Welcome

- Laptops and cell phones
  - *Wi-Fi network*
    - User name “guest”
    - Password “NQFguest”

NATIONAL QUALITY FORUM

Trauma Outcomes

In-Person Meeting
1030 15th St, NW
Washington, DC 2005

October 15, 2018

Over 400 Members Strong

NQF Project Staff

- John Bernot, MD, Senior Vice President for Quality Measurement Initiatives
- Andrew Lyzenga, MPP, Senior Director
- Jean-Luc Tilly, Data Analytics Manager
- Christy Skipper, MS, Project Manager

Committee

- Carol Immermann, BSN, RN (Co-chair)
- Avery Nathens, MD, MPH, PhD, FACS (Co-chair)
- Robert Bass, MD, FACEP
- Derek Bergsten, Paramedic, CFO, CEMSO, CTO
- Bryan Collier, DO
- Joseph Cuschieri, MD
- James Eubanks, MD, FACS
- Alexander Garza, MD, MPH
- Michael Gonzalez, MD, FACEP, FAAEM
- Adil Haider, MD, MPH, FACS
- Kurt Hoppe, MD
- Elliott Haut, MD, PhD, FACS
- Gregory Hawryluk, MD, PhD, FRCSC
- David Livingston, MD
- Barry Markman, MD, MBA, FACS
- Linda Melillo, MA, MS, CPHRM, CPXP
- Anna Miller, MD, FACS
- Sage Myers, MD, MSCE
- Craig Newgard, MD, MPH
- Jack Sava, MD
- Andrew Schrag, MBA, MA, LPCS
- David Seidenwurm, MD, FACR
- Theresa Snavely, MSN, RN
- Peter Thomas, JD
- Garth Utter, MD, MSc

Federal Liaisons (Non-Voting Committee Representatives)

- Centers for Medicare & Medicaid Services
  - Nina Heggs
  - David Jefferson
- HHS Office of the Assistant Secretary for Preparedness and Response
  - Brendan Carr
  - Jessica Couillard

Meeting Objectives

- Review themes of relevant environmental scan findings and how they inform a measurement framework
- Provide guidance on key considerations related to measurement of trauma care, including the need for population-level measures and the relationship between trauma and nontrauma entities who are involved in the longitudinal care of trauma patients
- Begin discussion of measurement framework domains and subdomains

Ground Rules

- Open sharing of, and respect for, differing views
- Work toward defined meeting objectives
  - Staff will maintain a list of important but out of scope parking lot issues
- Place your nametag vertically to be acknowledged to speak
- Always use your microphone for the benefit of remote participants and the transcript
- Members of the public will have the opportunity to provide comments

Overview of Trauma Outcomes Project

Project Objectives

- Convene a multistakeholder committee to guide and provide input and direction on the environmental scan for measures/concepts and to identify measurement gaps
- Develop a measurement framework informed by the environmental scan
  - Accountability
  - Attribution
  - Risk adjustment
- Develop a written report summarizing the finalized environmental scan, the measurement framework, and committee discussion

Environmental Scan vs Measurement Framework

Environmental Scan	Measurement Framework
Review of existing literature, measures, and measure concepts	A conceptual model for organizing ideas about what is important to measure for a topic area and how measurement should take place
Provides a comprehensive, summary overview of the field as it stands currently	A future-facing document containing both existing and aspirational components
Serves a foundation for the development of the Measurement Framework	Built on existing literature and expertise, but not bound by current publications

Scan Findings

Environmental Scan Findings: Measures and Concepts

- 89 measures found
  - Reasons for removal
    - » Exclusions
    - » Not trauma focused

- 41 measures
  - 25 process
  - 9 structural
  - 4 outcome
  - 3 efficiency

None of the measures identified assessed population-level outcomes for regional trauma systems

