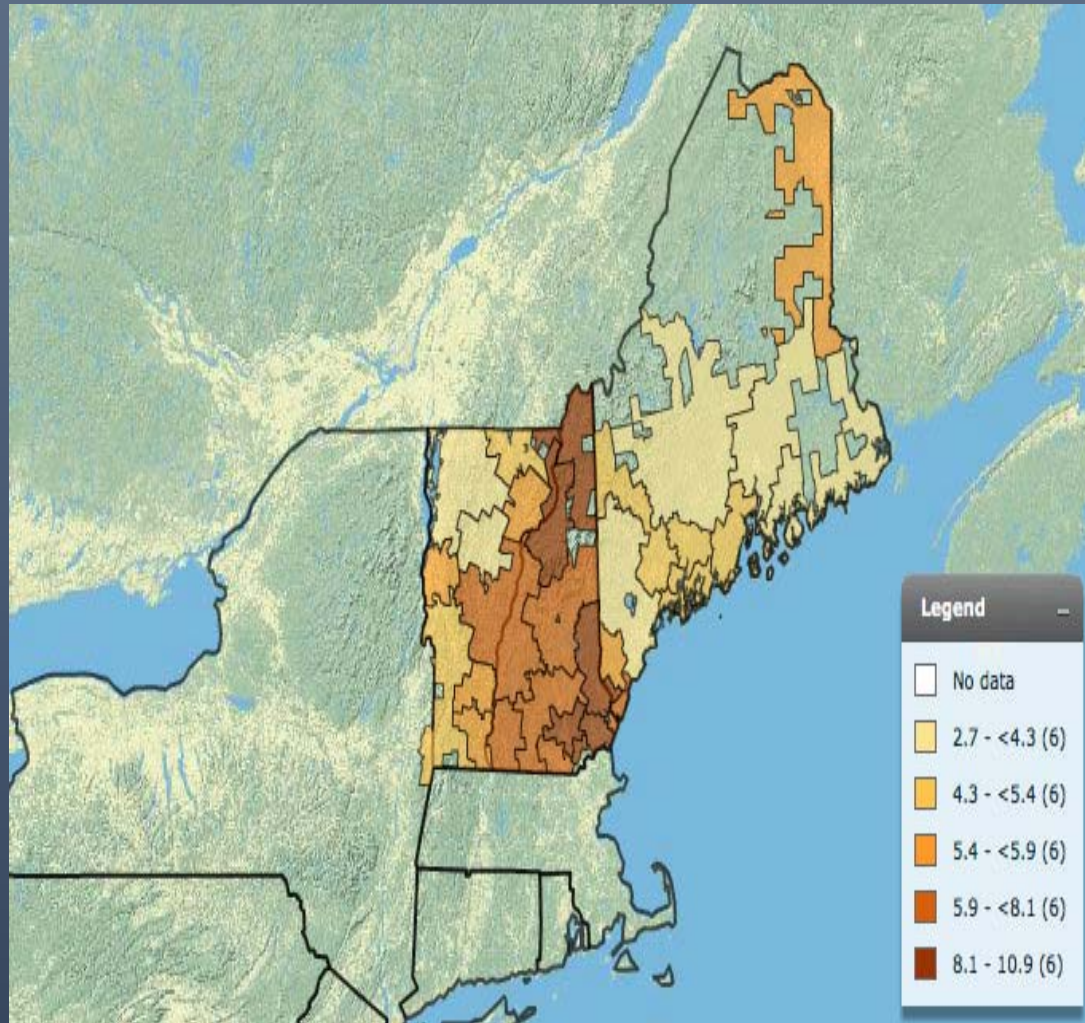
Prevalence (% , per year)



Shading indicates urban counties.
Insufficient Data

Data Last Updated: March 8, 2016





THE GREAT DIVIDE

- Healthcare
 - \$3 trillion
 - Social Security Act
 - Balanced Budget Act
 - Finance Committee
 - Ways and Means Committee
 - CMS/ONC
- Healthcare “Preparedness”
 - \$235 million
 - Pandemic and All Hazards Preparedness Act (reauth)
 - HELP Committee
 - Energy and Commerce Committee
 - ASPR/CDC

LANDMARK CLINICAL TRIALS

AND THEIR CURRENT RATE OF USE

CLINICAL PROCEDURE	LANDMARK TRIAL	CURRENT RATE OF USE
FLU VACCINE	1968	64% (2000)
THROMBOLYTIC THERAPY	1971	20% (2000)
PNEUMOCOCCAL VACCINE	1977	53% (2000)
DIABETIC EYE EXAM	1981	48.1% (2000)
BETA BLOCKERS AFTER MI	1982	92.5% (2001)
MAMMOGRAPHY	1982	75.5% (2001)
CHOLESTEROL SCREENING	1984	69.1% (1999)
FECAL OCCULT BLOOD TEST	1986	20.6% (1999)



BALAS EA, BOREN SA. MANAGING CLINICAL KNOWLEDGE FOR HEALTH CARE IMPROVEMENT. YEARBOOK OF MEDICAL INFORMATICS 2000.



Problem Statement

- The US healthcare system has no requirements and is not incentivized to deliver optimal healthcare in disasters to optimize a patient's or a population's health
- The US healthcare delivery system is focused on cost reduction, including service retraction and an emphasis on out-patient management, resulting in “just-in-time” (JIT) operating principles and staffing negating medical surge.
- The United States health system emergency preparedness and response mechanisms are established but undeveloped. They often are fragmented, divorced from daily health delivery practice patterns and restrained by economic realities.
- The US emergency care delivery system continues to experience overcrowding, with limited mechanisms to reallocate patients throughout the hospital or the community.

Healthcare

What 183 C-suite executives told the Advisory Board-May 2017

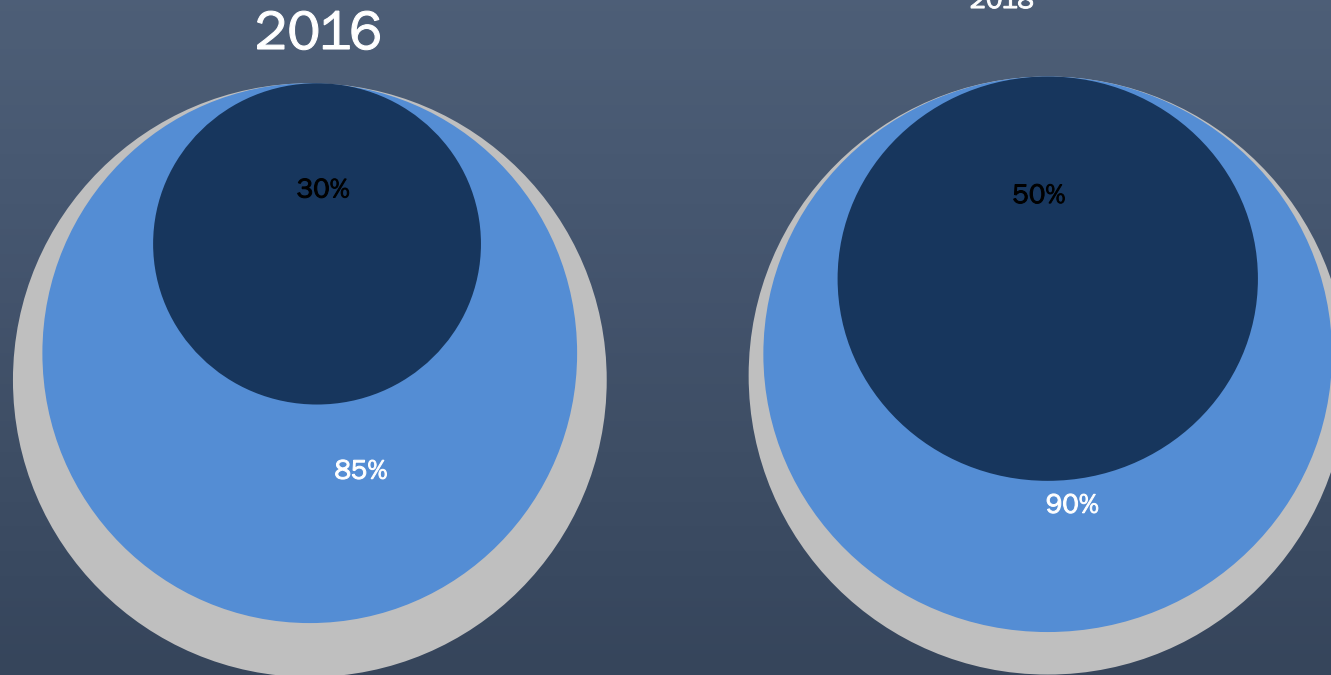
- The top six issues were:
 - *Improving ambulatory access (57% assigning an "A" grade)*
 - *Innovative approaches to expense reduction (57%)*
 - *Boosting outpatient procedural market share (55%)*
 - *Minimizing unwarranted clinical variation(54%)*
 - *Controlling avoidable utilization (49%)*
 - *Exploring diversified, innovative revenue streams (48%)*

Payment Taxonomy Framework

Payment Taxonomy Framework				
	Category 1:	Category 2:	Category 3:	Category 4:
	Fee for Service— No Link to Quality	Fee for Service—Link to Quality	Alternative Payment Models Built on Fee- for-Service Architecture	Population-Based Payment
Description	Payments are based on volume of services and not linked to quality or efficiency	At least a portion of payments vary based on the quality or efficiency of health care delivery	Some payment is linked to the effective management of a population or an episode of care. Payments still triggered by delivery of services, but opportunities for shared savings or 2-sided risk	Payment is not directly triggered by service delivery so volume is not linked to payment. Clinicians and organizations are paid and responsible for the care of a beneficiary for a long period (e.g. ≥ 1 yr)
Medicare FFS	<ul style="list-style-type: none"> Limited in Medicare fee-for-service Majority of Medicare payments now are linked to quality 	<ul style="list-style-type: none"> Hospital value-based purchasing Physician Value-Based Modifier Readmissions/Hospital Acquired Condition Reduction Program 	<ul style="list-style-type: none"> Accountable care organizations Medical homes Bundled payments Comprehensive primary care initiative Comprehensive ESRD Medicare-Medicaid Financial Alignment Initiative Fee-For-Service Model 	<ul style="list-style-type: none"> Eligible Pioneer accountable care organizations in years 3-5

Target percentage of Medicare FFS payments linked to quality and alternative payment models in 2016 and 2018

- All Medicare FFS (Categories 1-4)
- FFS linked to quality (Categories 2-4)
- Alternative payment models (Categories 3-4)



Breaking Down The MACRA Proposed Rule

Billy Wynne, Katie Pahner, and Devin Zatorski

April 29, 2016



The mother ship has landed. On Wednesday, April 27, the Centers for Medicare and Medicaid Services (CMS) released the highly anticipated [proposed rule](#) that would establish key parameters for the new Quality Payment Program, a framework that includes the Merit-based Incentive Payment System (MIPS) and Alternative Payment Models (APMs). These policies were established by the latest, permanent 'doc fix,' the Medicare Access and CHIP Reauthorization Act of 2015 (MACRA).

