

# Nebraska State Trauma Symposium



## Rural Trauma

Richard Sidwell, MD FACS

July 25, 2025

[rsidwell@iowacclinic.com](mailto:rsidwell@iowacclinic.com)

# Disclosures

- None
- I am a true believer in what I have to say

# Trauma System - Definition

“... an organized approach to acutely injured patients in a defined geographical area that provides full and optimal care and that is integrated with the local or regional Emergency Medical Service (EMS) system.”

# Trauma Centers



## Level 1

- Comprehensive care for all injured patients
- Trauma quality improvement
- Regional & national leadership
- Regional resource for trauma care
- Trauma outreach, prevention, education
- Resident/fellow education
- Trauma research
- 112 standards that must be met

In Iowa: 2 (ACS verified)

- IMMC – Adult
- UIHC – Adult & Peds

# Trauma Centers



## Level 1

- Comprehensive care for all injured patients
- Trauma quality improvement
- Regional & national leadership
- Regional resource for trauma care
- Trauma outreach, prevention, education
- Resident/fellow education
- Trauma research
- 387 standards that must be met

In Nebraska: 2

# Trauma Centers



## Level 2

- Comprehensive (+/-) care for all injured patients
- Trauma quality improvement
- Regional leadership
- Trauma prevention, education

## In Iowa: 2 (ACS verified)

- Blank Children's Hospital
- Mercy – Adult & Peds (Des Moines)

# Trauma Centers

## Level 2



CHI Good Samaritan, Kearney

- Comprehensive (+/-) care for all injured patients
- Trauma quality improvement
- Regional leadership
- Trauma prevention, education

In Nebraska: 4

3 Adult

1 Pediatric

# Trauma Centers



## Level 3

- 24/7 general surgical capability
- 24/7 orthopedic surgical capability
- Trauma quality improvement

In Iowa: 14 (state verified)\*

\* Mercy, Council Bluffs = ACS verified

Note: no requirement for  
neurosurgical capability



# Trauma Centers

## Level 3

- 24/7 general surgical capability
- 24/7 orthopedic surgical capability
- Trauma quality improvement



Saint Francis Medical Center, Grand Island

In Nebraska: 7

Note: no requirement for  
neurosurgical capability

# Trauma Centers



## Level 4

- 24/7 emergency department
- Trauma quality improvement
- Transfer relationships
- Data submission

In Iowa: 101 (state verified)

# Trauma Centers



Kimball Health Services, Kimball

## Level 4

- 24/7 emergency department
- Trauma quality improvement
- Transfer relationships
- Data submission