Environmental Scan Findings: Measures and Concepts

Measures

- American College of Emergency Physicians – 6
- American College of Surgeons - 7
- CMS Measure Inventory – 4
- EMS Compass - 4
- Emergency Medical Services for Children -9
- University of Minnesota Rural Health Research Center - 7
- Indian Health Service (1), National Committee for Quality Assurance (1), RAND Corporation (1), UNC Chapel Hill (1)

Environmental Scan Findings: Measures and Concepts

Concepts

- ACS TQIP Guidelines – 112
- EAST Guidelines – 49
- Victorian State Trauma System – 12
- Model Trauma System Planning and Evaluation handbook – 11
- National Trauma Data Bank – 8
- American Association of Blood Banks – 5
- Tactical Combat Casualty Care Guidelines – 2
- Literature
  - *Gruen et al. - 19*

Environmental Scan Findings: Measures and Concepts (con't)

- 238 concepts found
  - Reasons for removal
    - » Existing measure
    - » Duplicate concept
- 216 included
  - EAST and ACS TQIP guidelines
  - Evaluation of trauma systems
  - Specific injury or condition
    - » Orthopedic, TBI
  - Specific populations
    - » Geriatric, pediatric

Environmental Scan Findings: Scales and Tools

- Quality of life
  - *SF-12, SF-36*
- Patient reported outcomes
  - *GOS-E, EQ 5D*
- Pediatric
  - *King's Outcome Scale for Childhood Head Injury*
- Clinical Areas
  - *Musculoskeletal, Traumatic brain injury*
- Rehabilitation
  - *Rehabilitation Complexity Scale*

Environmental Scan Findings: Data Sources

Population level datasets

- Broad and represent large cohorts of patients, often at the national level (vital health data and statistics sets)
- Can be used for geospatial analysis and sociodemographic purposes
- Slow to be updated
- Rarely, if ever, trauma specific

Environmental Scan Findings: Data Sources

Event-based datasets/registry data

- Finer level of detail
- Can be trauma specific (National Trauma Databank [NTDB], National Emergency Medicine Services Information System [NEMSIS])
- Can be national, but not comprehensive (i.e., Voluntary participation)
- Voluntary nature can contribute to data bias (i.e., Larger, wealthier institutions have the resources to contribute)
- Patient level data often not stored – cannot tell if one patient was in the database 4 times or 4 patients in one time

Environmental Scan Findings: Data Sources

Patient level data

- Most granular level of data
- Common examples are: electronic health record (EHR), claims, paper records, data collection instruments/surveys
- Commonly used to evaluate outcomes and quality measures
- Despite level of granularity, data lacks standardization and is often not interoperable between stakeholders

Large Group Discussion #1

Large Group Discussion Questions

- Are there existing papers, measures, or measure concepts that were not adequately covered by the environmental scan?

- Does the environmental scan provide an accurate overview and foundation for this project? If not, what is missing?

Key Terms: Attribution

- Attribution refers to the methodology used to assign patients and their quality outcomes to providers, clinicians, or other accountable entities.

Environmental Scan: Attribution

- Measures identified are largely focused on individual aspects of the trauma care continuum.
- Data limitations pose a challenge to population-level measurement of outcomes.

Breakout Discussion #1 - Attribution

Breakout #1 Discussion Questions - Attribution

- What levels of attribution are most important for trauma outcomes?
- How can measurement best promote shared accountability?

10:30 am
BREAK

Breakout #1 Report Back

Environmental Scan Findings: Risk Adjustment

- Risk adjustment is virtually systematically applied to outcome measures used as benchmarks
- Suggestion that risk adjustment not needed for internal QI
- NSQIP, TQIP use risk-adjustment methodology

Environmental Scan Findings: Risk Adjustment

- Clinical risk-adjustment factors typically include:
  - Blood pressure
  - Pulse
  - Presence of a spinal injury
  - Injury Severity Score
  - Ventilator use
  - Other comorbidities
- Demographic risk-adjustment factors typically include
  - Age
  - Gender
  - Race (rare)

Socioeconomic status risk adjustment not identified

Environmental Scan Findings: Risk Adjustment

- Some debate over validity of different risk-adjustment methodologies
  - Injury Severity Score alternatives such as TRAM, TMPM use more specific clinical factors to offer a more precise adjustment for mortality
  - A considerable portion of published articles evaluating trauma outcomes did not use appropriate risk-adjustment

Breakout Discussion #2 – Risk Adjustment

Breakout #2 Discussion Questions – Risk Adjustment

- What are the data sources needed for the measurement framework?
- What are the advantages of each data source? Disadvantages?

