Addressing Disparities: Rural Injury and Violence Prevention

Monday, June 7th 1:30-3:00pm EST

Featured Speakers **Monique Sheppard, PhD**

Mary E. Aitken, MD, MPH

Sally Kerschner, MSN, RN

Moderated by **Erica Streit-Kaplan, MPH, MSW**

On your telephone please dial:

1-866-835-7973

The webcast will begin shortly.

Overview of Rural/Urban Injury Disparities

Erica Streit-Kaplan, MPH, MSW

Children's Safety Network

June 7, 2010

CSN is funded by the Health Resources and Services Administration (U.S. Department of Health and Human Services).

A project of the Education Development Center, Inc.

What Is Rural?

- No consensus on definition
- Approximately 54 million people live in “rural” areas.
- Rural residents = 20% of U.S. population

Rural Populations at Increased Risk

- Motor vehicle crashes
- ATV-related
- Fire deaths
- Drowning
- Suicide

Scope of the Problem

- Between 1995 and 2002, 907 youth died on US farms (NIOSH)
  - 43 fatalities per 100,000 youth
  - most fatalities to 16-19 year-olds
- Rural fatal crash rate more than double urban rate (NHTSA).
  - 2.4 vs. 1.0 deaths per 100 million vehicle miles traveled

Why?

- Rural roads
- Limited enforcement
- Distance from first responders & medical care
- Less access to medical providers
- Social norms

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Community of Practice

- Convened by CSN
- Multi-disciplinary teams from six northeastern states
- Explored data, prevention strategies, developed state action plans

How Did the Community of Practice Work?

- Regular phone meetings
- Expert presenters
- Email contact
- Online social networking group
- State action planning

States Focused on 4 Rural Injury Issues

1) teen motor vehicle crashes
2) teen suicides
3) all-terrain vehicle (ATV) injuries
4) farm injuries

Benefits of Community of Practice

- Explore injury issues in a sustained way
- Learn about successes/challenges in other states
- Get feedback on your own work

New Community of Practice

- National: 6-10 states
- Starting this fall
- 6-12 month obligation
- Applications available after this webinar

CSN Children's Safety Network

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Injury Rates by Urbanization in Fatality Data

Presented by the Children's Safety Network Economics and Data Analysis Resource Center (CSN-EDARC):

Monique A. Sheppard, PhD

Addressing Disparities Rural Injury and Violence Prevention Webinar

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2006 National Center for Health Statistics Urban-Rural Classification

Table 2. Classification rules used to assign counties to the six urbanization levels of the 2006 NCHS Urban-Rural Classification

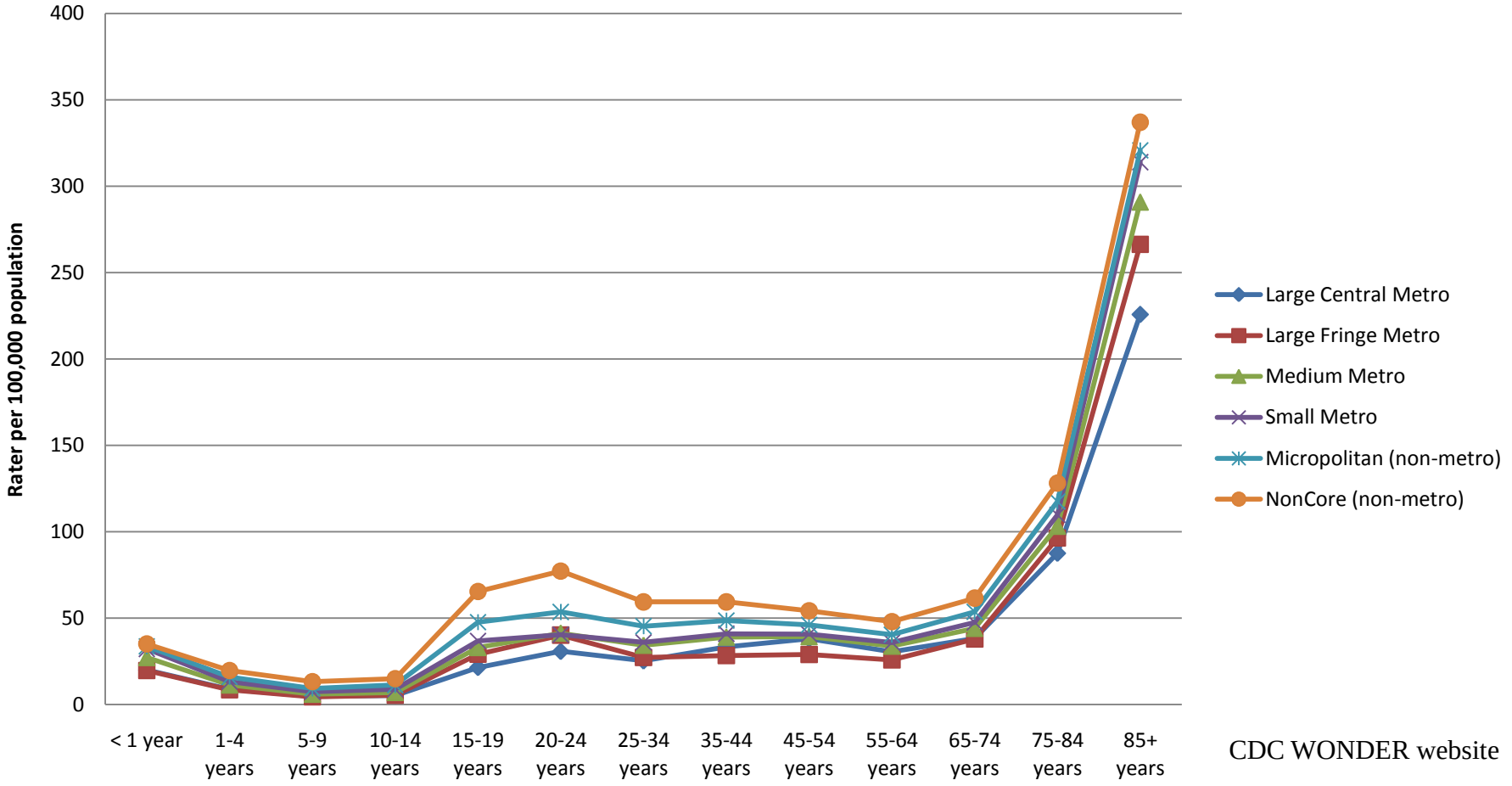
Urban-rural category	Classification rules
Metropolitan	
	Counties in a metropolitan statistical area of 1 million or more population:
	1) that contain the entire population of the largest principal city of the metropolitan statistical area, or
Large central metro[1]	2) whose entire population resides in the largest principal city of the metropolitan statistical area, or
	3) that contain at least 250,000 of the population of any principal city in the metropolitan statistical area
Large fringe metro	Counties in a metropolitan statistical area of 1 million or more population that do not qualify as large central
Medium metro	Counties in a metropolitan statistical area of 250,000 to 999,999 population
Small metro	Counties in a metropolitan statistical area of 50,000 to 249,999 population
Nonmetropolitan	
Micropolitan	*Counties in a micropolitan statistical area
Noncore	Counties that are neither metropolitan nor micropolitan

[1]There must be at least one large central county in each large metro area.

