

Colorado EMS Patient Care Times: A Comparison to National Estimates

EMS and Trauma Data Program
Colorado Dept. of Public Health &
Environment

1/10/08

Colorado MATRIX: EMS Ambulance Trip Reporting Information Exchange

- Data from 77 agencies (40% of the agencies in Colorado)
- More than 300,000 records entered since January 2006
- Dataset based on the National Elements subset of NEMESIS Version 2.2.1

Assessment of Patient Care Times

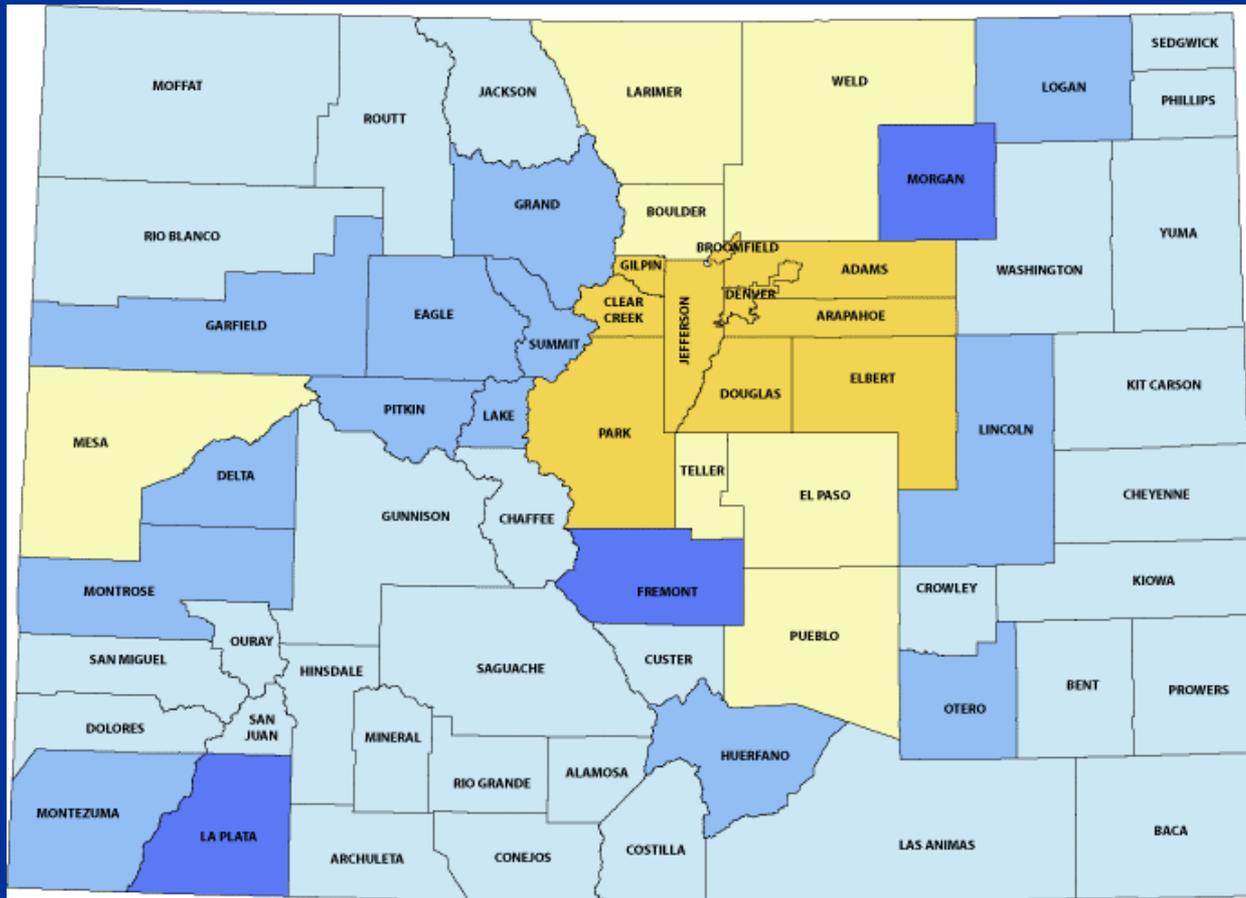
- Analysis protocol designed by NEMESIS
<http://www.nemesis.org/media/doc/NEMESISReportSpecification-NationalElapsedpatientCareTimesbyUrbanicity.doc>
- Cases for analysis were selected based on:
 - Service date between September 2006 and August 2007
 - Type of service requested = 911 Response
 - Response mode to scene = Lights/sirens