Breakout #2 Report Back

12:00 pm
LUNCH

Measurement Framework

Environmental Scan vs Measurement Framework

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Measurement Framework

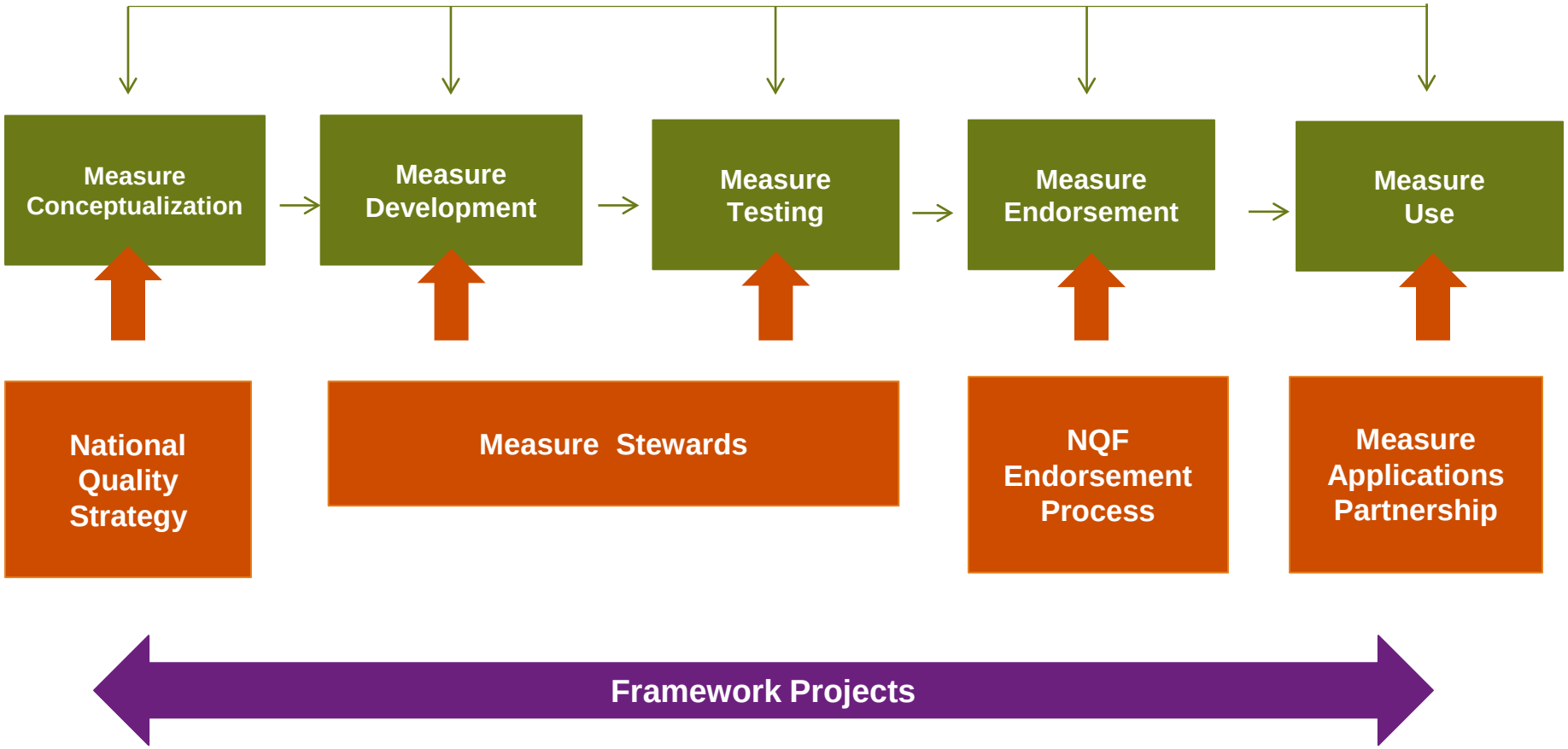
- A Measurement Framework is a conceptual model for organizing ideas about what is important to measure for a topic area and how measurement should take place
  - Frameworks provide a structure for organizing currently available measures, areas where gaps in measurement exist, and prioritization for future measure development.
  - Measurement framework domains and subdomains are essential categories (domains) and subcategories (subdomains) needed to ensure comprehensive performance measurement for a topic area.