In Nebraska: 39

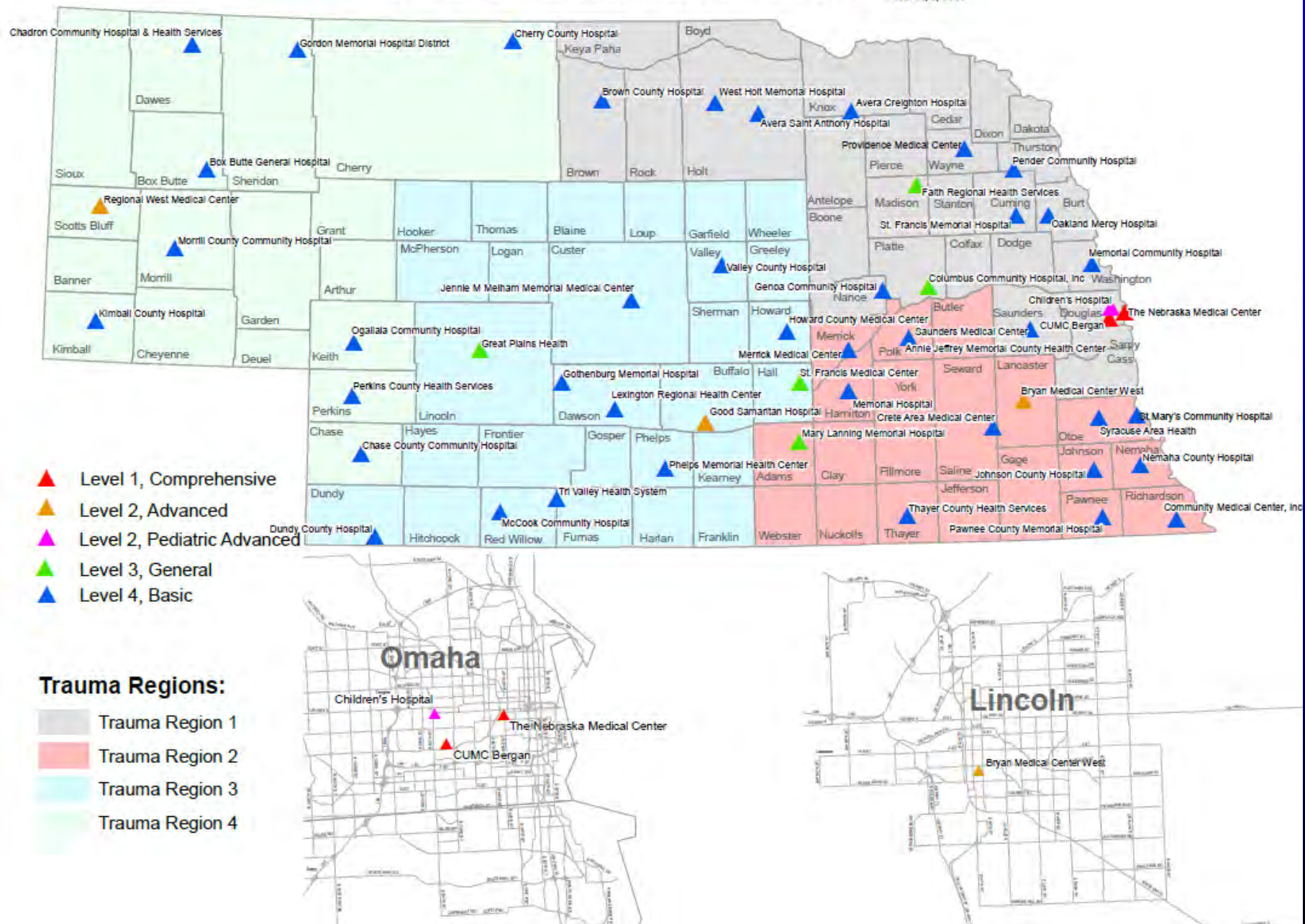
# Trauma Centers

## Level 4

- ~~24/7 emergency department~~
- ~~Trauma quality improvement~~
- ~~Transfer relationships~~
- ~~Data submission~~