*Micropolitan counties are defined as counties with a core city or town with a population of 10,000 to 49,999

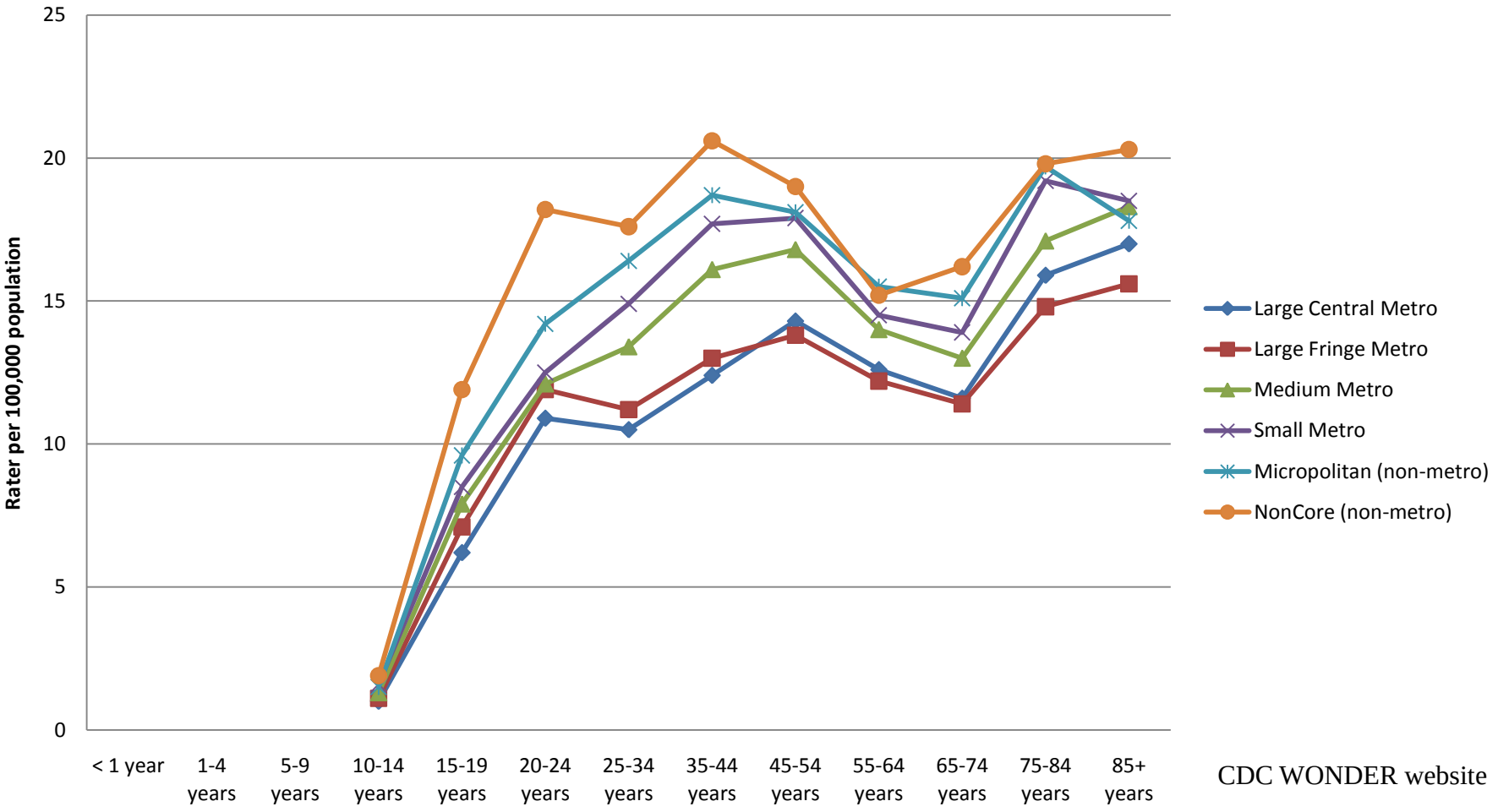
Source: http://wonder.cdc.gov/wonder/help/CMF/Urbanization-Methodology.html

US Unintentional Rates of Fatal Injuries by Urbanization and Age Group 1999-2006



CDC WONDER website

US Suicide Rates of Fatal Injuries by Urbanization and Age Group 1999-2006



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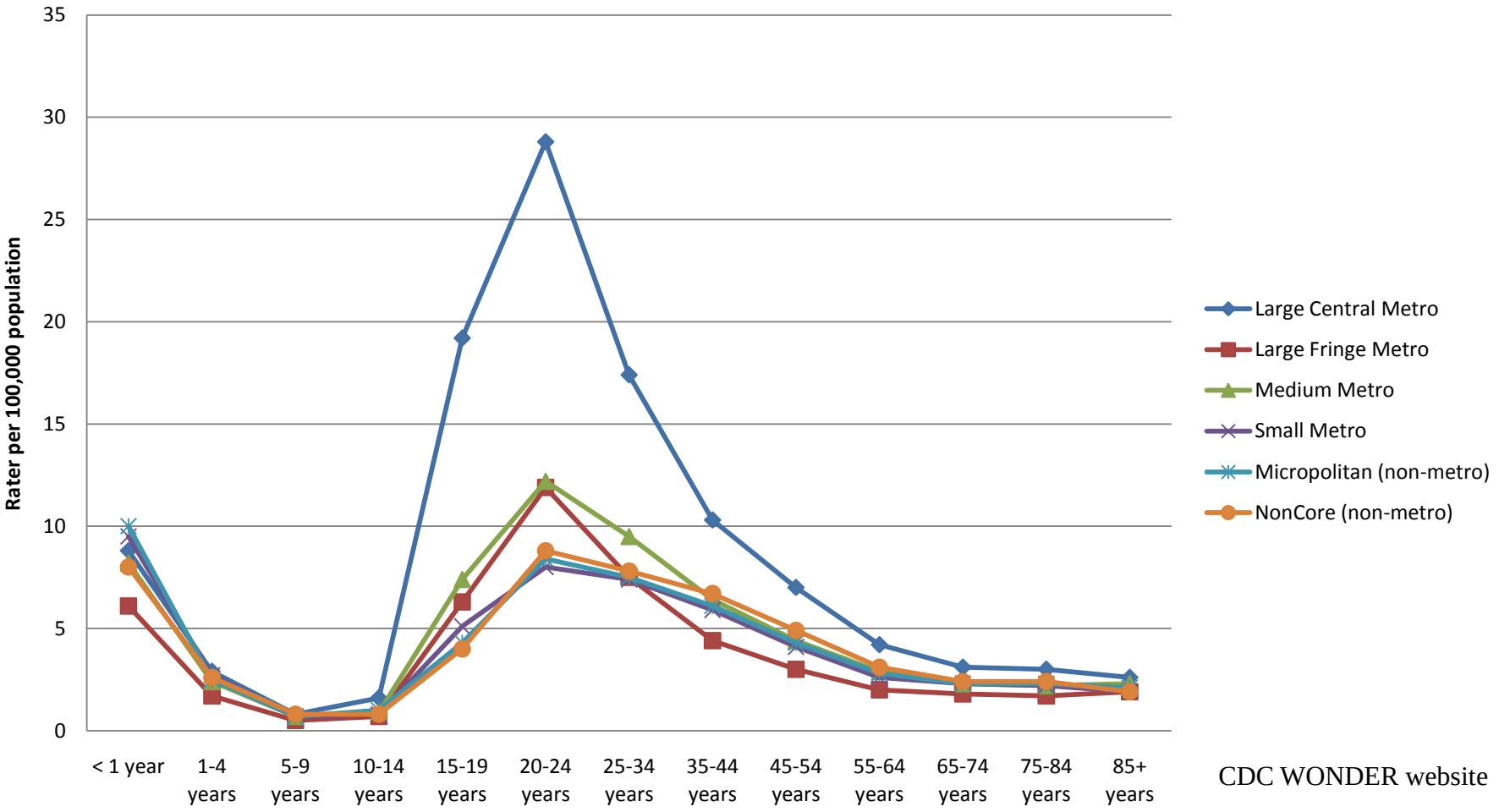
US Homicide Rates of Fatal Injuries by Urbanization and Age Group 1999-2006