Proposed Framework for Trauma outcomes

Purpose:

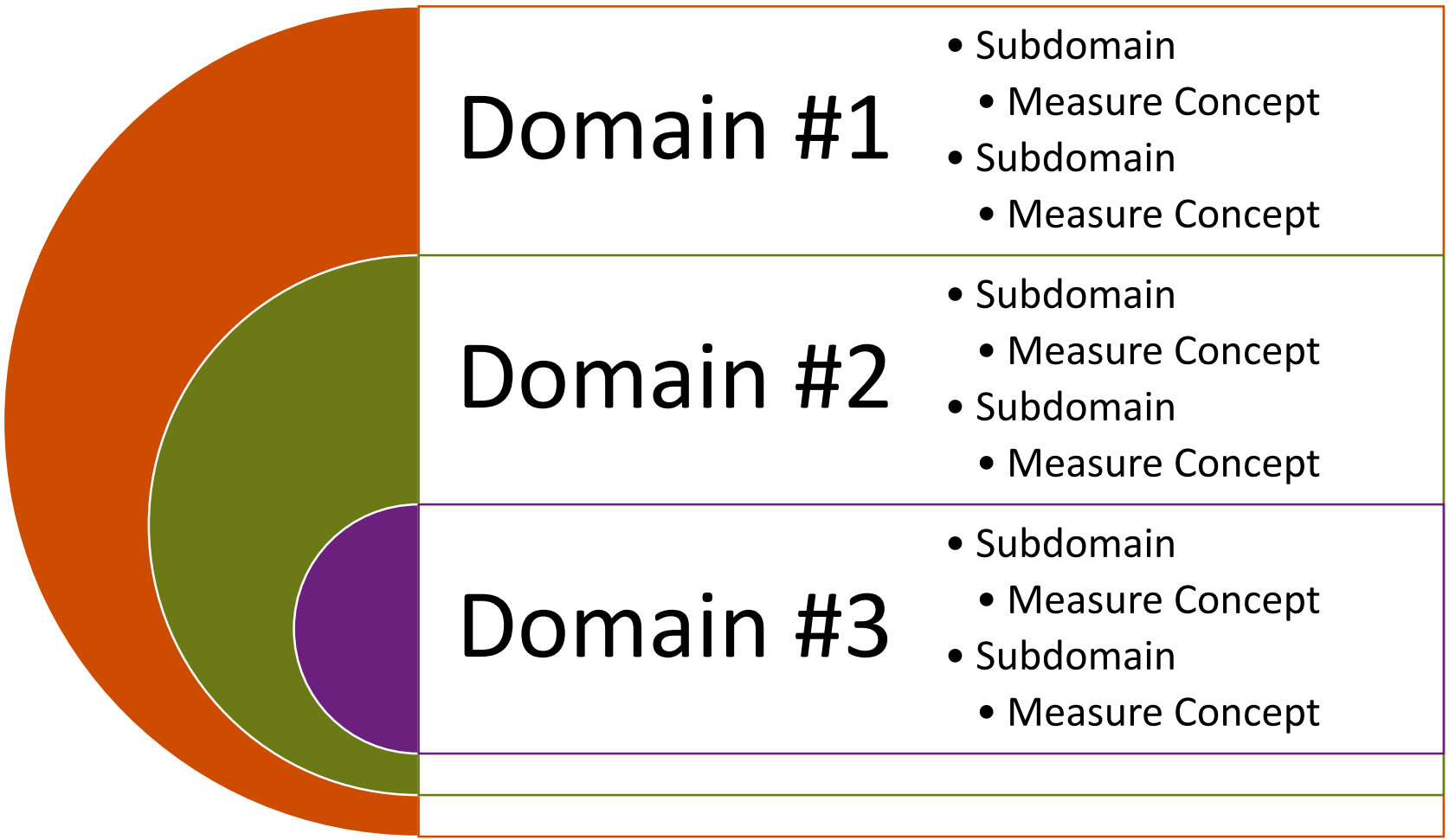
- To provide an organizational scheme for identifying and categorizing population-based outcome measure for trauma
- To facilitate systematic identification of measure gaps
- To facilitate systematic prioritization of measures and/or measurement areas
- To serve as a conceptual framework and guidance for future development of trauma-related measures