In Nebraska: 64 Critical Access Hospitals

Date: 12/3/2019

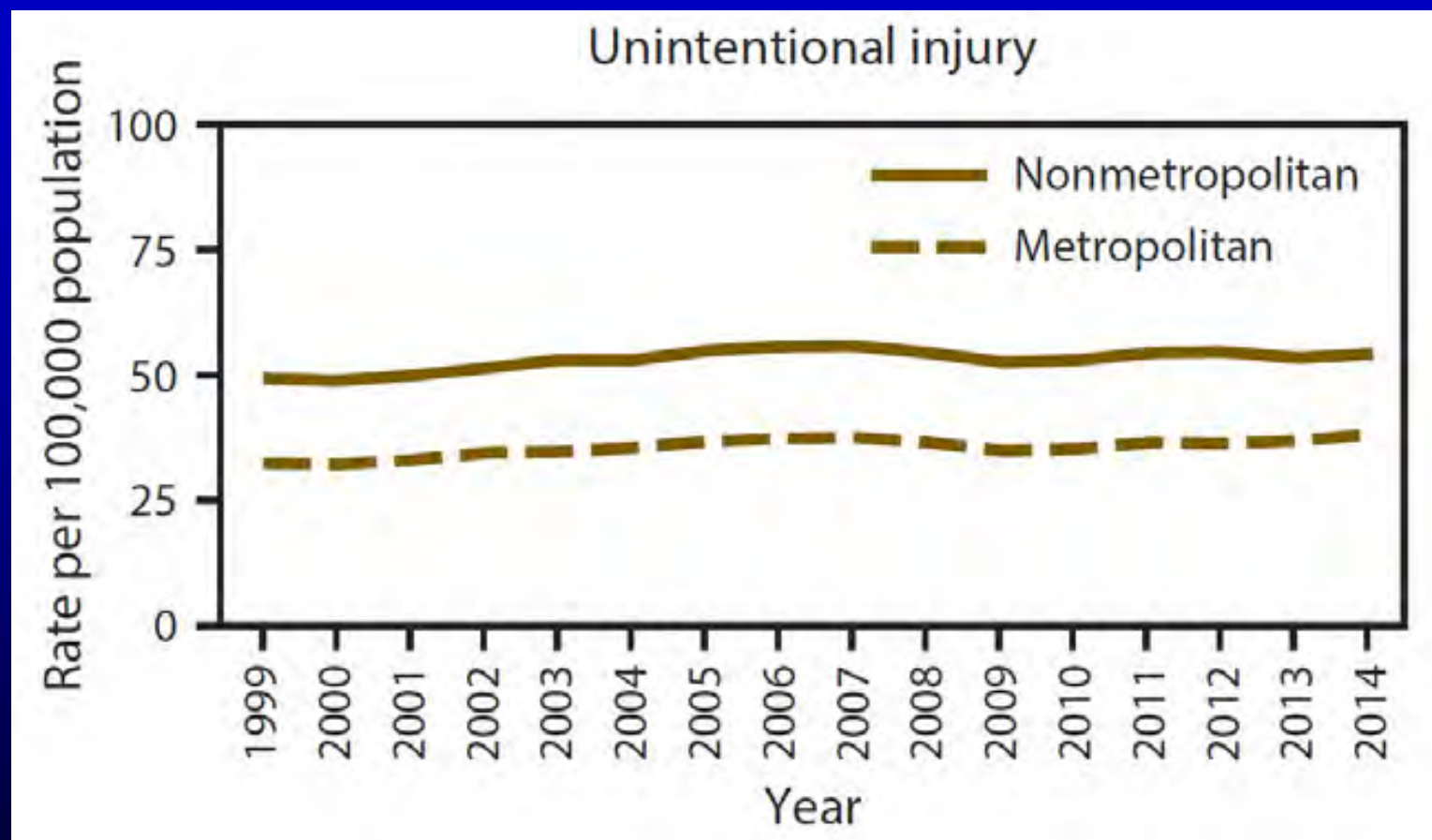




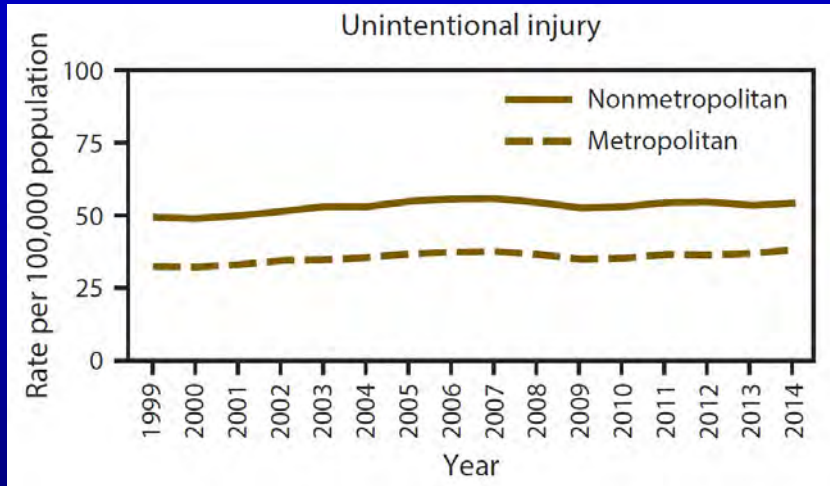
- In 2013, approximately 19% of the U.S. population lived in rural areas but accounted for 54% of all traffic fatalities
- The fatality rate per 100 million vehicle miles was 2.6 times higher in rural areas than urban ones



# Rural Trauma



# Rural Trauma



Age-adjusted death rates for unintentional injury were approximately 50% higher in nonmetropolitan areas than in metropolitan areas for most of this period.