Assessment of Patient Care Times

- Agencies were categorized by county into Urban Influence groups*:
 1. Urban
 2. Suburban
 3. Rural
 4. Wilderness

*Based on the 2003 schema developed by the US
Department of Agriculture

Urban Influence Groups Based on 2003 USDA schema



Yellow = Urban

Dark Blue = Suburban

Medium Blue = Rural

Light Blue = Wilderness

Assessment of Patient Care Times

| Urban Influence Group | Number of Agencies Included | Percent of Agencies Included | Number of records in the analysis |
|-----------------------|-----------------------------|------------------------------|-----------------------------------|
| Urban | 23/95 | 24% | 59,267 |
| Suburban | 5/9 | 56% | 457 |
| Rural | 17/36 | 47% | 2,674 |
| Wilderness | 31/54 | 57% | 3,268 |
| | | | |
| Total | 76/194 | 39% | 65,666 |

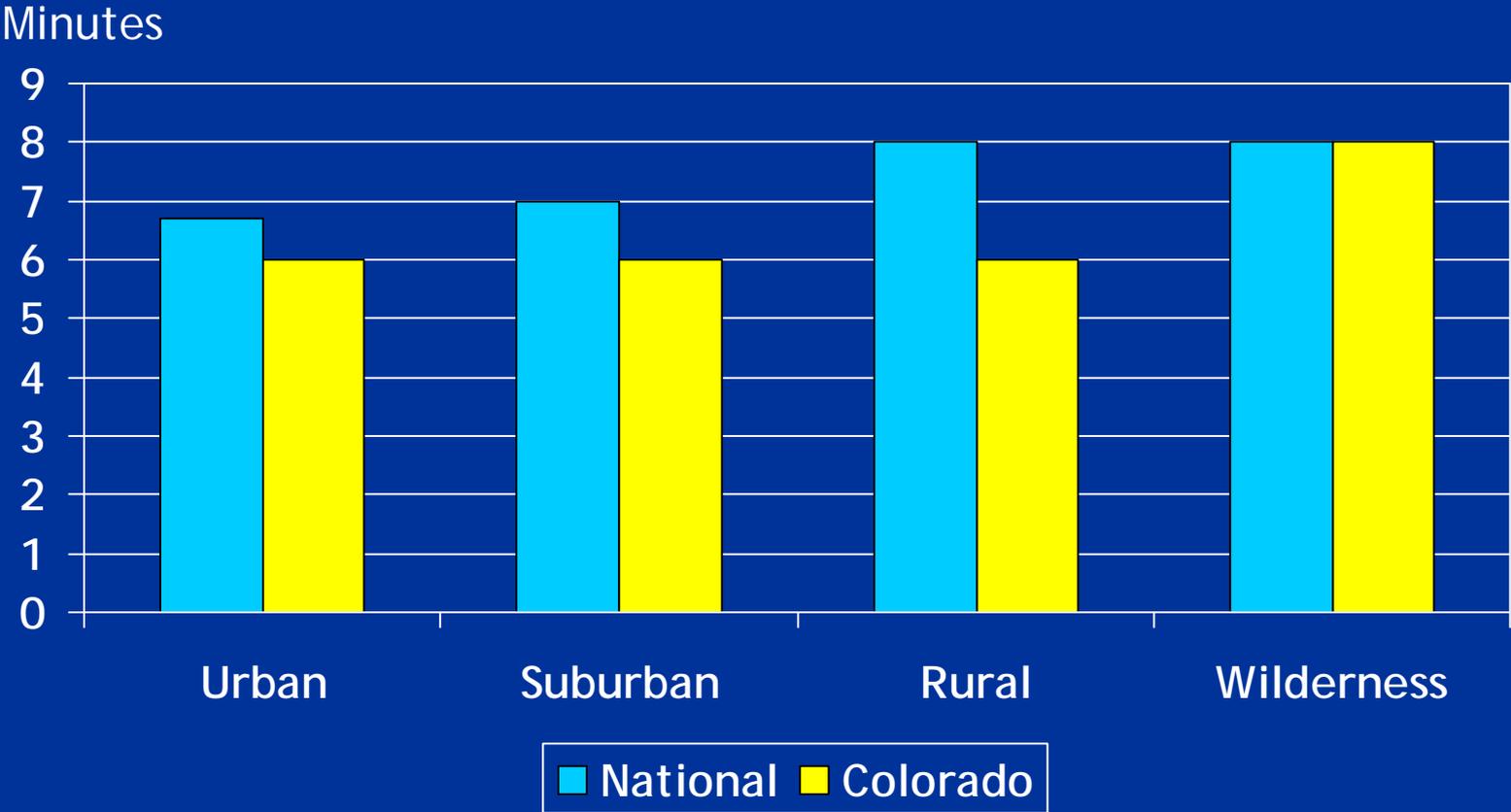
Assessment of Patient Care Times

- National estimates
 - Data from Minnesota, New Hampshire and North Carolina
 - 300,680 patient transports
 - Service date of January through December 2006

Assessment of Patient Care Times

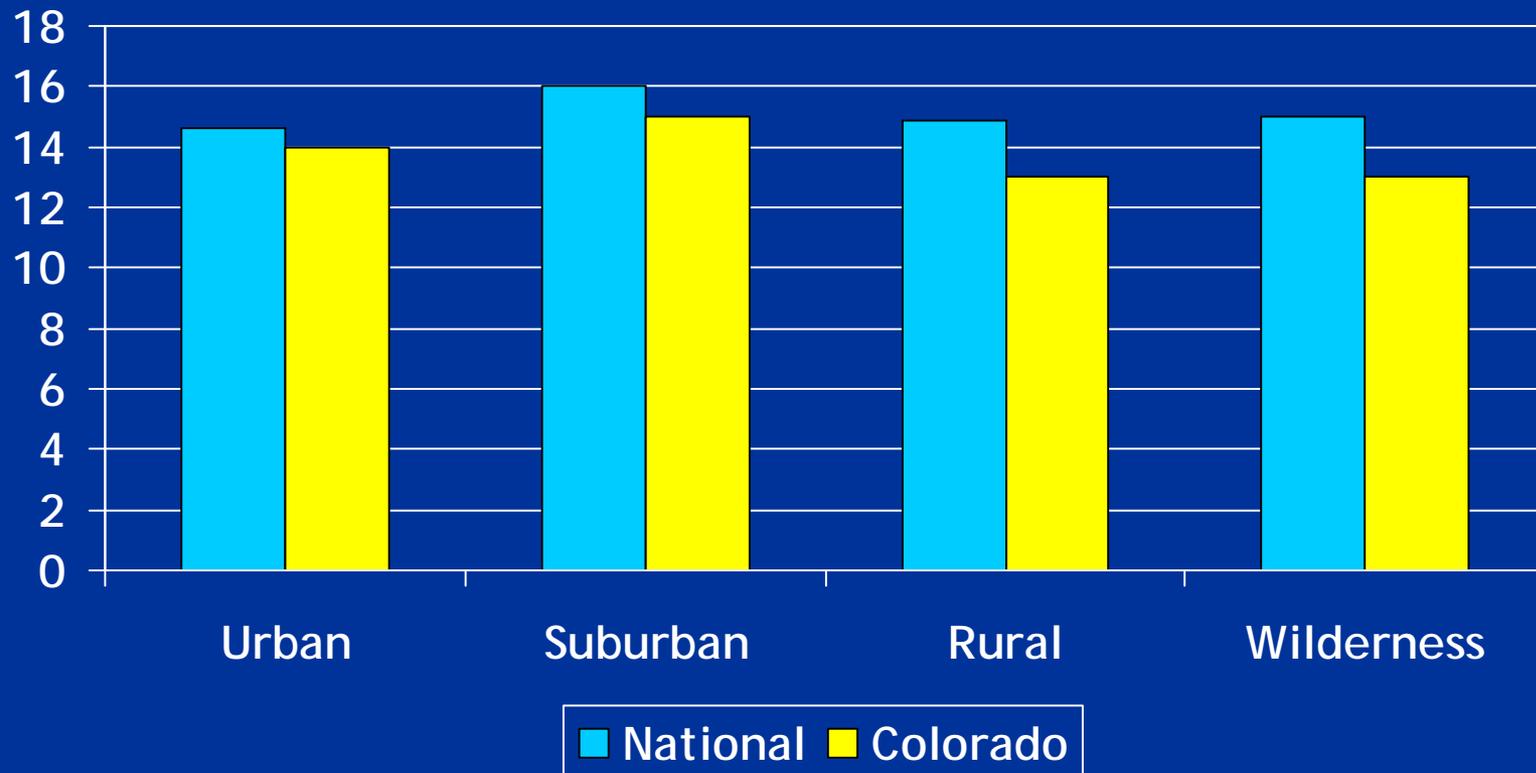
- **Response Time**
Notification by dispatch to arrival at the scene
- **Scene Time**
Arrival at the scene to departure from the scene
- **Transport Time**
Departure from the scene to arrival at the destination