Framework Projects along the Measurement Spectrum



Definitions

- **Domain** is a categorization/grouping of high-level ideas and measure concepts that further describes the measurement framework.
- **Subdomain** is a smaller categorization/grouping within a domain.
- **Measure** is a fully developed metric that includes detailed specifications and may have undergone scientific testing.
- **Measure concept** is an idea for a measure that includes a description of the measure, including planned target and population.

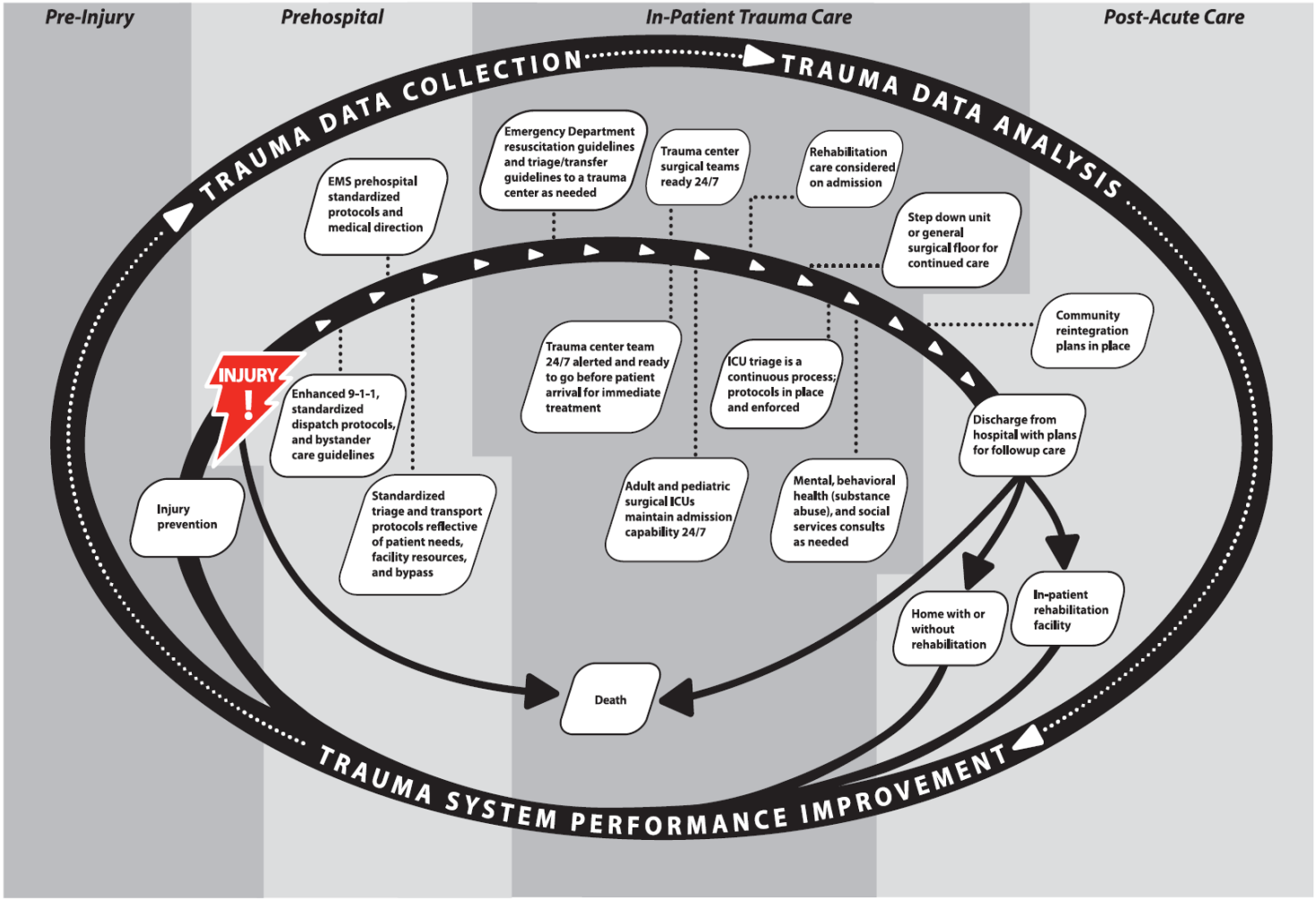

Domain #1
• Subdomain
• Measure Concept
• Subdomain
• Measure Concept
Domain #2
• Subdomain
• Measure Concept
• Subdomain
• Measure Concept
Domain #3
• Subdomain
• Measure Concept
• Subdomain
• Measure Concept

Example: Improving Diagnostic Quality and Safety

Domain	Subdomain
Patients, Families, and Caregivers	Patient Experience Patient Engagement
The Diagnostic Process	Information Gathering and Documentation Information Integration Information Interpretation Diagnostic Efficiency Diagnostic Accuracy Follow-Up
Organizational and Policy Opportunities	Diagnostic Quality Improvement Activities Access to Care and Diagnostic Services Workforce