# Rural Trauma

Rural patients  
are 40% more  
likely to die in  
the first 24  
hours after  
injury

A rural child is  
twice as likely to  
die from injury as  
a child in an urban  
environment

90% of urban  
trauma patients  
receive care in a  
trauma center; only  
40% of rural  
patients receive the  
same

# **What is a Level IV Trauma Center?**

# What a Level IV Trauma Center Isn't

- OSH
- Much smaller version of urban center



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**Important – Please Remember**

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# What is a Level IV Trauma Center?

Initial evaluation

Transfer to higher level  
of care



“...where the expectation is that the trauma providers are knowledgeable in the initial evaluation, stabilization, and rapid transfer of critically injured patient to higher levels of care.”

# What is a Level IV Hospital?

## OLD - “Orange Book” ACS-COT Criteria

- Institutional support
- Trauma team with activation policy
- Trauma-related CME - ATLS
- Resuscitation equipment in the ED
- **PIPS**
- Transfer agreements
- EMS training
- Trauma program with defined leadership (TMD)
- 24-hour physician or mid-level provider for the ED
- 24-hour lab & radiology
- Injury prevention
- **Data submission to registry**
- **Participation in regional trauma activities**
- **Collaboration with higher-level centers**

# **What is a Level IV Hospital?**

**New - “Grey Book” ACS-COT Criteria**

# What is a Level IV Trauma Center?



Considerable variability  
in capabilities of Level  
IV Hospitals

The presence or absence of *willing* general &  
orthopedic surgical capability is a major  
determinant of the care that a facility can provide

# **What is the Role of the Level IV Trauma Center?**



# Not the Role of Level IV Trauma Center

- Definitive evaluation
- Definitive care

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**Important – Please Remember**

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# **Role of Level IV Trauma Center: Initial Assessment & Transfer**

- Primary survey
  - Secure airway
  - Chest tube – maybe
  - IV access – balanced resuscitation
  - Pelvic wrap
- Minimize delays, unnecessary studies
- Rapid recognition of need for transfer
- Clear communication with trauma center
- Performance improvement

**No Surgical Capability + Catastrophic Patient**

# The Top 10 Rural MCI Events

- |                          |                   |
|--------------------------|-------------------|
| 1. Motor vehicle crashes | 6. Tornado        |
| 2. Severe weather        | 7. Power failure  |
| 3. Bus crash             | 8. Gunshot wounds |
| 4. Infectious outbreak   | 9. Structure fire |
| 5. Hazmat event          | 10. Heat wave     |

## OBSERVATIONS

# The Top 10 Rural MCI Events

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## OBSERVATIONS

- Ordinary events
- 3/10 = weather
- 2/10 = road traffic
- Power failure = no casualties

# The Top 10 Rural MCI Events

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**Lesson 1: “All Hazards”  
Planning is Necessary**

# Bellevue, IA July 4, 2010

- Incident Command established
- Doctor & nurse preformed field triage
- Mutual Aid: EMS units responded from around the region
- 25 victims
  - 4 hospitals
  - 4 counties
  - 1 fatality

**Lesson 4:**  
**Have you heard  
of RMOCCs?**



Photo Credit: Katie Schweiger from Maquoketa

“A trauma system is more than a  
collection of trauma centers.”