Median Response Times National vs. Colorado



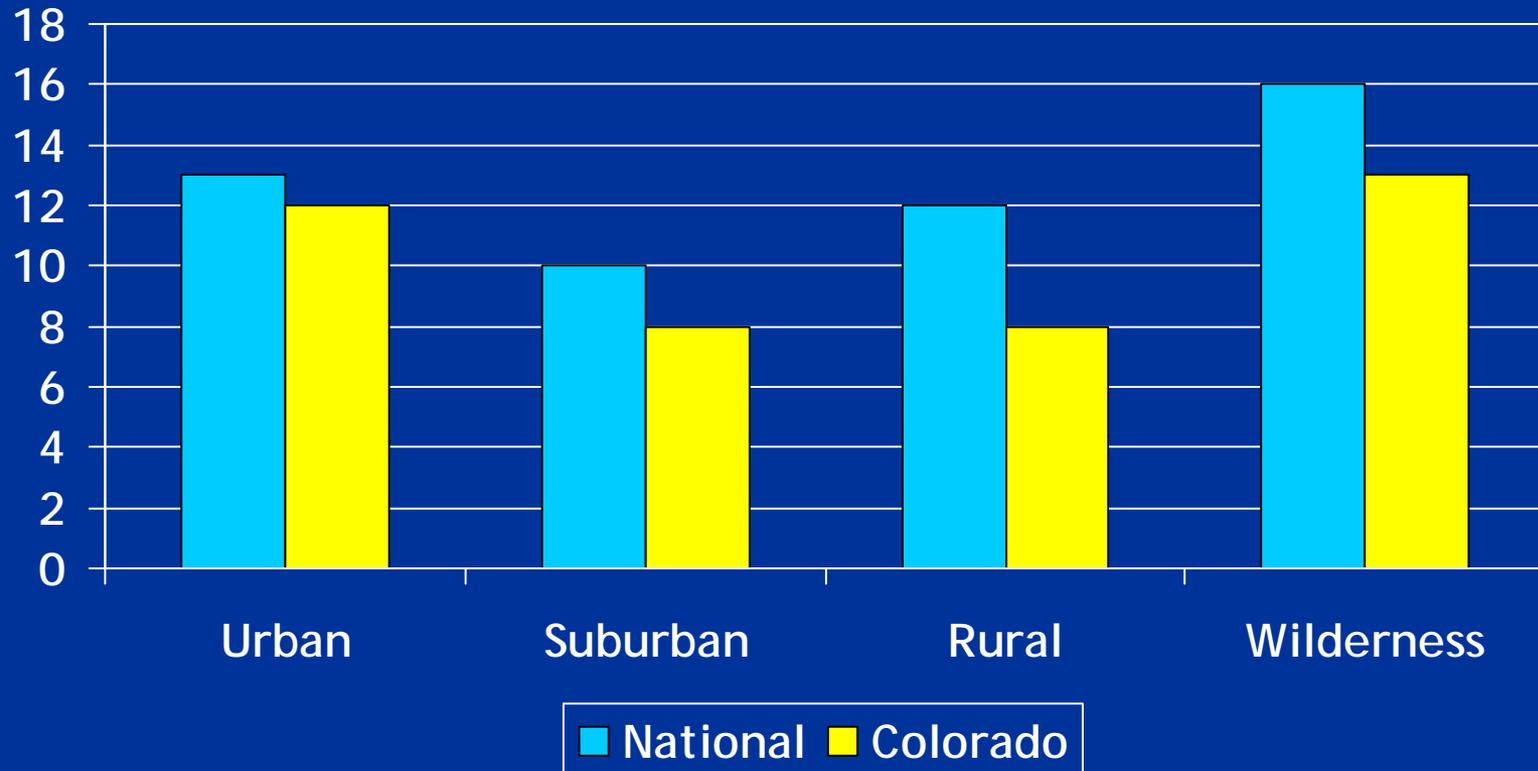
Median Scene Times National vs. Colorado