For additional background, please refer to recent *Health Affairs* Blog posts on [MACRA](#), [MIPS](#), and [APMs](#), as well as a comprehensive [brief](#) on MACRA. This post briefly outlines the key elements of the proposed rule.

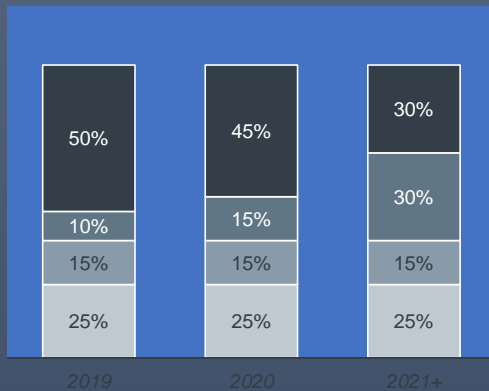
MIPS

The proposal defines which eligible clinicians will initially participate in the Quality Payment Program via MIPS, with CY 2017 proposed as the first performance period on which CMS plans to base the CY 2019 payment adjustment. Eligible clinicians include physicians, physician assistants, nurse practitioners, clinical nurse specialists, certified registered nurse anesthetists, and groups that include such clinicians.

As outlined in MACRA, the proposal would consolidate three currently disparate Medicare quality programs into MIPS: (1) the Physician Quality Reporting System; (2) the Value-Based Modifier Program; and (3) the 'Meaningful Use' of electronic health records. CMS proposes that eligible

Four MIPS¹ Categories Make up Total Performance Score

Relative Weight of Each MIPS Category Over Time



- Quality
- Cost/Resource Use
- Clinical Practice Improvement
- Advancing Care Information

Merit-Based Incentive Payment System.
 Electronic Health Records.
 Eligible clinicians include physicians, physician assistants, nurse practitioners, clinical nurse specialists, certified registered nurse anesthetists, and groups that include such clinicians.

Category	Description	Relative Difficulty
Quality	Clinicians must select 6 measures of the over 200+ available to report to CMS; score in this category not just awarded for reporting, but for high performance	
Resource Use	Points awarded for cost savings; clinician scores based on Medicare claims, no reporting required	
Clinical Practice Improvement	New category that rewards clinicians for clinical practice improvement activities; over 90 activities to choose from	
Advancing Care Information	Tracks clinicians EHR ² use offering partial credit, can report as individual or group	

Score based on peer performance benchmarks

Score based on Eligible Clinicians'³ own performance

Source: CMS, "Medicare Program: Merit-Based Incentive Payment System (MIPS) and Alternative Payment Model (APM) Incentive under the Physician Fee Schedule, and Criteria for Physician-Focused Payment Models," May 9, 2016, available at: <https://s3.amazonaws.com/public-inspection.federalregister.gov/2016-10032.pdf>; Advisory Board research and analysis.

CEOs Top Challenges in Pediatric Health Care

- **Future workforce**
 - *A 2012 Children’s Hospital Association survey of nearly 70 children’s hospitals across the country revealed ongoing vacancies of 12 months or longer among key pediatric specialties—such as neurology, general surgery and developmental/behavior health*
- **Lack of research funding**
 - *The average number of research applicants who consistently receive grant funding is 7 percent.*
- **Changing reimbursement models**
 - *70 percent of Children’s Hospital of Michigan patients are on Medicaid, so understanding how reimbursement will change if they’re covered by a health insurance exchange plan is crucial.*

CEOs Top Challenges in Pediatric Health Care

■ Competition, collaboration, consolidation

- *Children's hospitals often see their biggest competition as each other.*
- *If children's hospitals compete with each other to the point of putting others out of business, it could limit access to care.*
- *Instead of competing, consider for example, what would happen if multiple children's hospitals within the same market pooled resources or data and formed a nonprofit research entity. All of the hospitals involved, and their patients, would benefit.*

■ Partnerships and data sharing

- *Nearly 40 Children's Hospital Association member hospitals have combined forces in a common group purchasing organization (GPO) to reduce costs and also connect purchasing information with pediatric evidence-based operational and clinical data.*
- *GPO participants access an integrated database that uses administrative data for benchmarking and performance improvements across the continuum-of-care.*
- *CHOP's partnership with the Beijing Genomics Institute and Boston Children's partnership with Claritas Genomics.*
- *Of CHOP's \$2.2 billion annual revenue, approximately \$100 million comes from international efforts.*

Wall Street Journal

19 September 2014

U.S. News

Are U.S. Soldiers Dying From Survivable Wounds? Despite Advances in Care, the Military Failed to Save Some Troops in Iraq and Afghanistan From 'Potentially Survivable' Wounds