John Armstrong, MD FACS



# 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

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

*Donald Borwick, Autumn Downey, and Elizabeth Cornett, Editors*

*Board on Health Sciences Policy*

*Board on the Health of Select Populations*

*Health and Medicine Division*

*The National Academies of*  
**SCIENCES • ENGINEERING • MEDICINE**

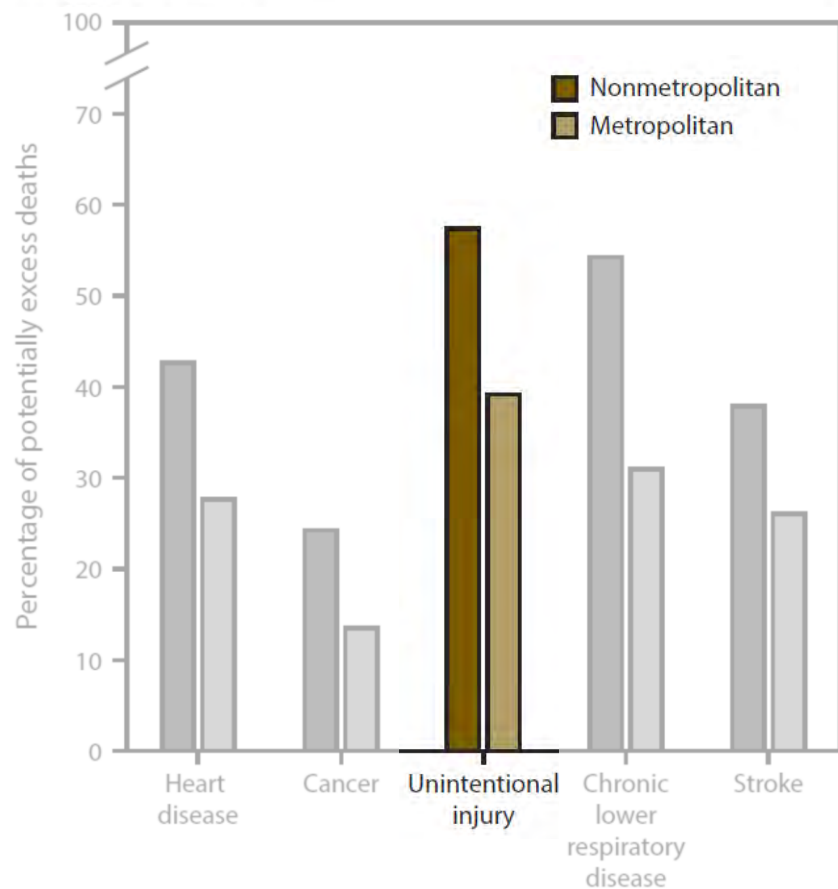
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Washington, DC

[www.nap.edu](http://www.nap.edu)

# Rural Trauma: Preventable Deaths

FIGURE 4. Percentage of potentially excess deaths\* among persons aged <80 years for five leading causes of death in nonmetropolitan and metropolitan areas† — National Vital Statistics System, United States, 2014



## “Potential Excess Death”

- Age < 80
- Rate higher than 3 best states (benchmark)

Urban: 39.2%

Rural: 57.5%

## Background

Rural communities are uniquely challenged in addressing the needs of injured patients and providers

Historically, the COT has not had adequate rural provider representation

## First Official Meeting

**January 2022**

*(meets quarterly)*

COMMITTEE ON TRAUMA

# Rural Advisory Council (RAC)

## 14 Members

Surgeons

ED physicians

Family Medicine

Nurses

Advanced Practice Providers

EMS

State TPM

CRNA

## Topics Covered

Rural needs

Verification/Standards

Education (ATLS, STB)

Pediatric readiness

## Background

Rural communities are uniquely challenged in addressing the needs of injured patients and providers