Minutes



Median Transport Times National vs. Colorado

Minutes



Colorado's Chapter Two Rules

- Response times

| | |
|--------------------|-----------------------|
| High Density Areas | 90% within 11 minutes |
| Mid Density Areas | 90% within 20 minutes |
| Low Density Areas | 90% within 45 minutes |

- Scene Times

| | |
|-----------|-----------------------|
| All areas | 90% within 15 minutes |
|-----------|-----------------------|

Are we meeting the standards in our rules?

| Urban Influence Group | CO Response Time Standard* | CO Response Time Assessment* | CO Scene Time Standard* | CO Scene Time Assessment* |
|-----------------------|----------------------------|------------------------------|-------------------------|---------------------------|
| Urban | 11 | 12 | 15 | 24 |
| Suburban | 20 | 19 | 15 | 26 |
| Rural | 20 | 16 | 15 | 26 |
| Wilderness | 45 | 24 | 15 | 27 |

* 90% fractal, in minutes

Are we meeting the standards in our rules?

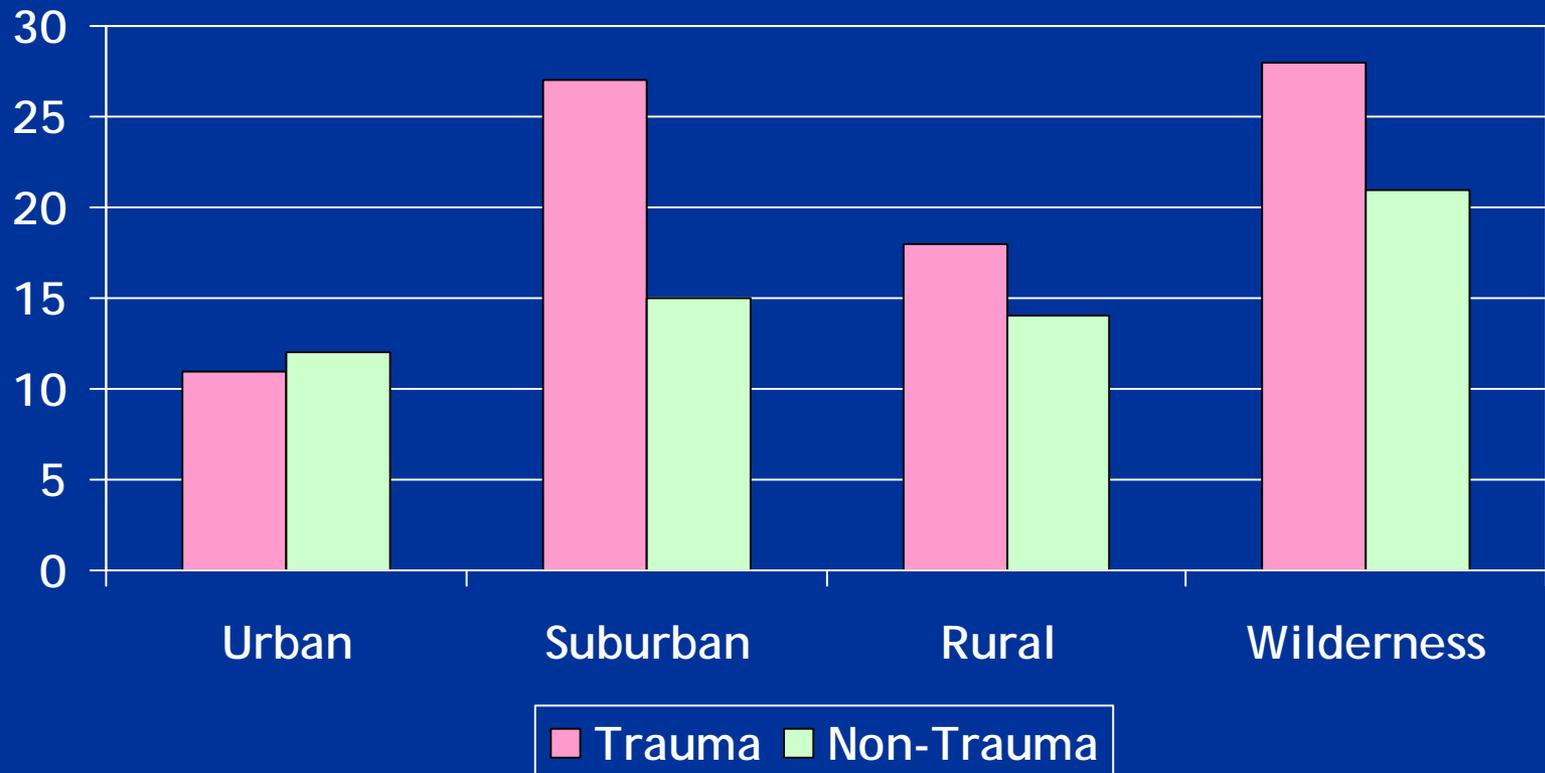
| Urban Influence Group | CO Scene Time Standard* | Scene Time Assessment* TRAUMA | Scene Time Assessment* NON-TRAUMA |
|-----------------------|-------------------------|-------------------------------|-----------------------------------|
| Urban | 15 | 23 | 23 |
| Suburban | 15 | 33 | 25 |
| Rural | 15 | 29 | 25 |
| Wilderness | 15 | 29 | 26 |