CDC WONDER website

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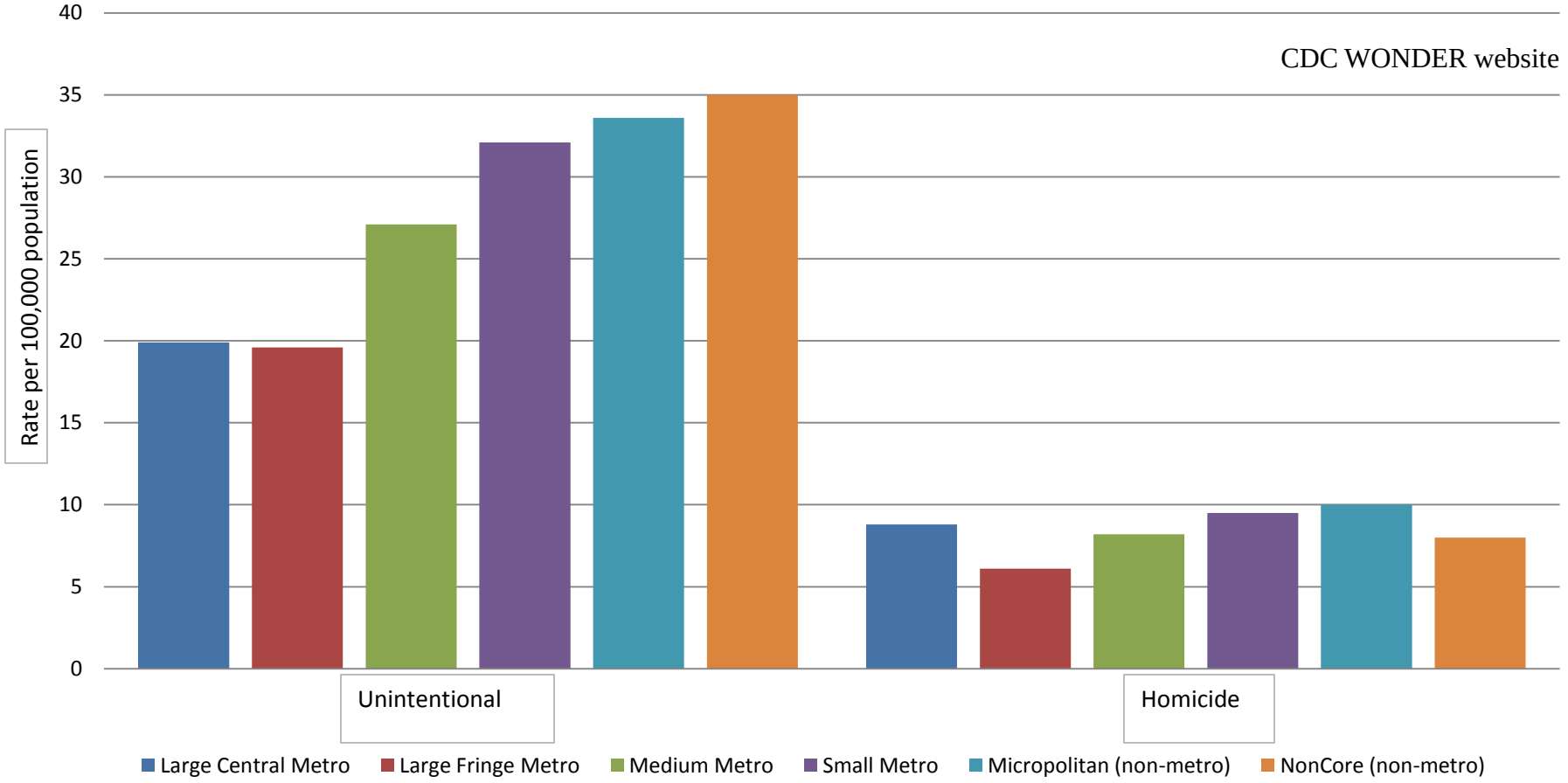
US Rates of Fatal Injuries by Urbanization and Intent for Ages <1 Year, 1999-2006



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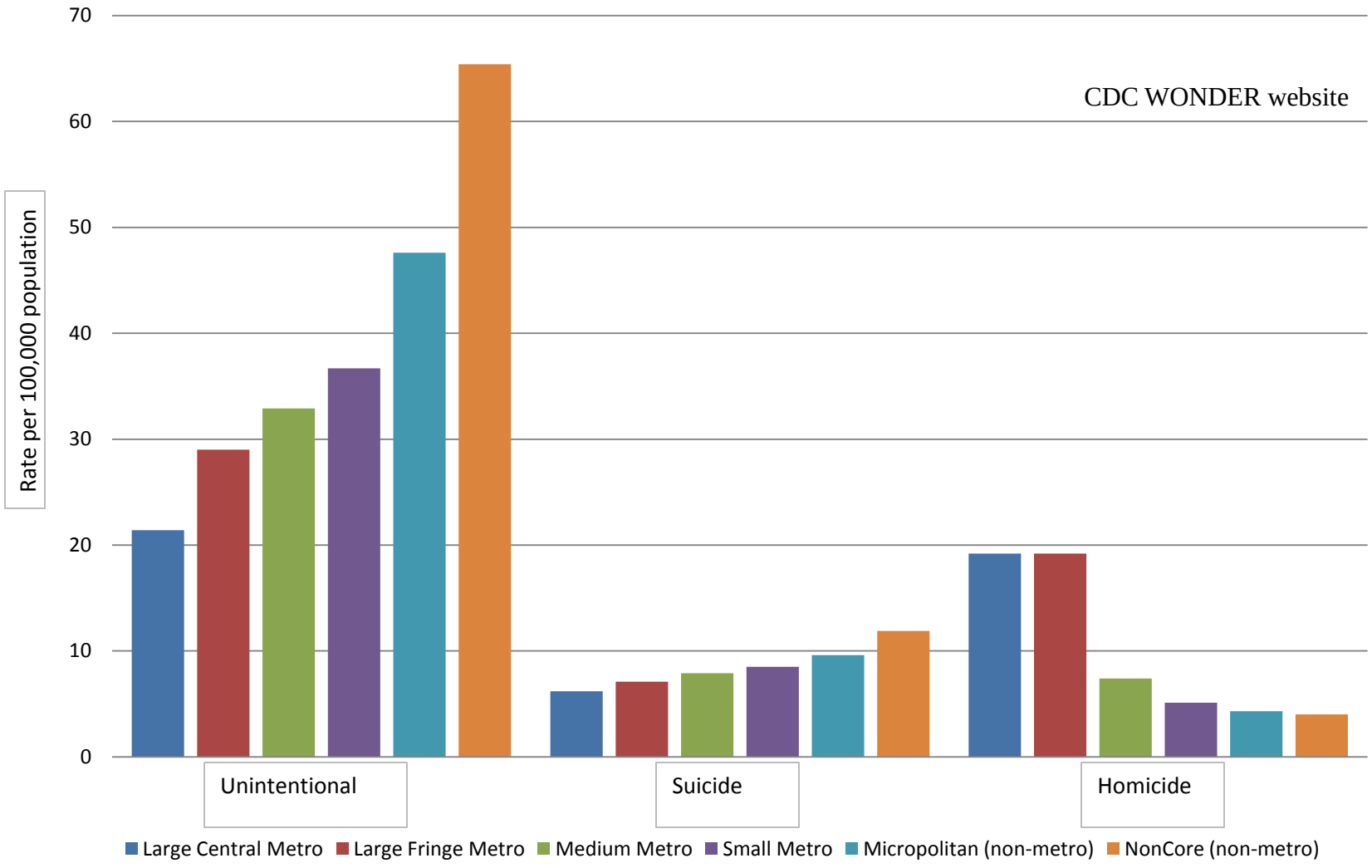
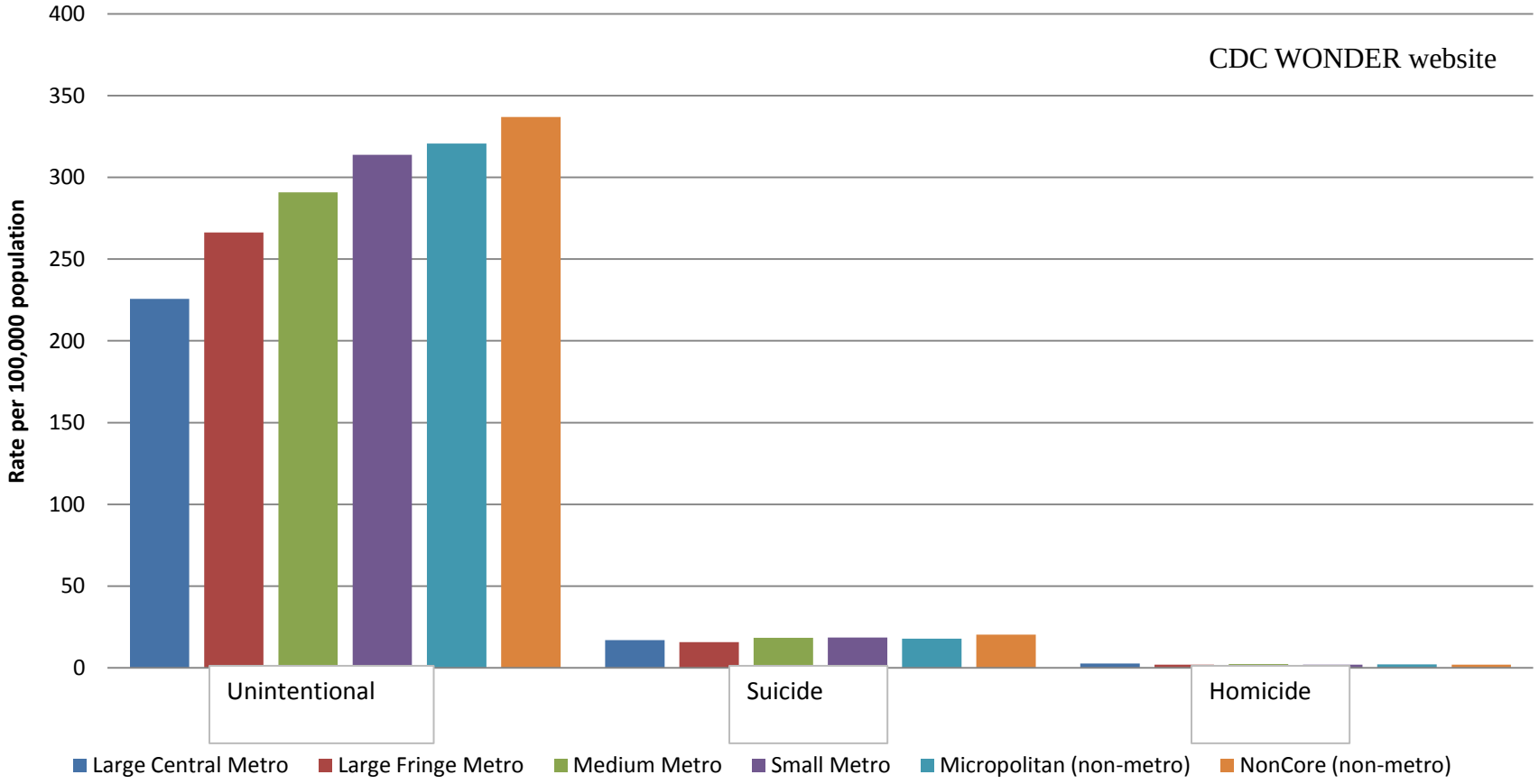
US Rates of Fatal Injuries by Urbanization and Intent for Ages 15-19 Years, 1999-2006