By
Michael M. Phillips

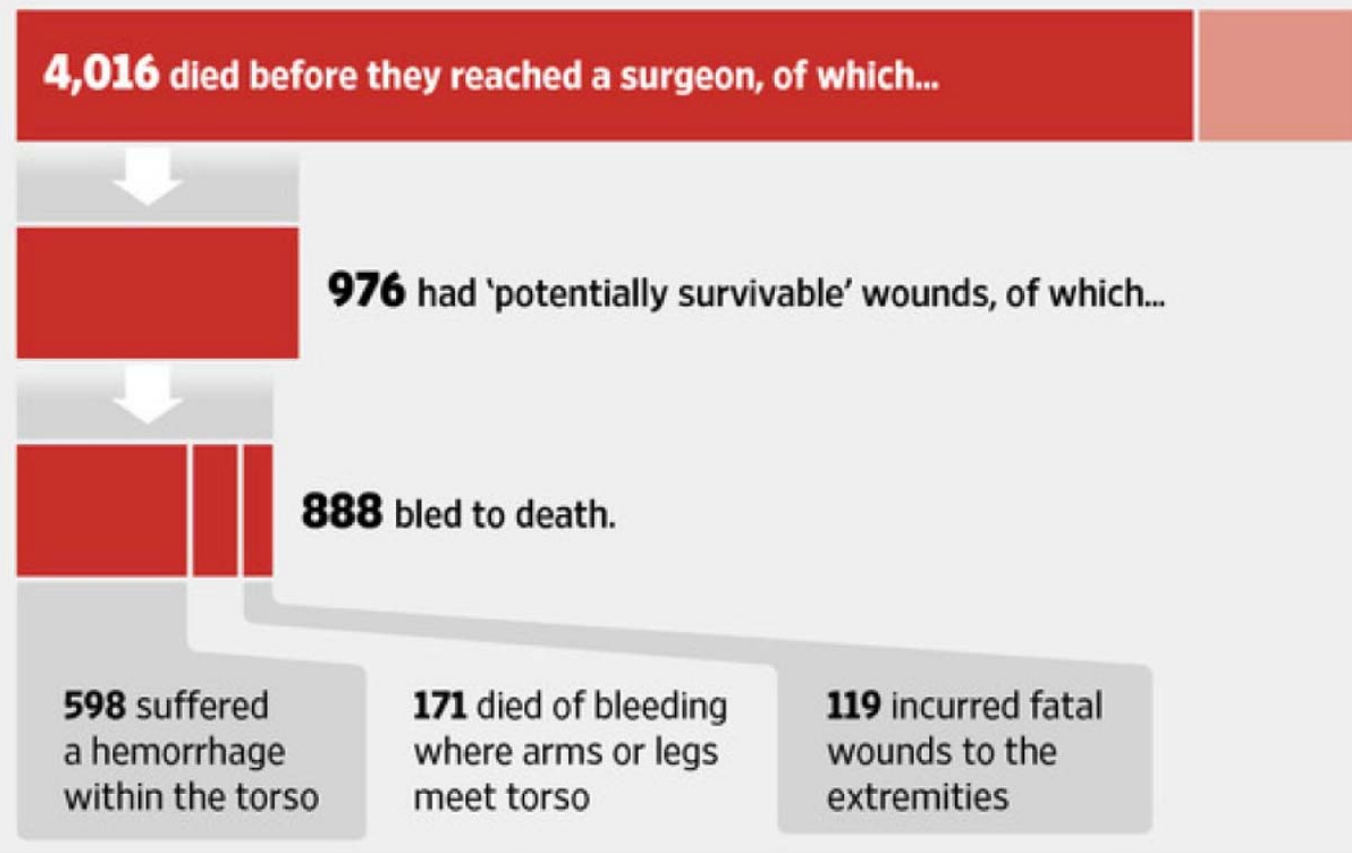


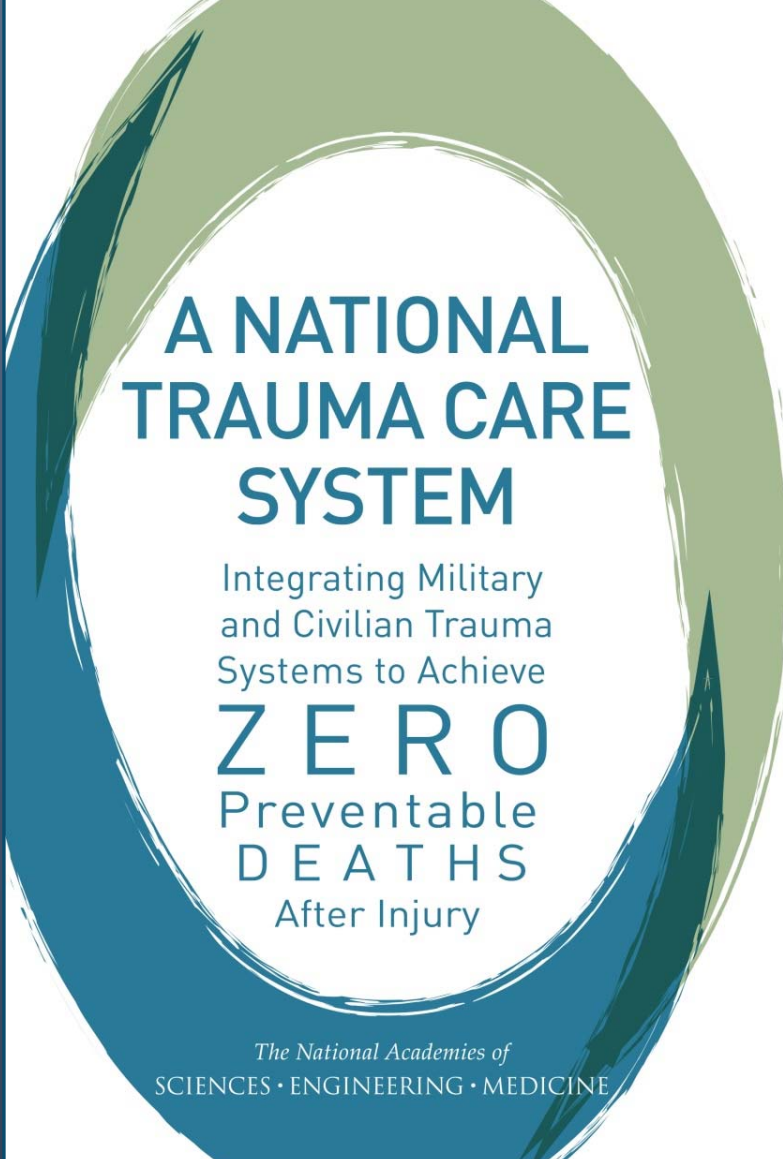
A U.S. Army soldier receives medical assistance after being injured by an explosive in Afghanistan in 2012. Agence France-Presse/Getty Images

In an unassuming building in suburban Washington, a team of military medical specialists spent six months poring over autopsies of 4,016 men and women who had died on the battlefields of Iraq and Afghanistan.

Could They Have Survived?

Over six months, a team of military doctors reviewed 4,596 autopsies of troops killed in Iraq and Afghanistan between Oct. 2001 and June 2011. Of those men and women...





A NATIONAL TRAUMA CARE SYSTEM

Integrating Military
and Civilian Trauma
Systems to Achieve

Z E R O

Preventable
D E A T H S

After Injury

The National Academies of
SCIENCES • ENGINEERING • MEDICINE

Committee on Military Trauma Care's Learning Health System and Its Translation to the Civilian Sector

Donald Berwick (*Chair*), Institute for Healthcare Improvement

Ellen Embrey, Stratitia, Inc., and 2c4 Technologies, Inc.

Sara F. Goldkind, Goldkind Consulting, LLC

Adil Haider, Brigham and Women's Hospital, and Harvard University

COL (Ret) John Bradley Holcomb, University of Texas Health Science Center

Brent C. James, Intermountain Healthcare

Jorie Klein, Parkland Health & Hospital System

Douglas F. Kupas, Geisinger Health System

Cato Laurencin, University of Connecticut

Ellen MacKenzie, Johns Hopkins University School of Hygiene and Public Health

David Marcozzi, University of Maryland School of Medicine

C. Joseph McCannon, The Billions Institute

Norman McSwain, JR., (until July 2015), Tulane Department of Surgery

John Parrish, Consortia for Improving Medicine with Innovation and Technology (CIMIT); Harvard Medical School

Rita Redberg, University of California, San Francisco

Uwe E. Reinhardt, (until August 2015), Princeton University

James Robinson, Denver Health EMS-Paramedic Division

Thomas Scalea, R. Adams Cowley Shock Trauma Center, University of Maryland

C. William Schwab, University of Pennsylvania

Philip C. Spinella, Washington University in St. Louis School of Medicine



Focused Empiricism

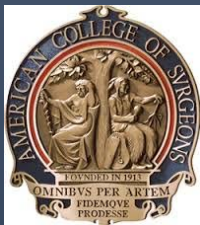
Box 4-1

THE MILITARY'S FOCUSED EMPIRICISM APPROACH TO LEARNING AND CONTINUOUS IMPROVEMENT

Empiricism is the theory that important knowledge can be derived from experiential learning. Focused empiricism is a concept embraced by U.S. military medical leadership to capture its approach to process improvement under circumstances in which (1) high-quality data are not available to inform clinical practice changes, (2) there is extreme urgency to improve outcomes because of high morbidity and mortality rates, and (3) data collection is possible (Elster et al., 2013). A key principle of focused empiricism is using the best data available in combination with experience to develop clinical practice guidelines that, through an iterative process, continue to be refined until high-quality data can be generated to further inform clinical practice and standards of care.

Study Sponsors

- American College of Emergency Physicians
- American College of Surgeons
- National Association of Emergency Medical Technicians
- National Association of EMS Physicians
- Trauma Center Association of America
- U.S. Department of Defense's U.S. Army Medical Research and Material Command
- U.S. Department of Homeland Security's Office of Health Affairs
- U.S. Department of Transportation's National Highway Traffic Safety Administration



Context

■ The Imperative

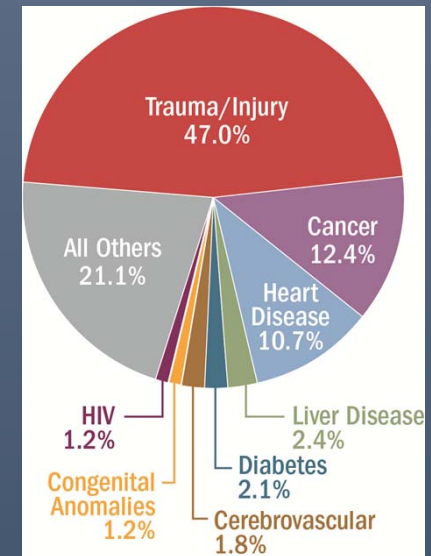
- *The U.S. service members the nation sends into harm's way and every American should have the best possible chance for survival and functional recovery after injury.*

■ The Urgency

- **Military burden:** ~6,850 service member deaths in Iraq and Afghanistan. Nearly 1,000 from potentially survivable injuries.
- **Civilian burden:** 147,790 U.S. trauma deaths in 2014 - as many as 30,000 may have been preventable with optimal trauma care.
- *Threats from active shooter and other mass casualty incidents.*
- *As wars end and service members leave the military, the knowledge, experience and advances in trauma care gained over past decade are being lost.*

• The Opportunity

- Existence of a military trauma system built on a learning system framework that has achieved unprecedented survival rates for casualties.
- Organized civilian trauma system that is well positioned to assimilate recent wartime trauma lessons learned and serve as a repository and incubator for innovation during the interwar period.



Traumatic injury accounts for nearly half of all deaths for Americans under 46 years of age and cost the nation \$670B in 2013.

Findings and Recommendations

The Aim (Rec 1)