* 90% fractal, in minutes

Response Times

Colorado, Trauma vs. Non-Trauma

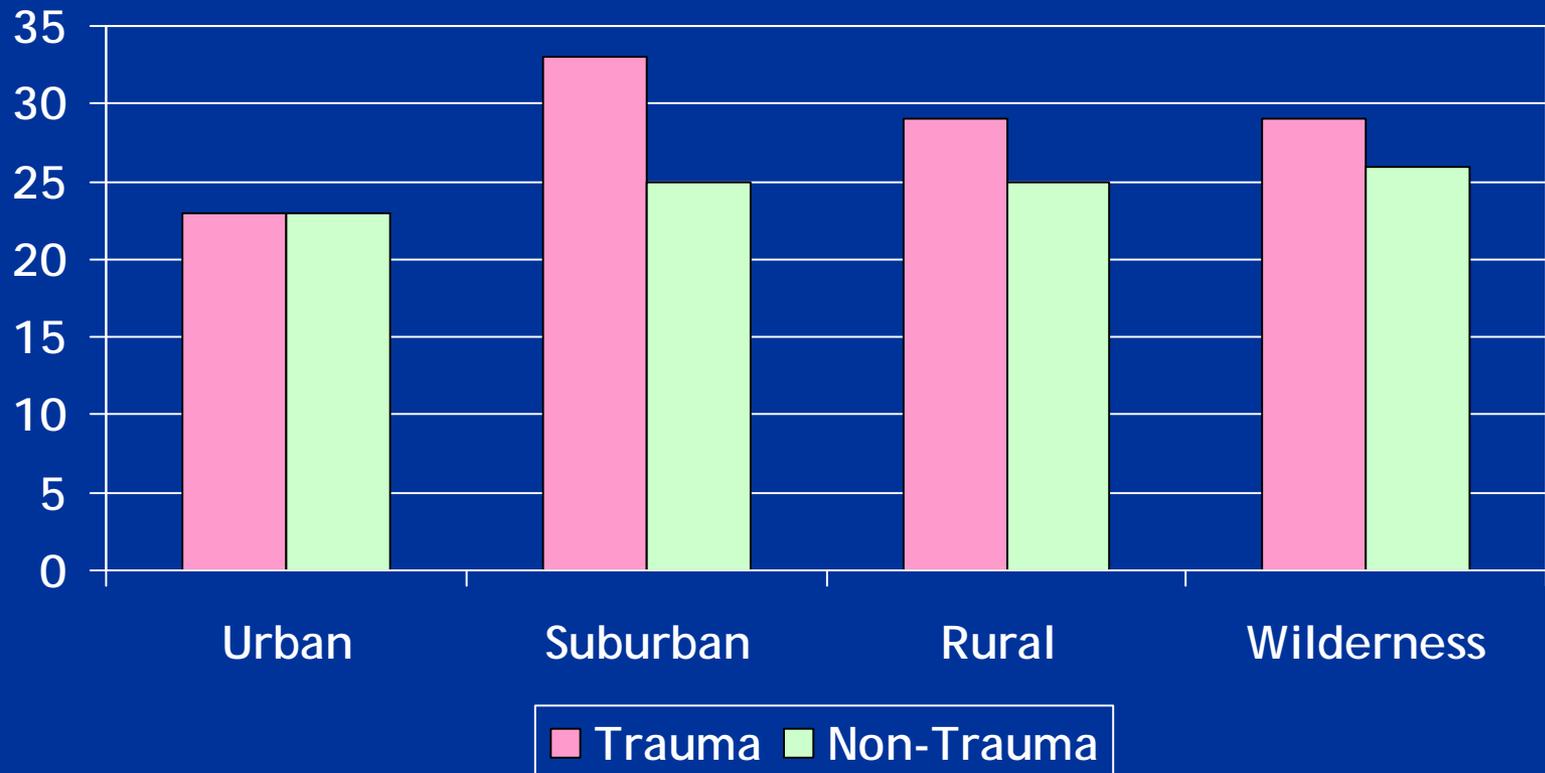
Minutes



Scene Times

Colorado, Trauma vs. Non-Trauma

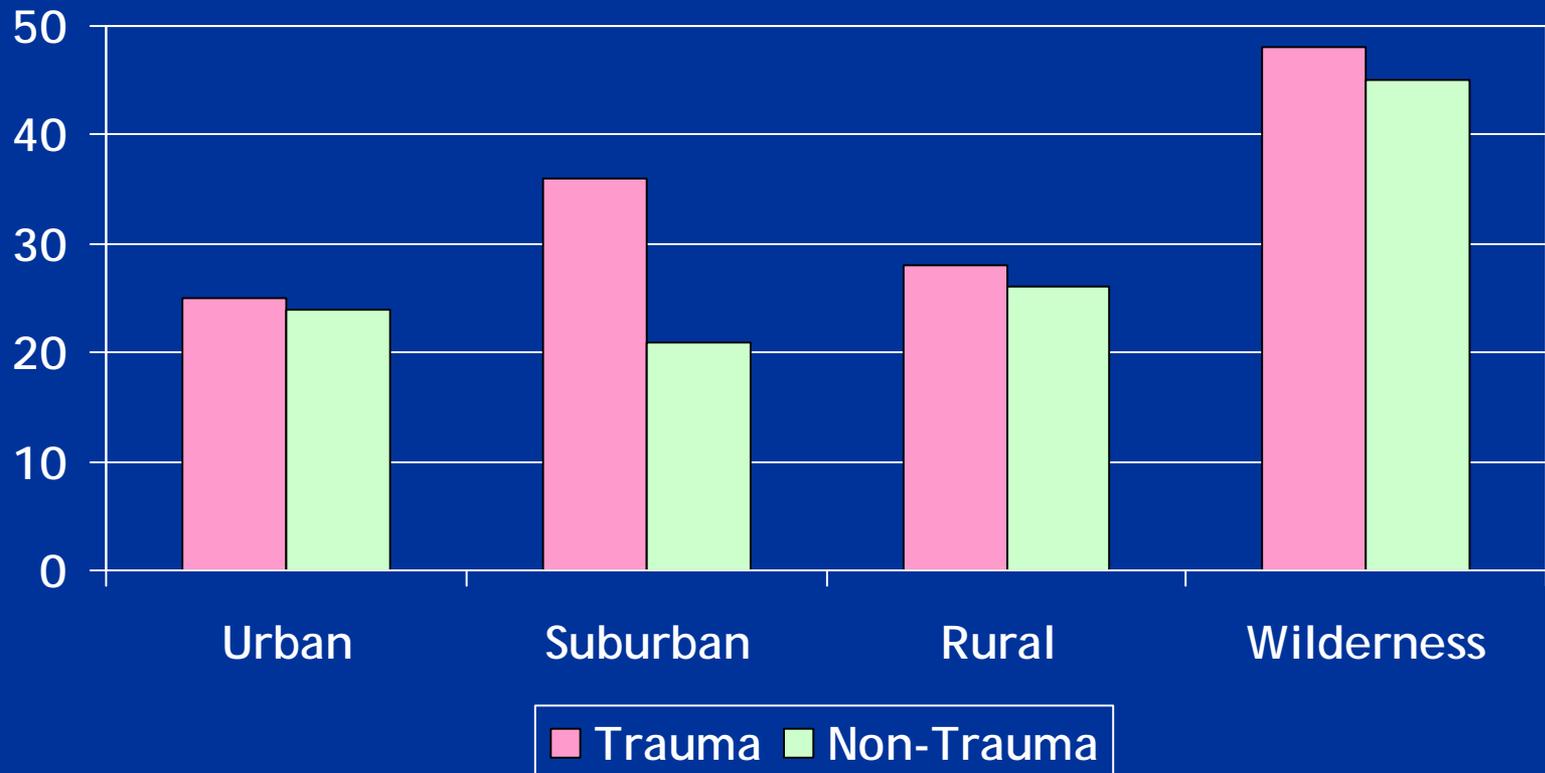
Minutes



Transport Times

Colorado, Trauma vs. Non-Trauma

Minutes



Summary

- Colorado's EMS patient care times are comparable to national estimates
- Colorado standards for EMS response times are being met
- Colorado standards for EMS scene times are not being met
 - How do we improve scene times?
 - Does the standard need to be modified?