US Rates of Fatal Injuries by Urbanization and Intent for Ages 85+ Years, 1999-2006



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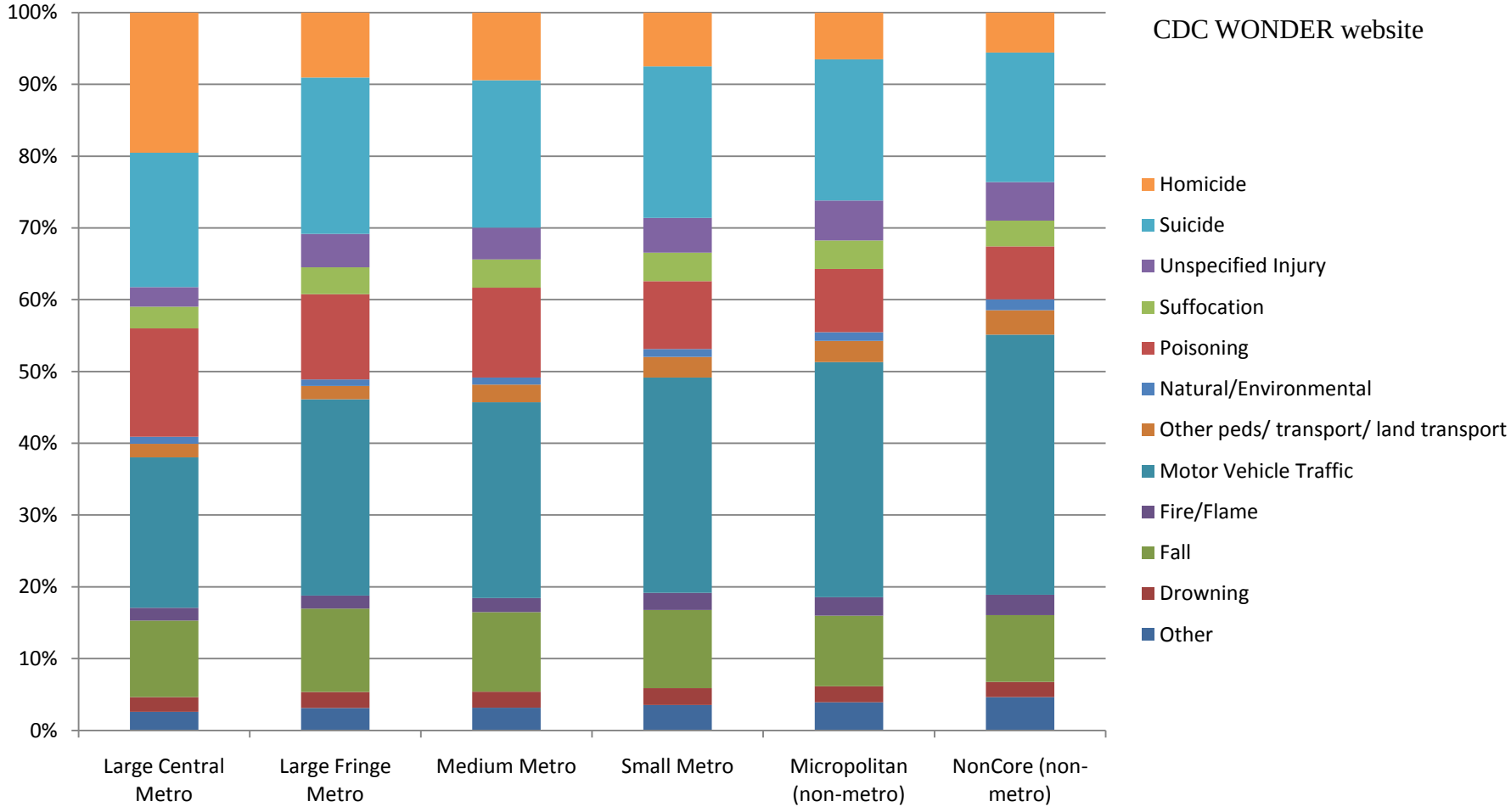
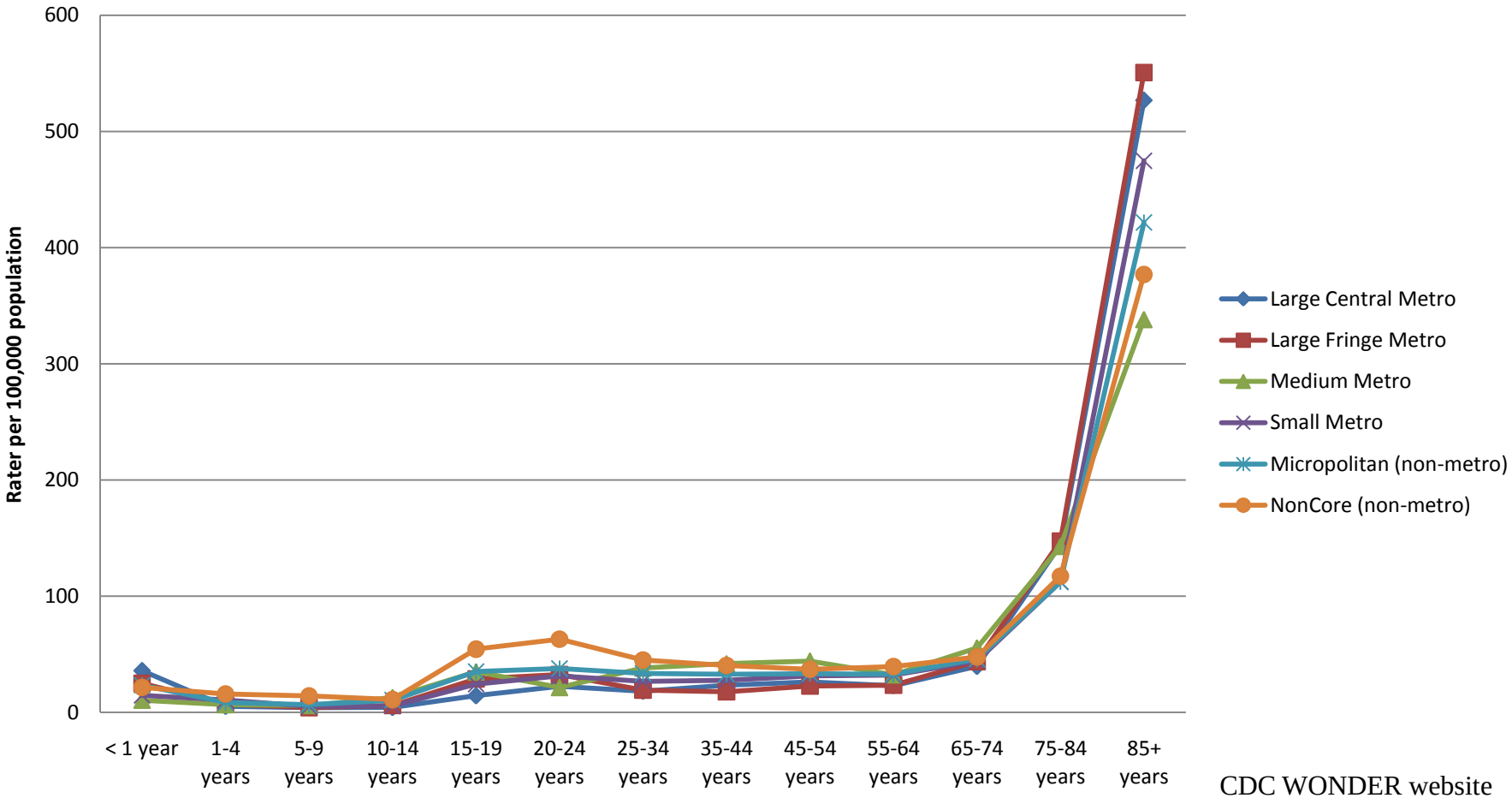
US Fatal Injury
Percentage Mechanism by Urbanization, 1999-2006