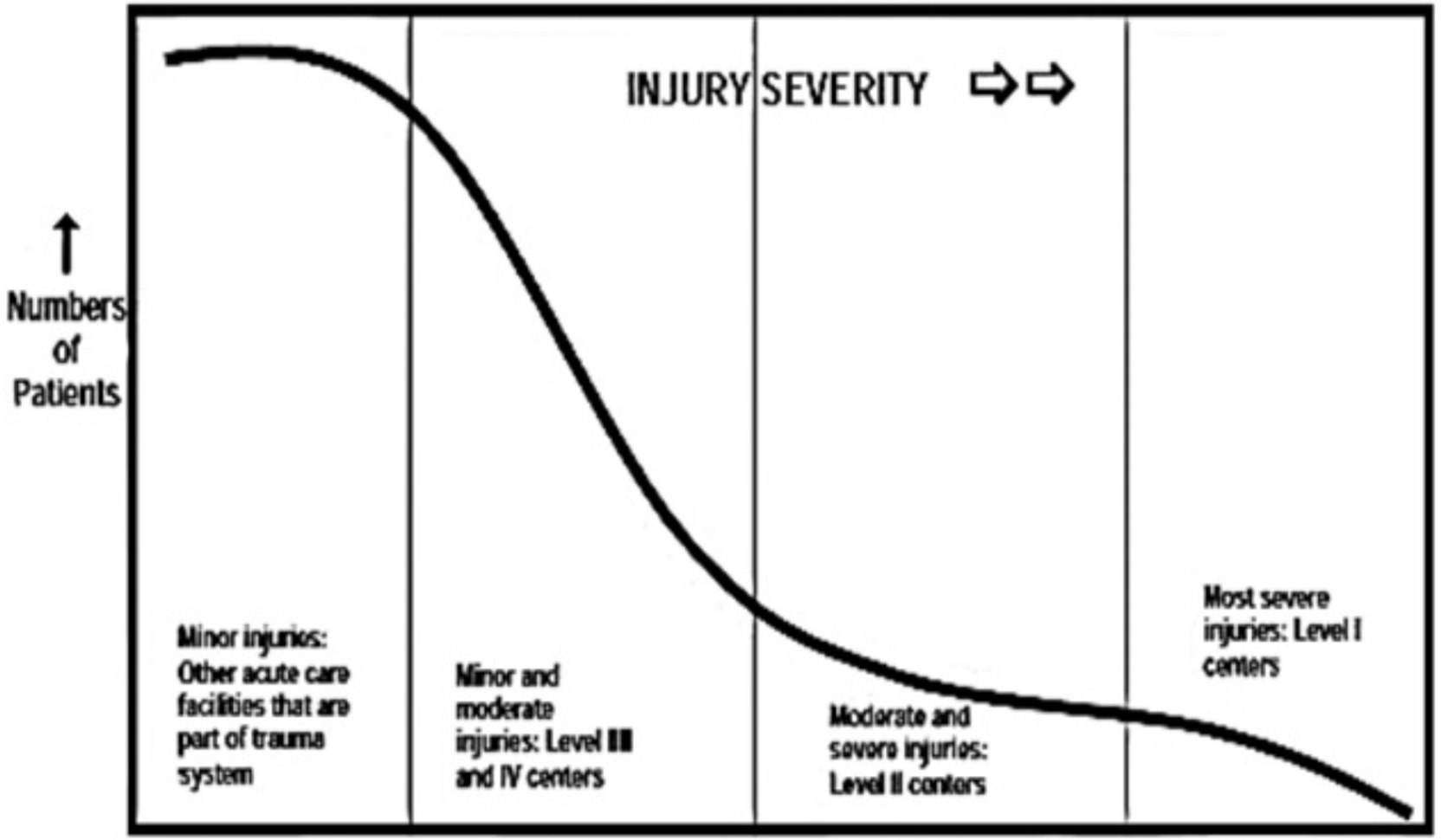
Example Framework Design: Domains

FIGURE 1. Phases of a Pre-Planned Trauma Care Continuum



Model Trauma System Planning and Evaluation

Example Framework Design: Domains



Example Framework Design: Domains

- Stelfox et al.
  - *Prehospital*
    - » e.g., field triage, EMS response time, pre-hospital deaths
  - *Hospital*
    - » e.g., 24-h CT scanner, ED time, hospital deaths
  - *Post Hospital*
    - » e.g., protocol for rehab referrals, rehab wait time, admission to LTC
  - *Secondary Injury Prevention*
    - » e.g., ASBI program, alcohol recidivism, recurrent injuries

Example Framework Design: Domains

WHO Six phases of trauma care management

- Triage
- Primary Survey & Resuscitation
- Secondary Survey
- Stabilization
- Transfer
- Definitive Care

Breakout Discussion #3 - Domains

Breakout #3 Discussion Questions – Domains

- What are the most important aspects of trauma care that should be measured?
- What are the things that can be measured now?
- Taking into consideration the environmental scan and your expert opinion, what domains would best represent a measurement framework for trauma outcomes?

Breakout #3 Report Back

Breakout Discussion #4 — Subdomains

Breakout #4 Discussion Questions – Subdomains

- What are the most important elements of the domains identified during the Domain Breakout group?
- What are the structures/process/outcomes that can be measured within these subdomains?
- What else is important?

Breakout #4 Report Back

Next Steps

Activity	Timing
Finalize environmental scan report	October 2018
Web Meeting #3	November 5, 2018
Web Meeting #4	November 29, 2018
Web Meeting #5	December 20, 2018
Web Meeting #6	January 23, 2018
30-Day Comment Period	February 4 – March 6, 2018
Web Meeting #7	March 18, 2018
Final report	May 22, 2019

Thank You