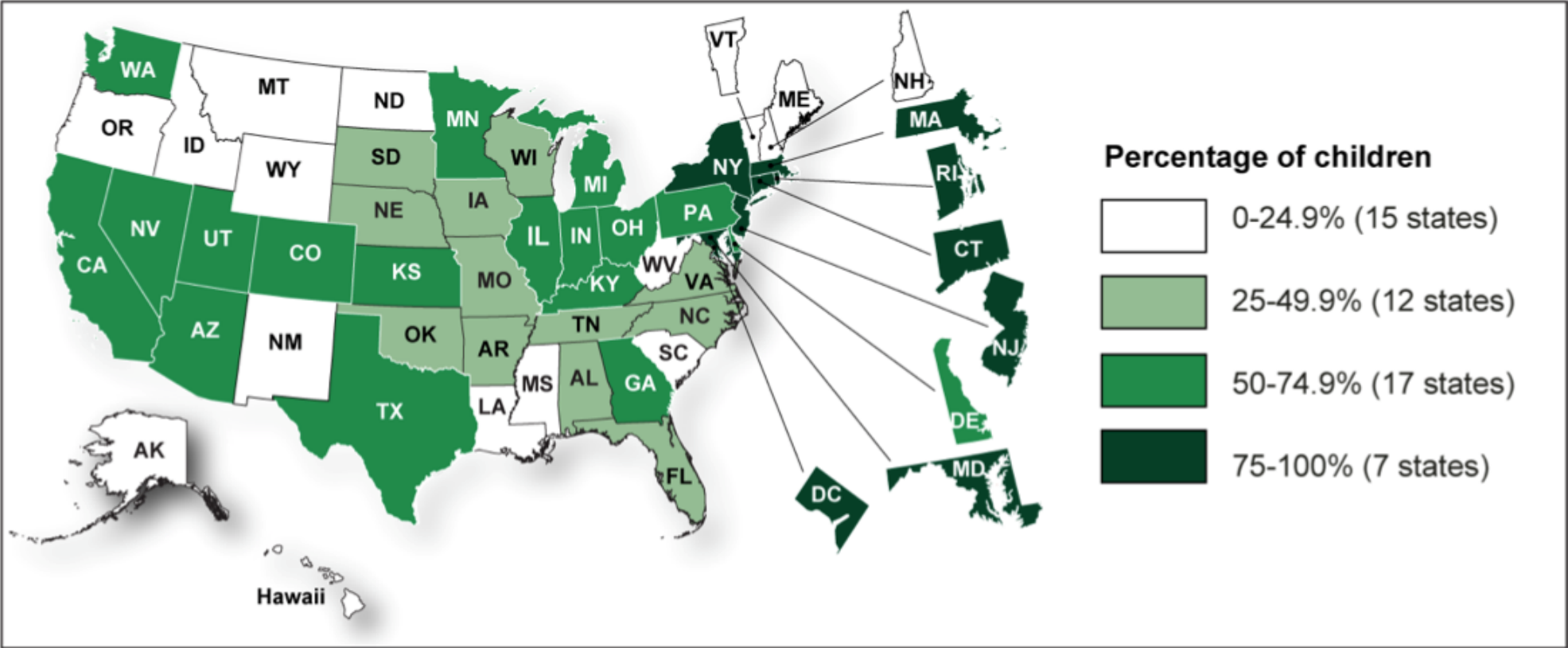
The Role of Leadership

- National-Level Leadership (Rec 2)
- Military Leadership (Rec 3)
- Civilian Sector Leadership (Rec 4)

An Integrated Military–Civilian Framework for Learning to Advance Trauma Care

- Improving the Collection and Use of Data (Rec 5)
- A Collaborative Research Infrastructure in a Supportive Regulatory Environment (Recs 7 and 8)
- Systems and Incentives for Improving Transparency and Trauma Care Quality (Recs 9 and 10)
- Developing Expertise (Recs 6 and 11)

Estimated Percentage of Children Who Lived within 30 Miles of a High-Level Pediatric Trauma Center, by State, 2011-2015



Sources: GAO analysis of American Trauma Society and U.S. Census Bureau data (data); Map Resources (map). | GAO-17-334

What GAO Found

- GAO estimates that 57 percent of the 73.7 million children in the United States during the period 2011-2015 lived within 30 miles of a pediatric trauma center that can treat all injuries regardless of severity.
- In areas without pediatric trauma centers, injured children may have to rely on adult trauma centers or less specialized hospital emergency departments for initial trauma care.
- Some studies GAO reviewed, including nationwide studies, found that children treated at pediatric trauma centers have a lower mortality risk compared to children treated at adult trauma centers and other facilities, while other state-level studies GAO reviewed found no difference in mortality.
- Further, some studies GAO reviewed and stakeholders GAO interviewed suggest that more information is needed on outcomes other than mortality for children treated at pediatric trauma centers because mortality can be a limited outcome measure, as overall mortality is low among severely injured children.

PMC full text: [Tex Heart Inst J. 2012; 39\(6\): 871–873.](#)
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Table II. Causes of Pediatric Traumatic Death by Age Group in Harris County, Texas (2004–2008)

TABLE II. Causes of Pediatric Traumatic Death by Age Group in Harris County, Texas (2004–2008)

Age, yr	Accident	Homicide	Suicide	Total
<1	10 (40)	15 (60)	0	25 (14)
1–4	56 (71)	23 (29)	0	79 (45)
5–9	19 (83)	4 (17)	0	23 (13)
10–15	32 (66)	8 (17)	8 (17)	48 (27)
Total	117 (67)	50 (29)	8 (5)	175

Data are presented as number and percentage.

TABLE I. Characteristics of Pediatric Traumatic Deaths in Harris County, Texas (2004–2008)

Variable	Not Preventable	Preventable	Total
No. of deaths	152 (87)	23 (13)	175 (100)
Age, yr	5.9 (0.8–14.9)	5.0 (0.2–13.1)	5.7 (0.8–14.9)
Male sex	96 (63)	7 (30)	103 (59)
Race			
Hispanic	50 (33)	11 (48)	61 (35)
Black	46 (30)	8 (35)	54 (31)
Asian	2 (1)	0	2 (1)
Intent			
NAT	25 (16)	9 (39)	34 (19)
Accident	105 (69)	12 (52)	117 (67)
Homicide	39 (26)	11 (48)	50 (29)
Suicide	8 (5)	—	8 (5)
Manner			
Motor vehicle	95 (63)	10 (43)	104 (59)
Weapon	24 (16)	—	24 (14)
Animal	1 (1)	—	1 (1)
Falls	10 (7)	3 (13)	13 (7)
Undetermined	15 (10)	4 (17)	19 (11)
Other	8 (5)	6 (26)	14 (8)
AIS head ≥5*	110 (72)	0	110 (63)
Hospital deaths	94 (62)	20 (87)	114 (65)

AIS = Abbreviated Injury Scale; NAT = non-accidental trauma

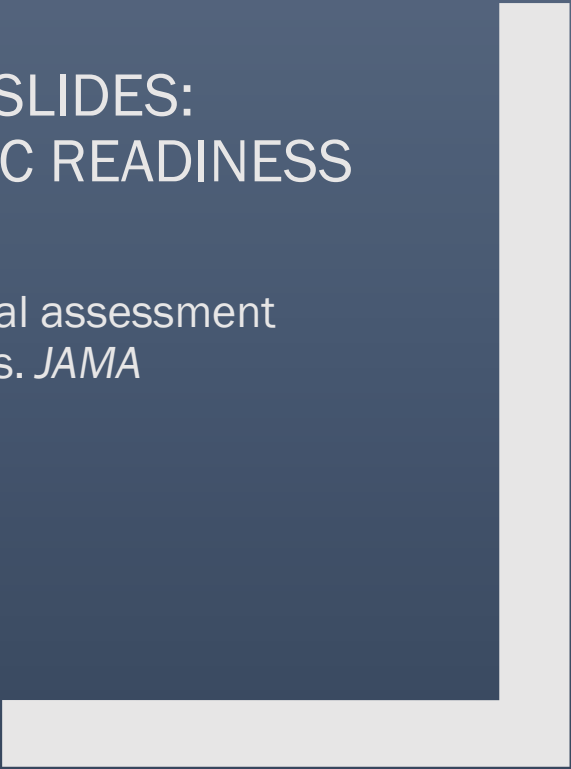
*The Abbreviated Injury Scale (AIS[®]) is an anatomically based, consensus-derived global severity scoring system that classifies each injury by body region according to its relative importance on a 6-point ordinal scale (1=minor and 6=maximal). © 2006, Association for the Advancement of Automotive Medicine [http://www.aam1.org.ais].

Data are presented as mean and range or as number and percentage.



JAMA PEDIATRICS JOURNAL CLUB SLIDES:
NATIONAL ASSESSMENT OF ED PEDIATRIC READINESS

Gausche-Hill M, Ely M, Schmuhl P, et al. A national assessment of pediatric readiness of emergency departments. *JAMA Pediatr*. Published online April 13, 2015.
doi:10.1001/jamapediatrics.2015.138.



Methods

- Study Design

- *Web-based assessment of US EDs for pediatric readiness.*

- Setting

- *EDs (excluding specialty hospitals and hospitals without an ED open 24 hours per day, 7 days per week).*

- Participants

- *All 5017 ED nurse managers were sent a 55-question web-based assessment.*

Results

- Of the 5017 EDs contacted, 4149 (82.7%) responded, representing 24 million annual pediatric ED visits.
- Among the EDs entered in the analysis, 69.4% had low or medium pediatric volume and treated fewer than 14 children per day.
- The median WPRS was 68.9 (interquartile range [IQR], 56.1-83.6).
- The median WPRS increased by pediatric patient volume, from 61.4 (IQR, 49.5-73.6) for low-pediatric-volume EDs compared with 89.8 (IQR, 74.7-97.2) for high-pediatric-volume EDs ($P < .001$).
- The median percentage of recommended pediatric equipment available was 91% (IQR, 81%-98%).

Results

- The presence of physician and nurse PECCs was associated with a higher adjusted median WPRS (82.2 [IQR, 69.7-92.5]) compared with no PECC (66.5 [IQR, 56.0-76.9]) across all pediatric volume categories ($P < .001$).
- The presence of PECCs increased the likelihood of having all the recommended guideline components, including a pediatric quality improvement process (adjusted relative risk, 4.11; 95% CI, 3.37-5.02).
- Barriers to guideline implementation were reported by 80.8% of responding EDs.

Comment

- In 2006, the Institute of Medicine report on the future of emergency care in US health care systems recommended that “hospitals should appoint 2 pediatric emergency coordinators—one a physician—to provide pediatric leadership for the organization.”^{1(p322)}
- These data provide evidence for the importance of PECCs in ensuring pediatric readiness of EDs.
- The presence of PECCs is associated with improved compliance with published guidelines.

¹Institute of Medicine, Committee of the Future of Emergency Care in the US Health System. *Emergency Care for Children: Growing Pains*. Washington, DC: National Academy Press; 2006.

Comment

- The importance for EDs to maintain a state of readiness to care for children cannot be overemphasized because day-to-day readiness affects disaster planning and response as well as patient safety.
- These data demonstrate improvement in pediatric readiness of EDs as compared with previous reports.
- Barriers to guideline implementation may be targeted for future initiatives by a national coalition whose goal is to ensure day-to-day pediatric readiness of our nation's EDs.