Historically, the COT has not had adequate rural provider representation

## First Official Meeting

**August 2024**

*(meets quarterly)*

COMMITTEE ON TRAUMA

# Rural Advisory Council v2.0

## 36 Members

Surgeons

ED physicians

Family Medicine

Nurses

Advanced Practice Providers

EMS

State TPM

CRNA

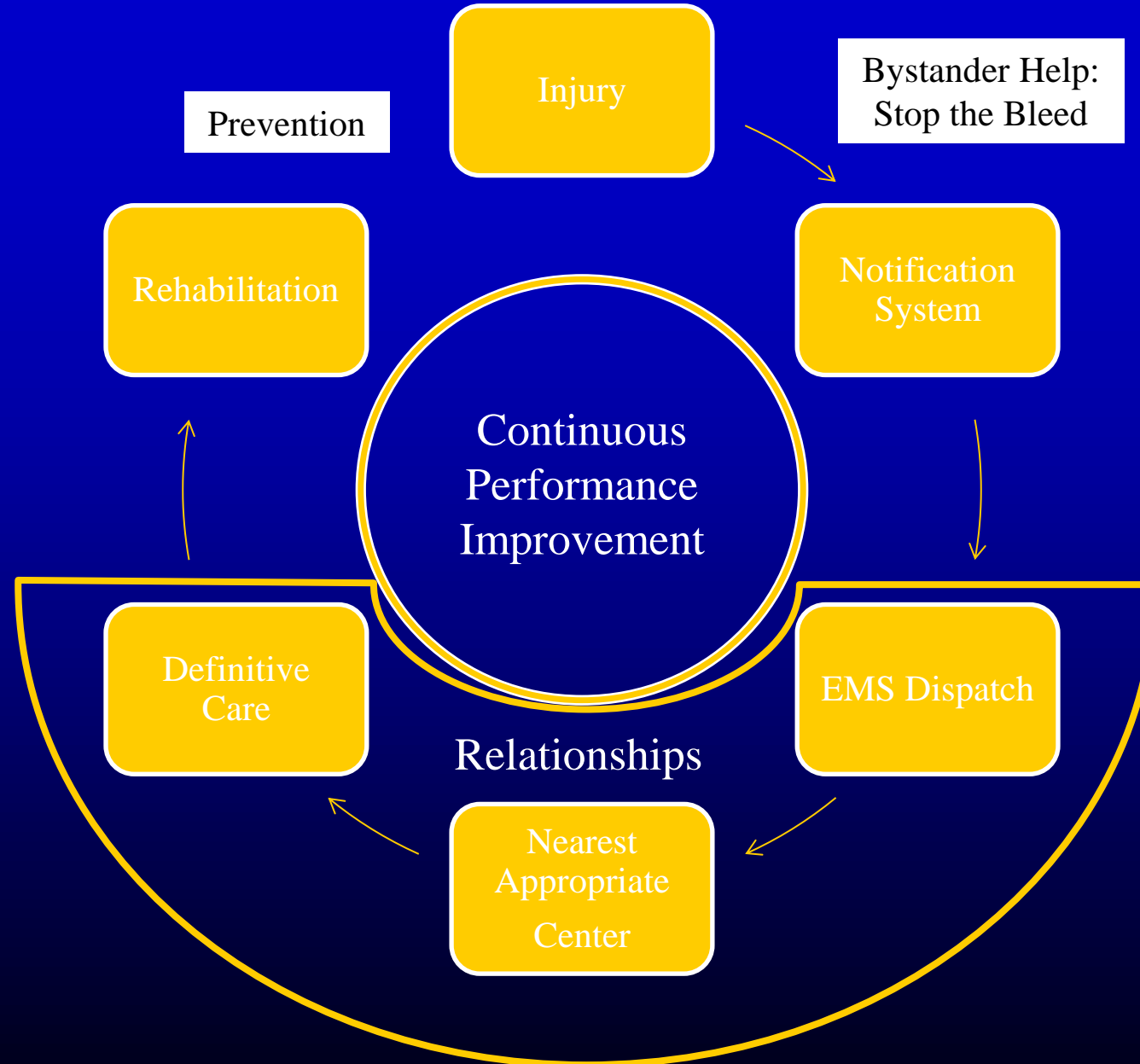
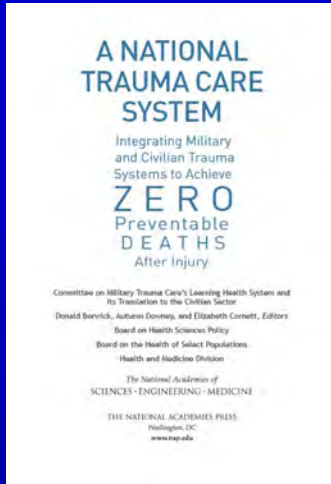
## Topics Covered

Whole Blood

Rural Program

Level IV Standards

**What if?**



# Summary

- The burden of injury is over-represented in rural environments
- The Level IV trauma center plays a critical role
- Urban center needs to be the resource for the rural facility
- A trauma system depends on developing relationships!