CDC WONDER website

Minnesota Unintentional Rates of Fatal Injuries by Urbanization and Age Group



CDC WONDER website

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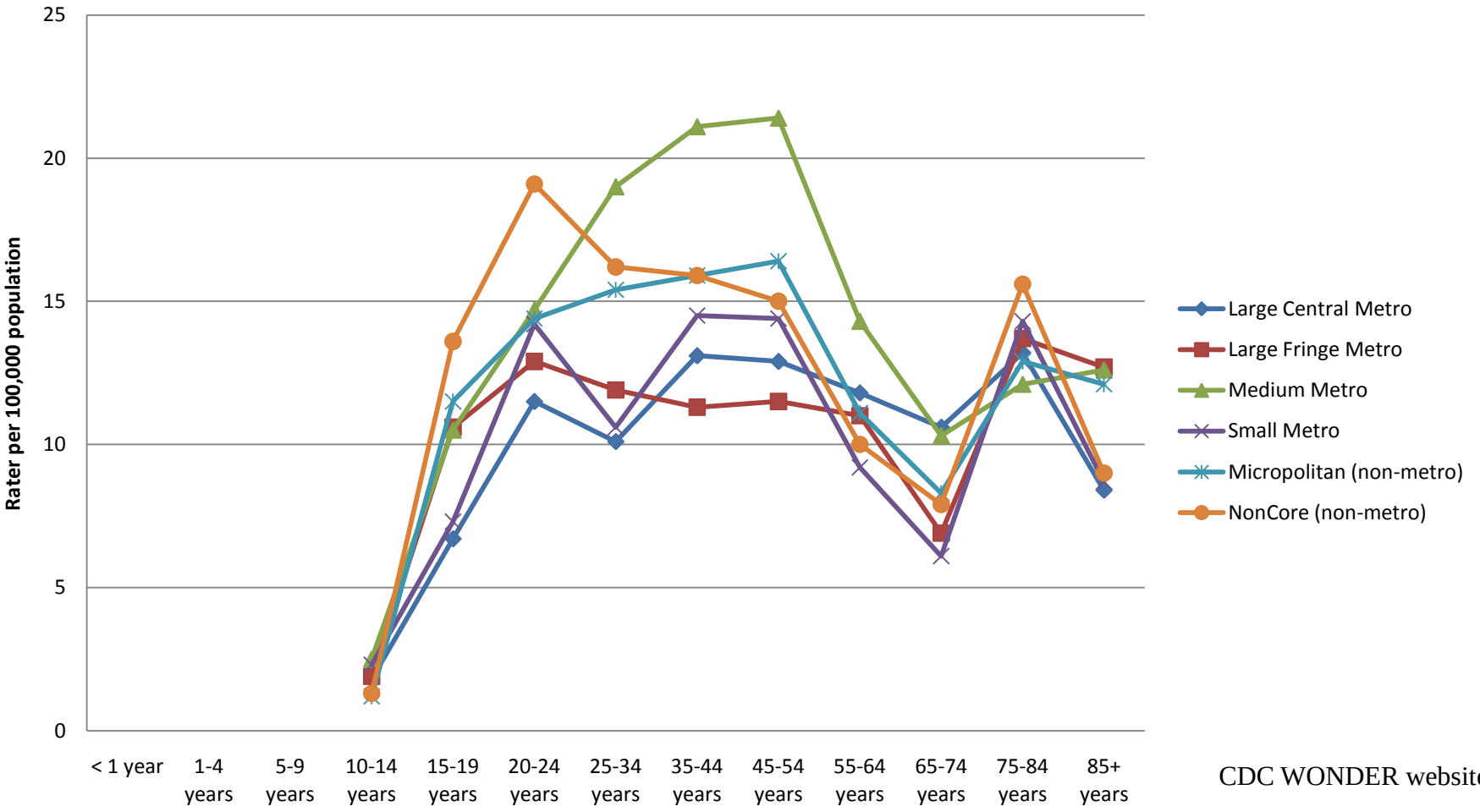
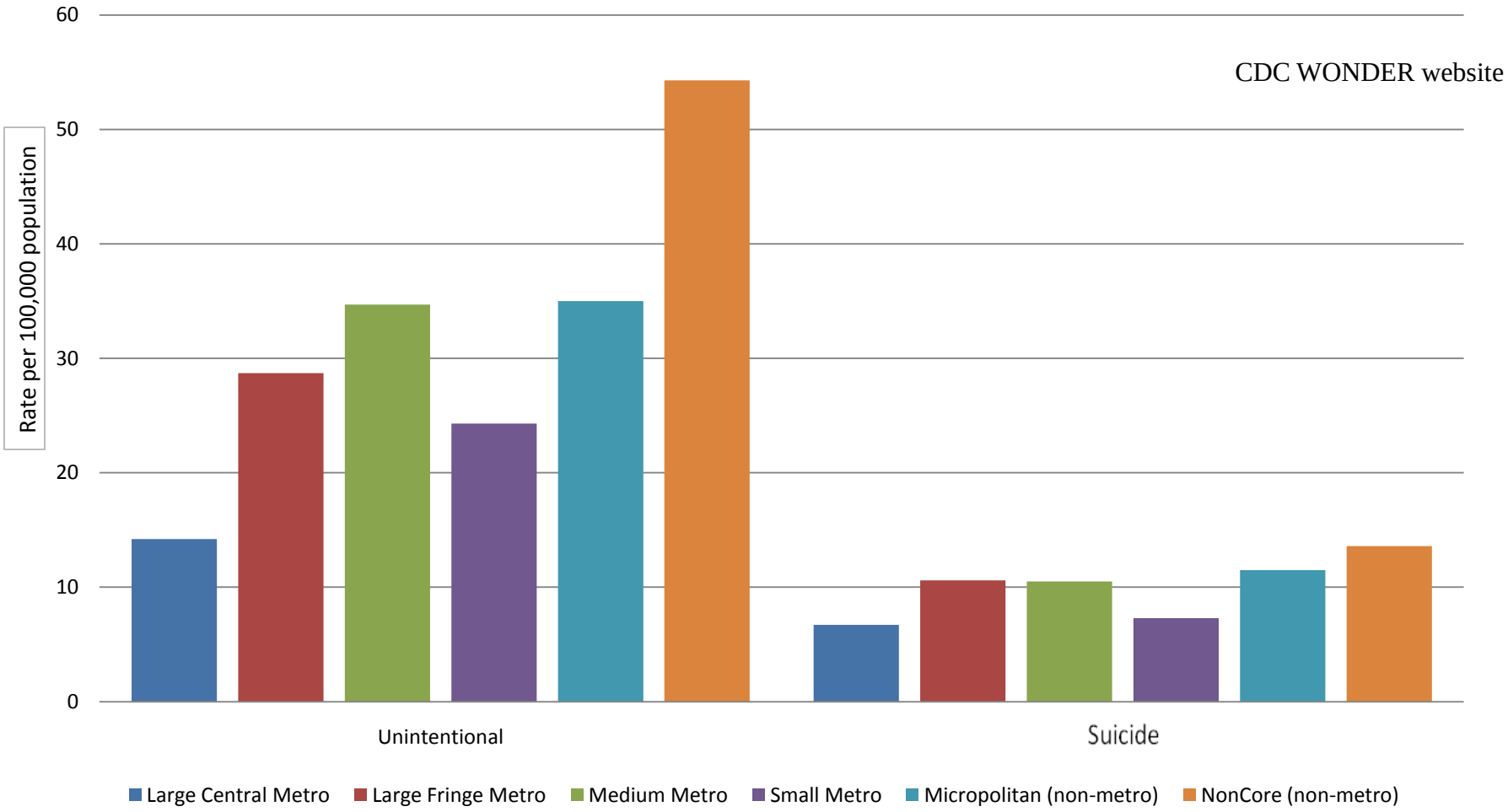
Minnesota Suicide Rates by Urbanization and Age Group, 1999-2006