Current status of pediatric health system performance measurement

- We know relatively little about the quality and efficiency of pediatric health care and publicly report even less.
- Compared to the care provided to Medicare beneficiaries, where extensive research and public information on utilization, costs, and outcomes is increasingly routine,²⁴ pediatric health care often occurs within a black box where the type, quantity, and outcomes of care are unknown.
- The reasons for the slow pace of developing health care metrics for pediatrics are multi-faceted, some simply by redirecting the nature of pediatric health care, and others the fragmented data sources that are frequently owned by private insurers and providers.

The Dartmouth Atlas of Children's Health Care in Northern New England

David C. Goodman, MD, MS Nancy E. Morden, MD, MPH Shawn L. Ralston, MD Chiang-Hua Chang, PhD Devin M. Parker, BA Shelsey J. Weinstein, BA
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Pediatric Disaster Vulnerabilities

- Infants and toddlers may not have the cognitive or motor skills to escape from the scene of an incident.
- PPE is scary
- Allow families to stay together
- Take into consideration that infants when wet are slippery and will need a way to get them through the decontamination process - i.e. plastic buckets, car seats, stretchers.
- Infants and children are at increased risk for hypothermia

Doable Pediatric Procedures Wearing PPE?

Examination

- Central, peripheral pulse

Procedures

- CPR
- AED defibrillator
- BVM
- Intubation - cuffed and uncuffed
- IO- powered
- Autoinjectors, IM syringes
- tourniquet

Medical Countermeasure Gaps

- The timely availability of appropriately dosed, safe, effective pediatric antidotes, supportive drugs and equipment for children of all ages and sizes is crucial.
- Lack of pediatric autoinjector - pralidoxime
- Lack of effective oxime
- Many of the MCMs are used off label – lack the requisite safety, and efficacy information
- Obesity dosing
- PPE difficulties

Pediatric Disaster Preparedness Education and Training

- There are no established role-specific national core competencies in disaster health for children.
- In the event of a significant disaster most of our children will have to be cared for by non-pediatric or generalist trained clinicians (such as emergency physicians, nurses and paramedics).



RETROFITTING A SYSTEM



Our Current Need

- *A population based health delivery model for disaster response*
- *VISION: A comprehensive, requirement-driven national health care system that is integrated with health delivery, seamlessly scalable, sustainable and educated to meet local, state, regional and national needs during disasters*

Healthcare Operations

- How many ORs do you have available
- How many OR teams are ready
- How many CRNAs or anesthesiologists
- How many trauma surgeons
- How long to perform an emergency thoracotomy
- How long to perform an trauma exploratory laparotomy
- How fast do you turn over rooms
- Damage Control Resuscitation including MTP

1 Hospital's Answer

- How many ORs do you have available-20
- How many OR teams are ready-6
- How many CRNAs or anesthesiologists-6
- How many trauma surgeons-4
- How long to perform an emergency thoracotomy-90mins
- How long to perform an trauma exploratory laparotomy-90mins
- How fast do you turn over rooms-30 mins

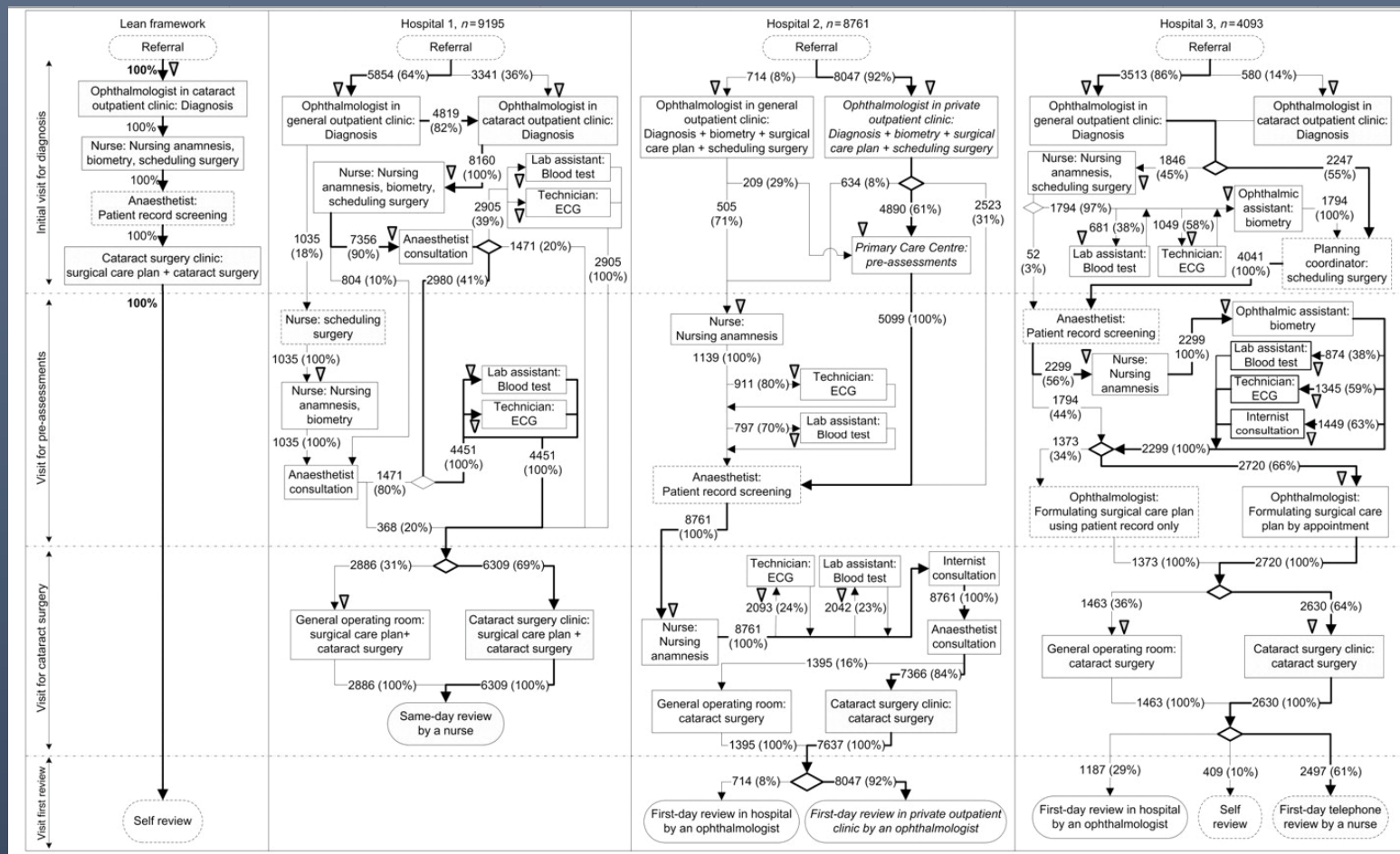
What is your adjusted mortality rate compared to the national injury age-adjusted mortality rate?

Measurements	poor performance	medium performance	high performance
Excess Staffing Costs	>10%	5-10%	<5%
Start-time tardiness (mean tardiness for elective cases/day)	>60 min	45-60 min	<45 min
Case cancellation rate	>10%	5-10%	<5%
Post Anesthesia Care Unit (PACU) admission delays (% workdays with at least one delay in PACU admission)	>20%	10-20%	<10%
Contribution Margin (mean) per operating room hour	<\$1,000/hr	\$1-2,000/hr	>\$2,000/hr
Turnover Time (for all cases mean time from previous patient out of the OR to next patient in the OR including setup and cleanup)	>40 min	25-40 min	<25 min
Prediction Bias (bias in case duration estimates per 8 hours of operating room time)	>15 min	5-15 min	<5 min
Prolonged turnovers (% turnovers lasting more than 60 minutes)	>25%	10-25%	<10%

Macario A. Are Your Hospital Operating Rooms "Efficient"?
Anesthesiology 2006; 105:237-40.

How long till the last red tag in the OR?

- 10 Red tag patients from a mass shooting
- Last patient 6 hours later
- Damage Control Resuscitation including MTP-?

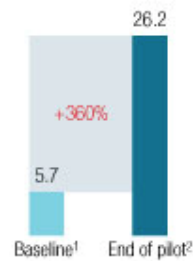


The environmental context and operational focus primarily influenced process design of the cataract pathways. When pressed to further optimize their processes, hospitals can use these systematic benchmarking data to decrease the frequency of hospital visits, lead times and costs

Discharge Times

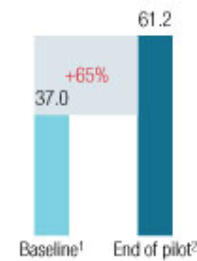
More discharges before 11 am create bed capacity for late-night and early-morning ED patients

Patients on medical wards discharged before 11 am
%

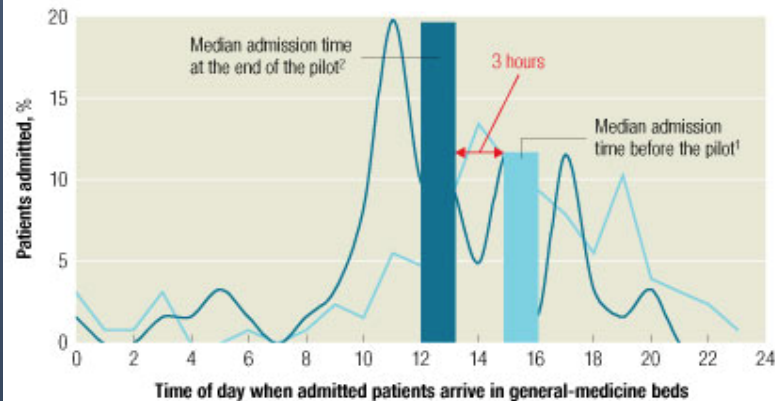


Discharging almost all appropriate patients by 2 pm creates bed capacity for early-afternoon ED surge