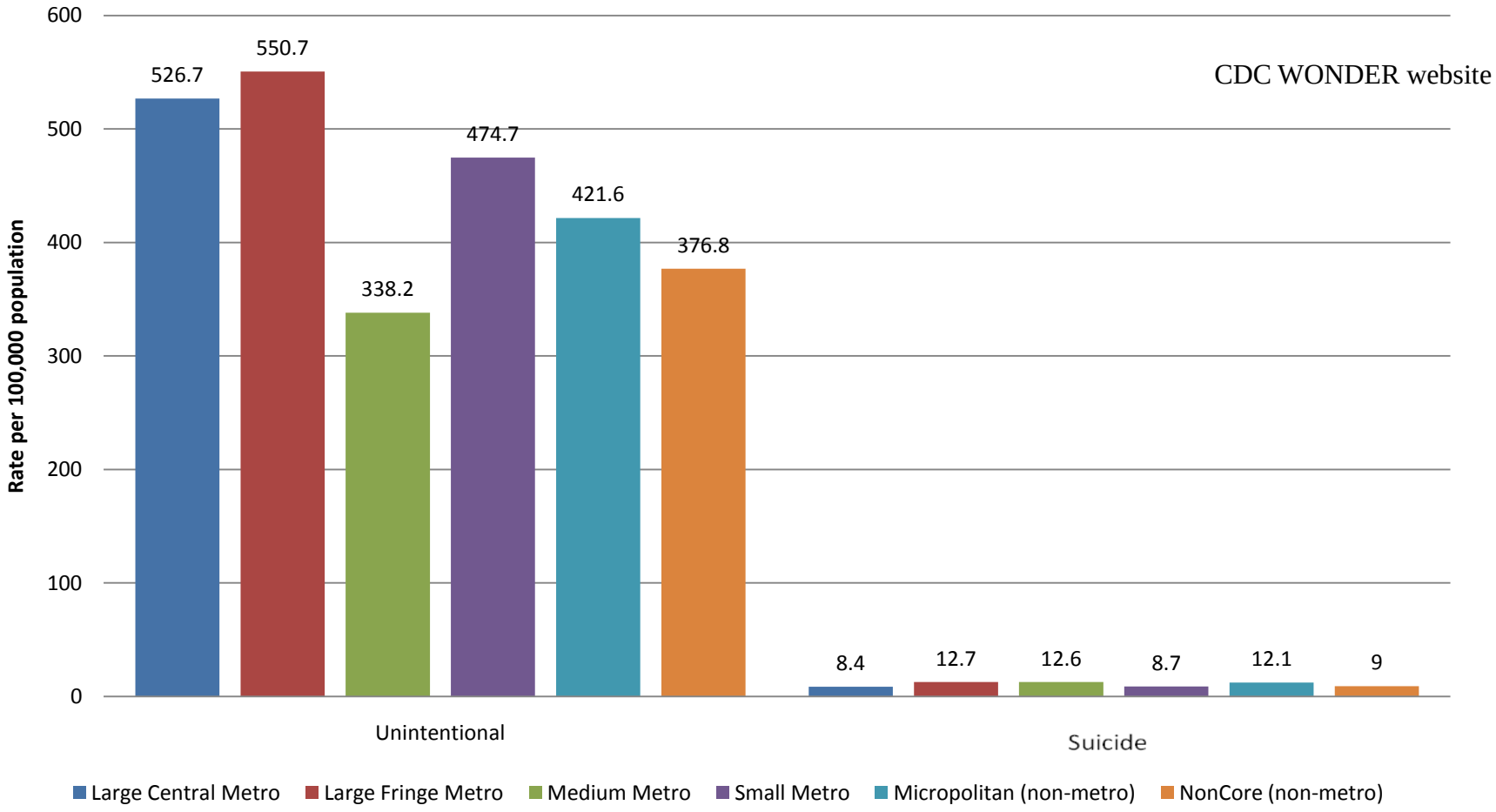


CDC WONDER website

Minnesota Rates of Fatal Injuries by Urbanization and Intent for Ages 15-19 Years, 1999-2006



Minnesota Rates of Fatal Injuries by Urbanicity and Intent for Ages 85+ Years, 1999-2006