Patients on medical wards discharged before 2 pm
%



The result is a three-hour decrease in median admission time



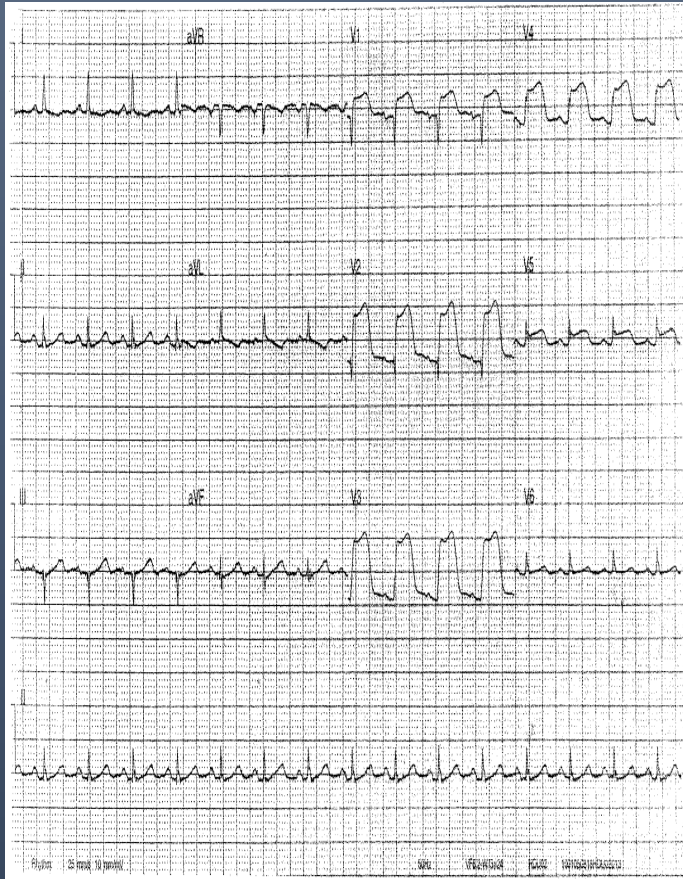
- Patient receives ideal level of care sooner
- Staff is happier since patients arrive earlier in the day shift, when support resources are available
- Less overlap of admissions and discharges

¹Average during four weeks before pilot.

²Average during last two weeks of pilot.

Source: McKinsey analysis; regional health system data

Time is muscle-Door to Balloon time



- ED physician activates
- Single-call activation system
- Response team is available within 20–30 minutes
- Prompt data feedback
- Senior management commitment
- Team based approach
- Paramedics perform pre-hospital tests

Maintaining Healthcare and Outcomes in Disasters

Continuity of Healthcare Operations

Healthcare entities will maintain operations during crises and will be able to implement rapid recovery principles if rendered inoperable

Delivery of Care

Medical surge is the capability, from point of injury or illness through the medical system, to rapidly expand the ability to triage, diagnosis, treat and disposition presenting patients from the crisis and all other non-event related patients

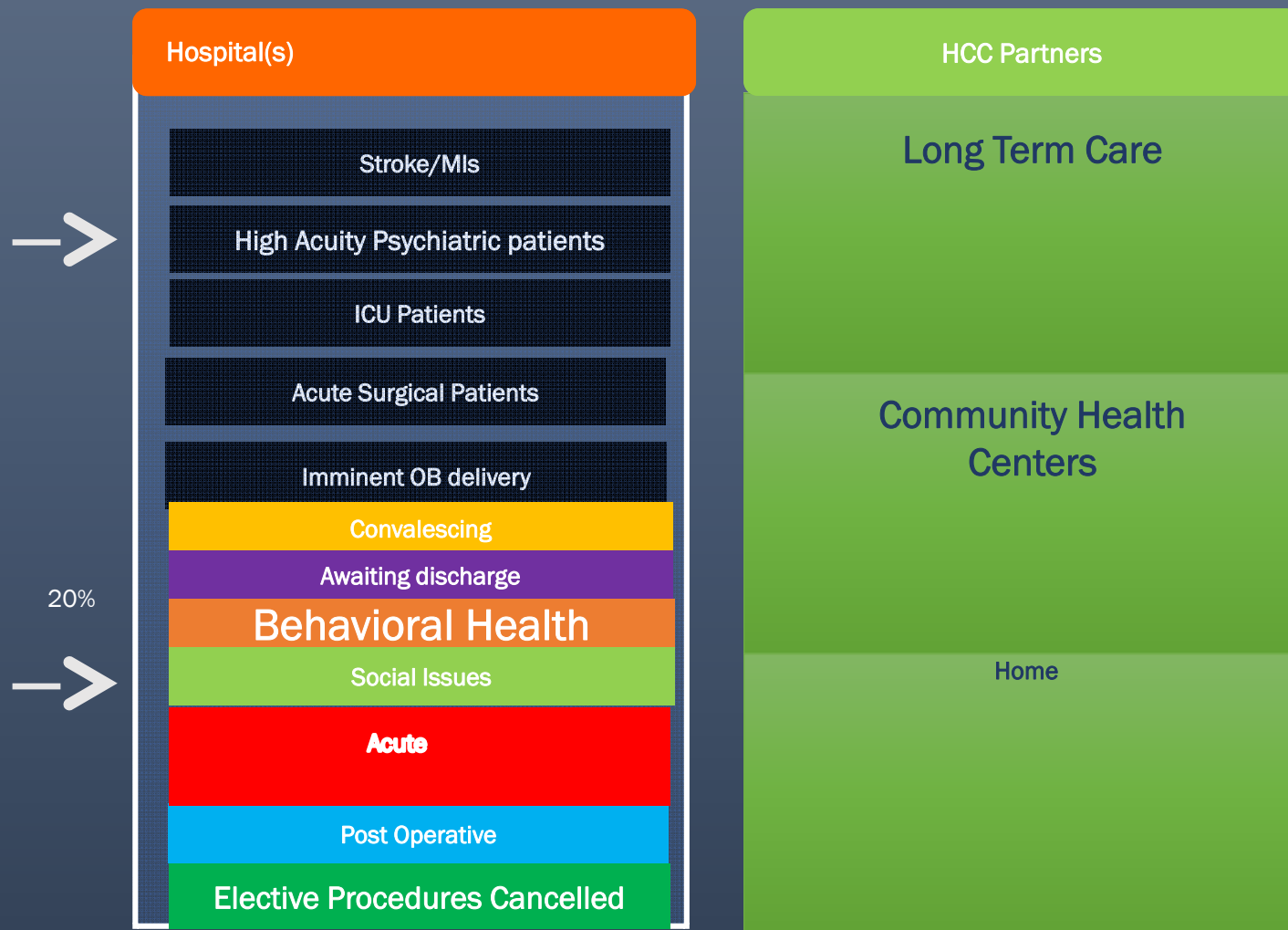
Immediate Bed Availability (IBA)

- The ability of a healthcare community to provide no less than 20% bed availability of staffed members' beds within four hours of a disaster

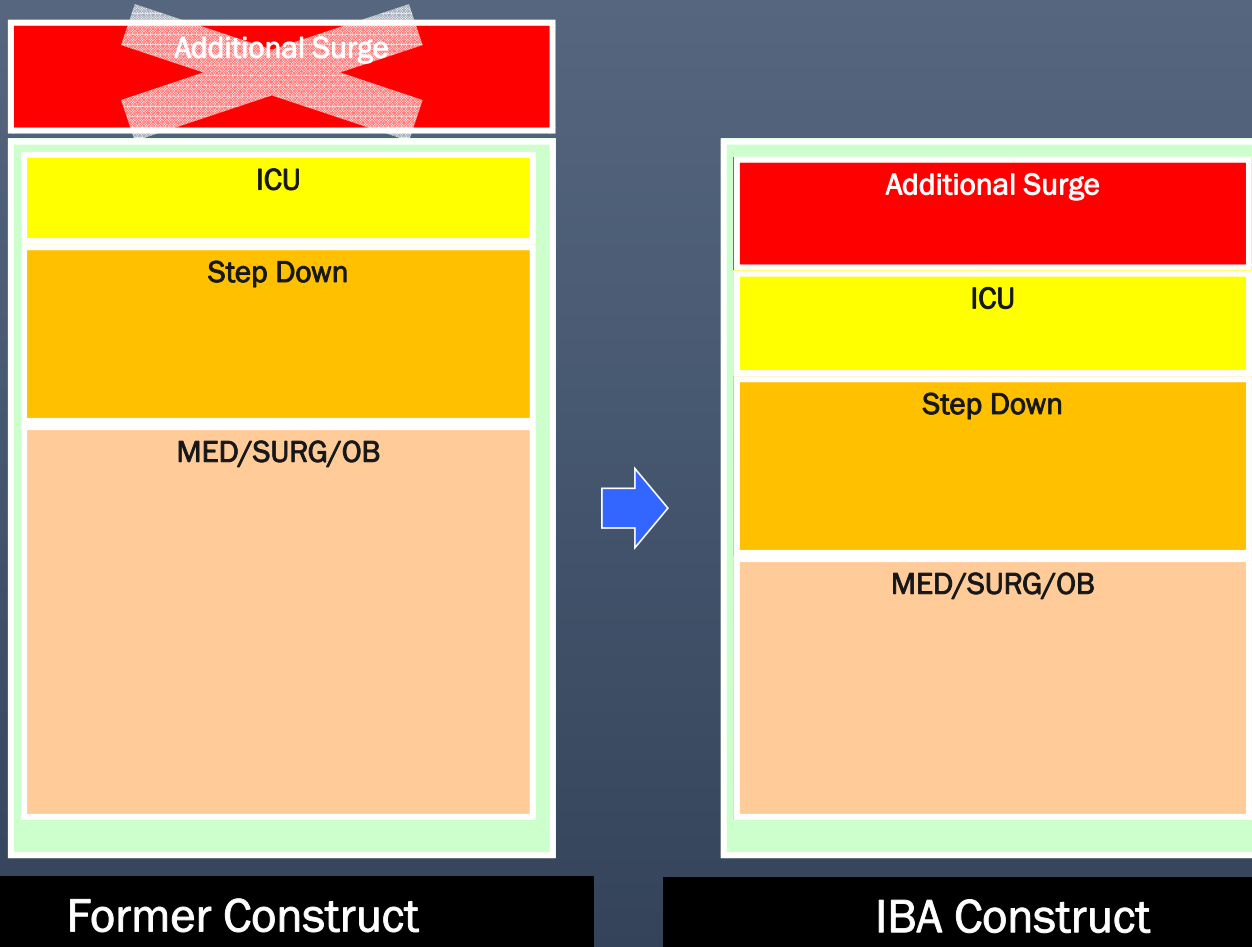
IBA

- Evidence informed
- Operationally tenable
- Economically sustainable
- Ethically grounded

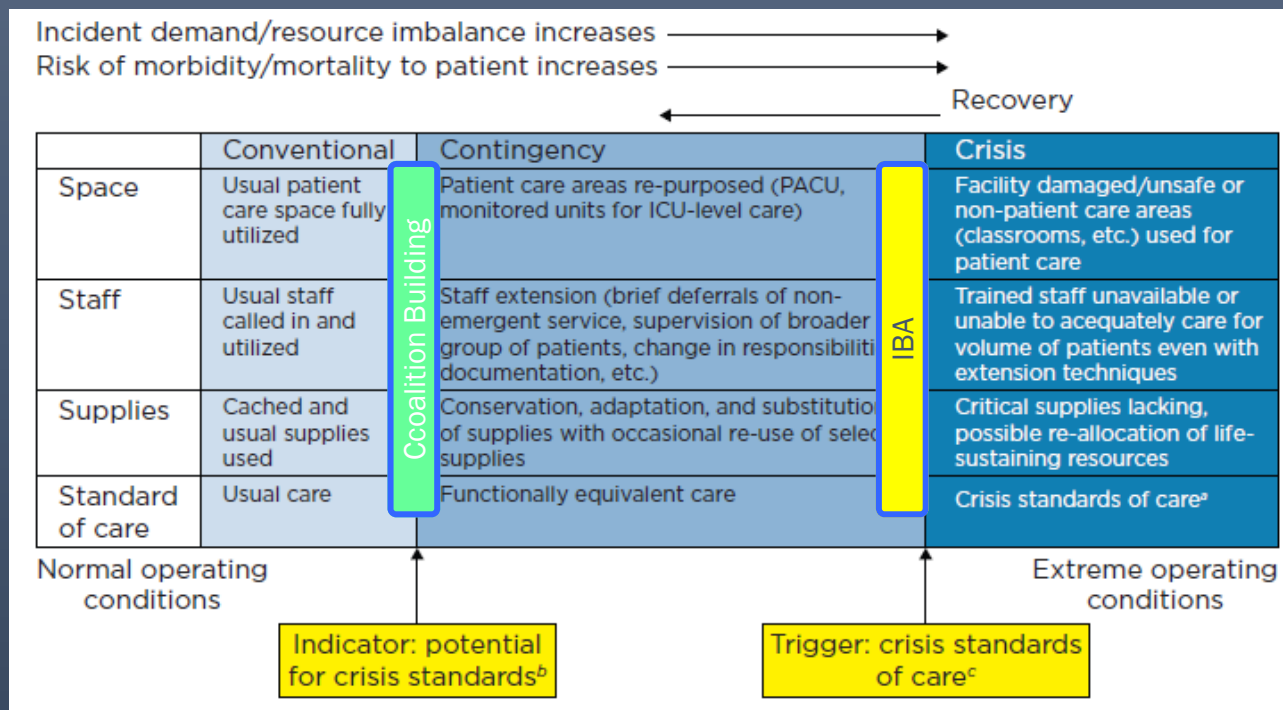
Immediate Bed Availability



Immediate Bed Availability: Making Room within the System

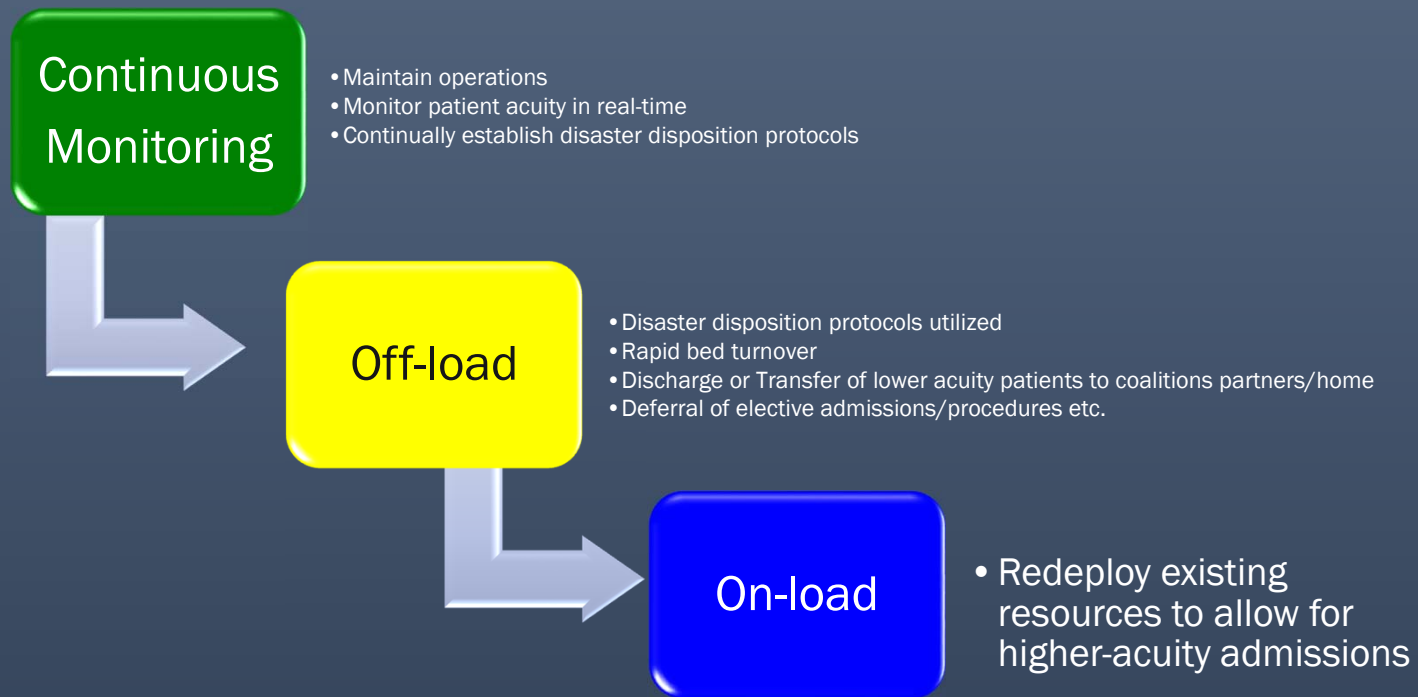


Institute of Medicine Crisis Standards of Care



Source: IOM Crisis Standards of Care Report

IBA



Madrid bombing

- Coordinated near-simultaneous attacks targeting commuter trains
- 191 dead
- More than 1,800 injured



- 1000 acute care beds/healthcare systems
- 20% IBA=200 beds immediately avail/system
- 100 healthcare systems in the United States
- Madrid = 2,000 patients=10 systems engaged
- Across the U.S., 20,000 beds available—immediately