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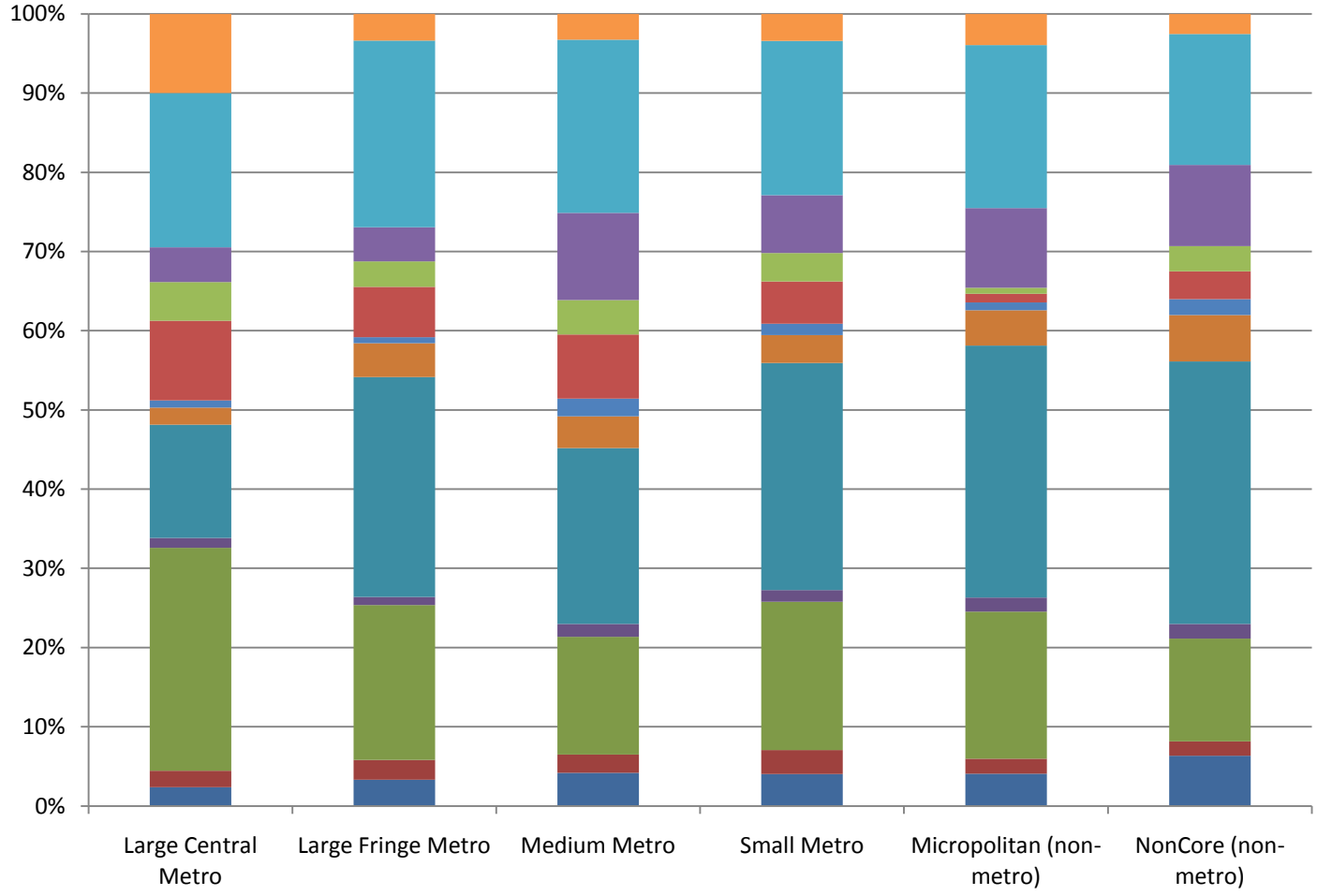

CDC WONDER website

- Homicide
- Suicide
- Unspecified Injury
- Suffocation
- Poisoning
- Natural/Environmental
- Other peds/ transport/ land transport
- Motor Vehicle Traffic
- Fire/Flame
- Fall
- Drowning
- Other

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Injury Risk in Rural Communities: Perception, Reality, and Prevention

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Professor of Pediatrics, UAMS College of Medicine
Arkansas Children's Hospital Injury Prevention Center

Rural Matters

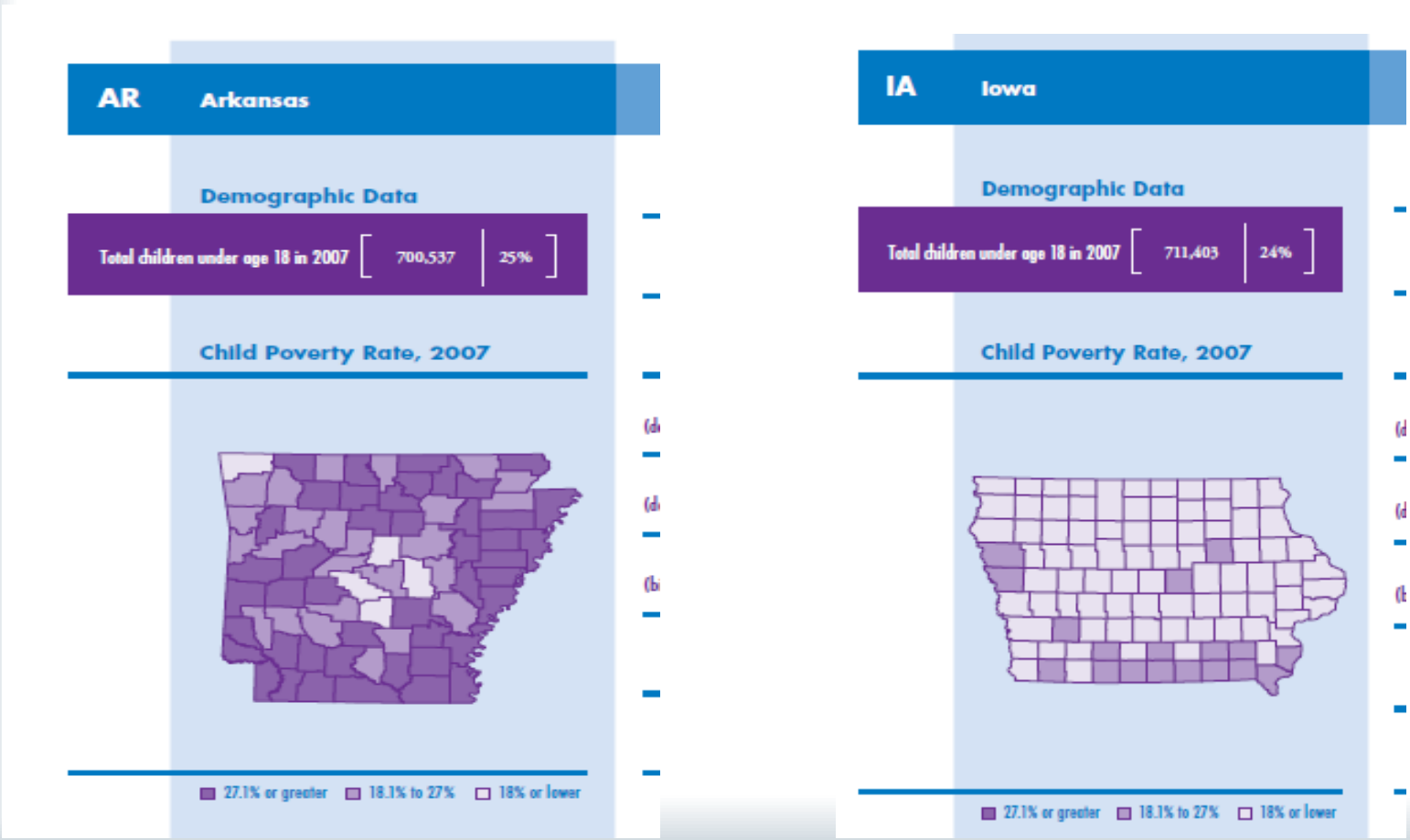
- Institute of Medicine EMSC Report, 2006:
  - "where a child lives has an important impact on whether the child can survive a serious injury or illness"

http://www.iom.edu/Reports/2006/Emergency-Care-for-Children-Growing-Pains.aspx

What is Rural?