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Medicaid/CHIP

Medicare-Medicaid
Coordination

Private
Insurance

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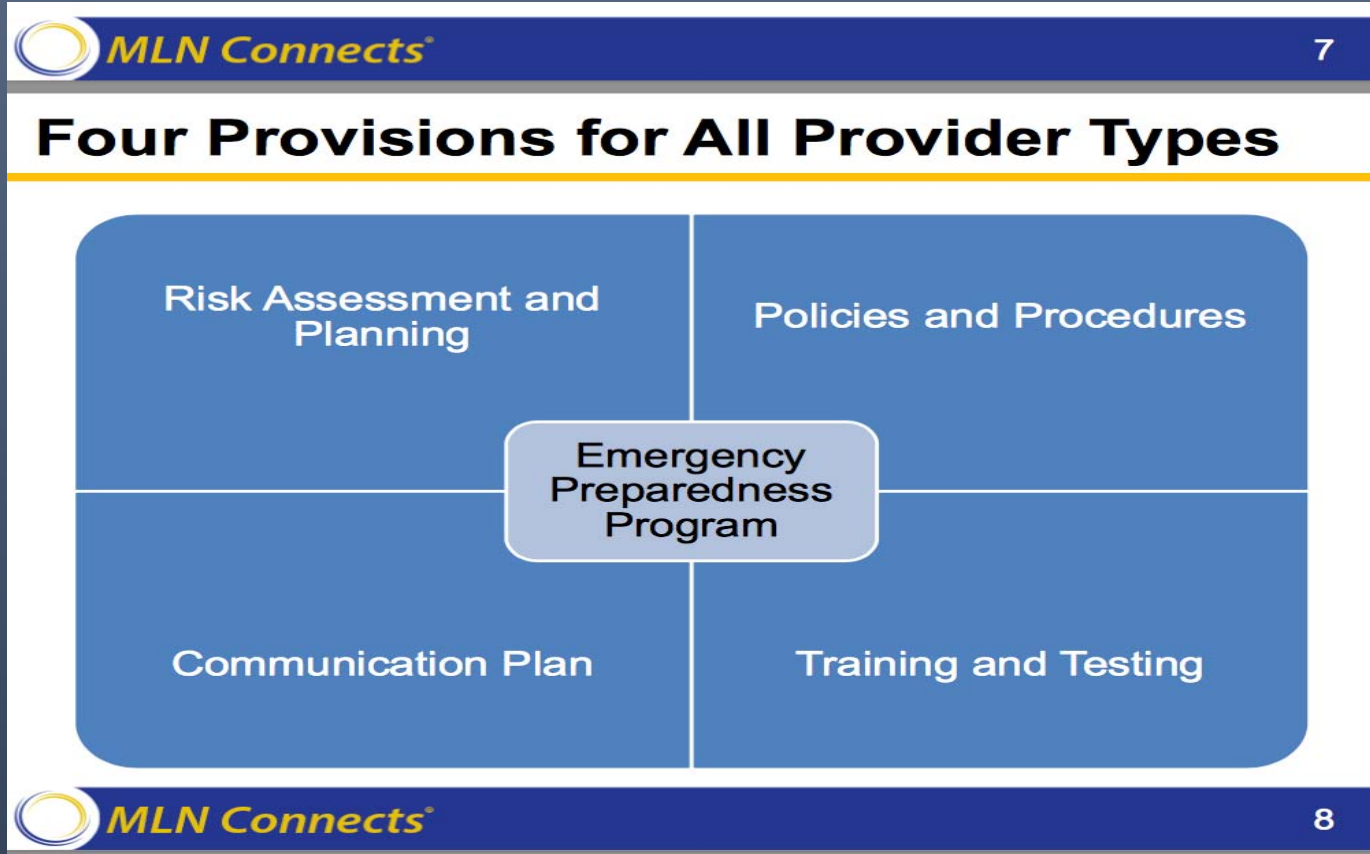
CMS finalizes rule to bolster emergency preparedness of certain facilities participating in Medicare and Medicaid

Date	2016-09-08
Title	CMS finalizes rule to bolster emergency preparedness of certain facilities participating in Medicare and Medicaid
Contact	press@cms.hhs.gov

CMS finalizes rule to bolster emergency preparedness of certain facilities participating in Medicare and Medicaid

Today, the Centers for Medicare & Medicaid Services (CMS) [finalized a rule](#) to establish consistent emergency

CMS Emergency Preparedness Rule



CMS Emergency Preparedness Rule

- **Emergency plan:** Based on a risk assessment, develop an emergency plan using an all hazards approach focusing on capacities and capabilities that are critical to preparedness for a full spectrum of emergencies or disasters specific to the location of a provider or supplier.
- **Policies and procedures:** Develop and implement policies and procedures based on the plan and risk assessment.
- **Communication plan:** Develop and maintain a communication plan that complies with both Federal and State law. Patient care must be well-coordinated within the facility, across health care providers, and with State and local public health departments and emergency systems.
- **Training and testing program:** Develop and maintain training and testing programs, including initial and annual trainings, and conduct drills and exercises or participate in an actual incident that tests the plan.

Health Affairs Blog

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Health, Economics, And Preparedness: Considerations And Paths Forward

David Marcozzi and Benoit Stryckman

September 14, 2015



Centers for Medicare Medicaid Services (CMS) Proposed Rule: Medicare Program: Request for Information Regarding Implementation of the Merit Based Incentive Payment System, Promotion of Alternative Payment Models, and Incentive Payments for Participation in Eligible Alternative Payment Models

Your Voice in Federal Decision-Making Advanced Search

C DC -- Marcozzi, David

This is a Comment on the **Centers for Medicare Medicaid Services (CMS) Proposed Rule: Medicare Program: Request for Information Regarding Implementation of the Merit Based Incentive Payment System, Promotion of Alternative Payment Models, and Incentive Payments for Participation in Eligible Alternative Payment Models**

For related information, [Open Docket Folder](#)

Comment Period Closed
Nov 17 2015, at 11:59 PM ET

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Comment

Request for Information Regarding Implementation of the Merit-based Incentive Payment System, Promotion of Alternative Payment Models, and Incentive Payments for Participation in Eligible Alternative Payment Models

In light of the recent Blue Ribbon Panel on Biodefense Report (<http://www.biodefensestudy.org>) and multiple disasters including the recent mass casualty in Paris, this comment is being submitted for consideration as an emergency preparedness and/or safety clinical practice improvement activity for hospital based APMs.




Today's healthcare system has limited in-patient capacity. The lean and "just in time" hospital approach to staffing and resources remains at odds with disaster readiness and medical surge. As a result of these challenges, a new model for medical surge was created--Immediate Bed Availability (IBA). This measure is a patient-centered, population health based approach to delivering care in crisis and is consistent with the Institute of Medicine's work on crisis standards of care (<http://iom.nationalacademies.org/Reports/2012/Crisis-Standards-of-Care-A-Systems-Framework-for-Catastrophic-Disaster-Response.aspx>). Immediate Bed Availability builds and measures community resilience, weaving a thread of preparedness within our daily healthcare delivery construct. Grounded on operational, economic, academic and ethical tenants, IBA sets clear requirements for healthcare systems and/or hospital based APMs to care for victims of a mass casualty.

IBA is defined as the ability of a healthcare system to make available, within four hours, up to 20% of staffed in-patient beds to higher acuity patients during a disaster.

The measure's foundations are built on lessons learned from prior disasters and are applicable to no-notice emergencies and long-term crises such as a pandemic. Operationally, the 4 pillars of IBA are: 1) To constantly assess in-patient census acuity and maintain disaster discharge plans for all admitted patients, 2) the ability to rapidly (within 4 hours) offload up to 20% of lower acuity in-patients from the hospital to other healthcare or home settings safely, 3) to be able to receive and care for higher acuity patients within the in-patient setting and 4) to track and document patient movement.

Immediate Bed Availability was presented to the National Quality Forum (http://www.qualityforum.org/Projects/n-r/Regionalized_Emergency_Medical_Services/Draft_Report.aspx) and the Institute of Medicine, with support as a potential promising measure for disaster preparedness. Referenced several times in the NQF report, recommendation #14 states, "... quantitative measures of process and outcome should be combined with the more subjective assessments of preparedness and response and focus on specific objectives (i.e. were the goals of immediate bed availability met objectively) or outcomes, such as having similar risk-adjusted outcomes during a disaster, which would indicate that a facility would having the flexibility to maintain the same standard of care during a crisis."

Attachments (1)

 IBA cont.
View Attachment:  

A NATIONAL BLUEPRINT FOR BIODEFENSE:

LEADERSHIP AND MAJOR REFORM
NEEDED TO OPTIMIZE EFFORTS

BIPARTISAN REPORT OF THE BLUE RIBBON
STUDY PANEL ON BIODEFENSE
October 2015



Institutional Sponsors:

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Recommendation 20

Provide the financial incentives hospitals need to prepare for biological events. Preparedness must be included within the health delivery reform efforts of CMS and private sector payers. Bioterrorism and highly infectious disease preparedness should be required for accreditation and the CMS funding that comes with it. Any financing strategy must be realistic, but must also account for all contingencies and associated hospital planning requirements.

ACTION ITEMS:

- a. **Adopt a disaster preparedness portfolio.** The Administrator of CMS, in conjunction with ASPR, should seek the endorsement of the National Quality Forum and adopt, as part of its health delivery reform efforts, a disaster preparedness portfolio that includes Conditions of Participation, Interpretive Guidance, measures development for inclusion within value-based purchasing, and innovation projects. Preparedness measures should be included in the evolving Merit-Based Incentive Payment System program and link community, supplier, and provider resilience efforts to reimbursement and incentives.
- b. **Link Centers for Medicare and Medicaid Services incentives and reimbursement to new accreditation standards.** Congress should authorize CMS to provide funding to those hospitals that meet these new accreditation standards for bioterrorism preparedness and preparedness for other highly infectious disease events.

Recommendation 21

Establish a biodefense hospital system. Hospitals are already stratified according to their abilities to treat patients according to various specialties. Applying this same approach to biodefense will result in better patient treatment, improved occupational health and safety, and more realistic expectations of hospitals.

ACTION ITEMS:

- a. **Stratify hospitals.** The Secretary of Health and Human Services should establish a stratified system of hospitals with increasing levels of capability to treat patients affected by bioterrorism and other events involving highly pathogenic infectious diseases. A categorical rather than disease-specific approach should be used. Where possible, the Secretary should add biodefense responsibilities to Accountable Care Organizations, trauma centers, and hospital coalitions to expand their capabilities.
- b. **Develop accreditation standards for each stratum.** The Administrator of CMS should develop accreditation standards by or with the Joint Commission, Det Norske Veritas, Health Facilities Accreditation Program, and Center for Improvement in Healthcare Quality, as well as certification and licensure associated with each level.
- c. **Associate Centers for Medicare and Medicaid Services funding.** The Administrator of CMS should associate hospital funding with the ability to meet these accreditation standards for each stratum.

Summary

- Public and private resources, roles, and responsibilities for national health resiliency will continue to evolve relative to political will, the fiscal climate, and the frequency and scale of disasters.
- Health care organizations, insurers, communities, and the nation can improve health and health care delivery in disasters by using innovative strategies that incentivize and finance quality efforts for care during crisis
- Payers, providers, and health care communities can link preparedness to day-to-day activities, capitalize on economies of scale, and develop regional value-based models for sustaining emergency preparedness.

Thank you.