- Geography/population density not the whole story
- Cultural influences of values, beliefs, and perceptions
- Satellite/internet communication has decreased isolation but has not necessarily increased access to accurate information

All rural is not the same…



The Annie E. Casey Foundation | www.aecf.org

Rural Health Comparisons

- Risks
  - Higher rates of injury, cardiovascular disease, CVA, neoplasms
  - 26% of all pediatric emergency department visits occur in rural emergency departments
  - Higher rates of emergency system use in rural settings

Rural Health Care Access

- Lack of physicians globally
- Lack of specialty physicians including ED physicians
  - Only 1/3 of US hospitals have a board certified ED doctor, variable staffing patterns (2005 NHAMCS survey)
  - May not have all needed equipment, especially pediatric
- Lower overall quality of care and poorer outcomes, (Dhamar, 2008; Marcin, 2007)
- High rates of preventable medical errors (Esposito)
- Geographic distance to health care services

Rural Emergency Care

- Longer transport distances
- Lower volumes may mean that emergency personnel have less experience caring for children
  - Maine: no paramedics performed more than two pediatric intubations in a single year and most none
  - Lower self-efficacy and decline in skills over time

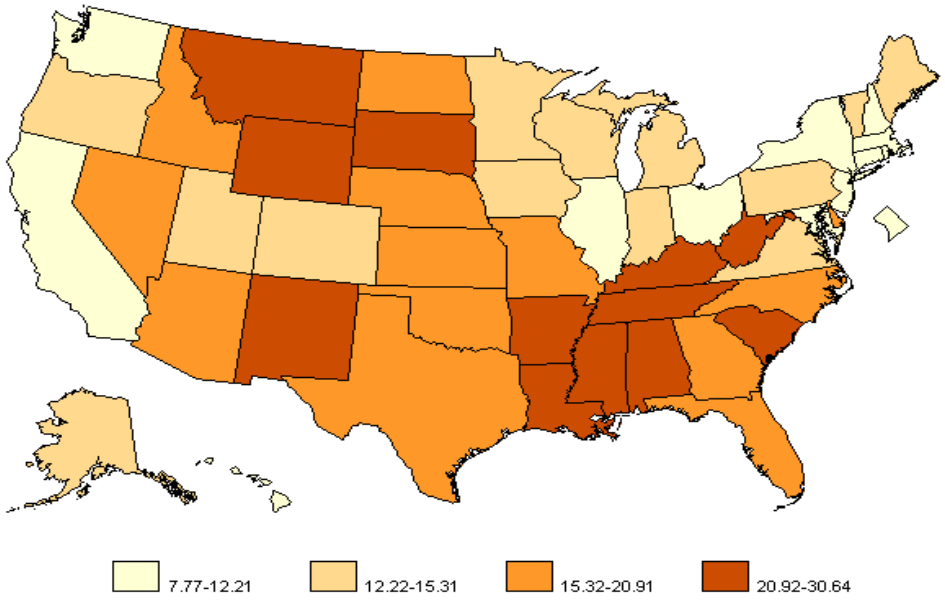
Rural vs. Urban Injury Rates

- Injury rates over several studies range from 25%-35% higher for rural children compared to urban
- 27% increased risk of hospitalization for injury and higher overall injury severity for rural children
- Mostly due to differences in unintentional injuries

Coben, AJPM, 2009

Specific Issues: Motor Vehicle Safety

2000-2006, United States
Death Rates per 100,000 Population
Motor Vehicle, Traffic, All Intents, All Races, All Ethnicities, Both Sexes, All Ages
Annualized Crude Rate for United States: 14.90



Reports for All Ages include those of unknown age.
* Rates based on 20 or fewer deaths may be unstable. States with these rates are cross-hatched in the map (see legend above). Such rates have an asterisk.

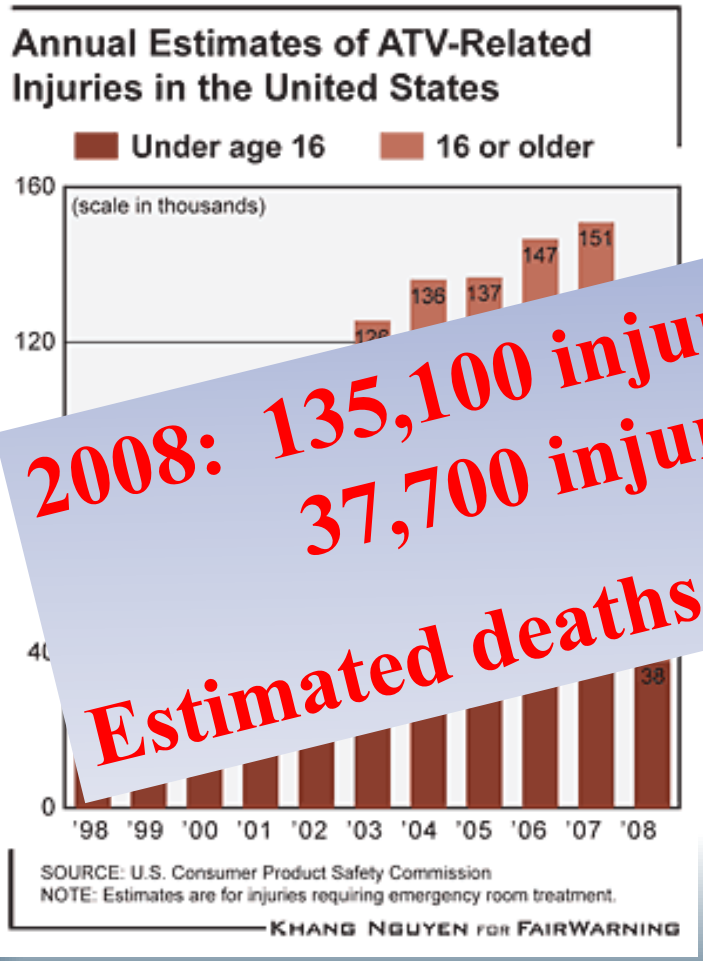
Produced by: Office of Statistics & Programming, National Center for Injury Prevention & Control, CDC
Data Sources: NCHS National Vital Statistics System for numbers of deaths; US Census Bureau for population estimates.

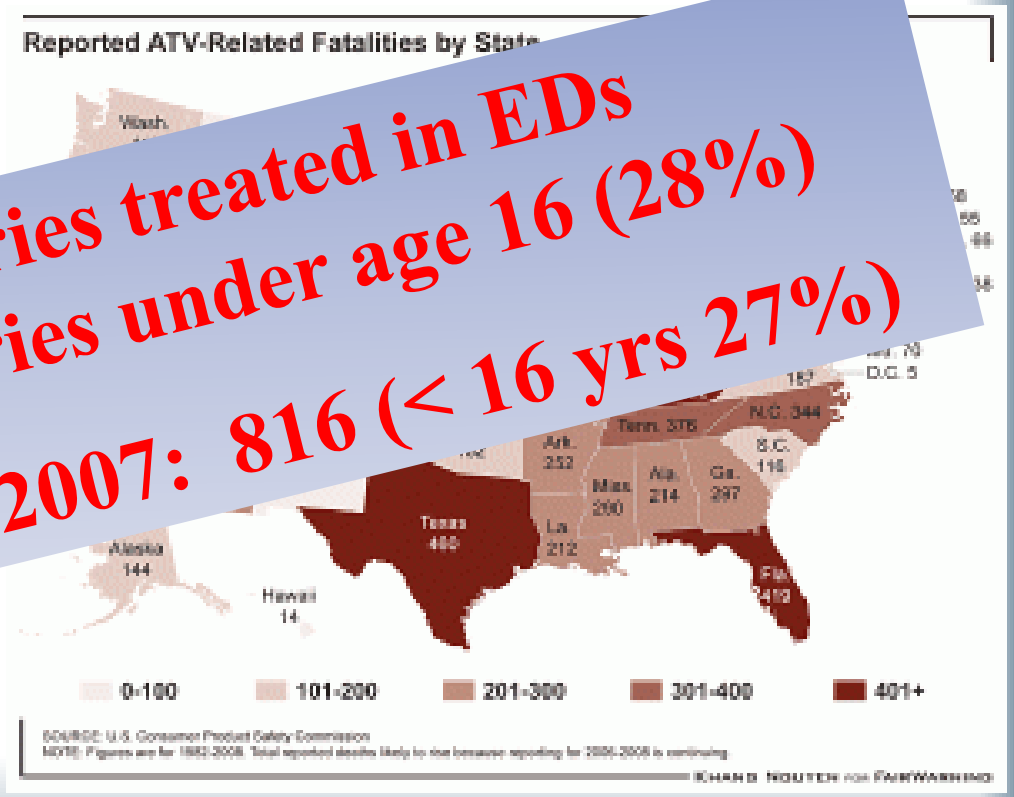
Rural Roads: Contributing Risks

- 42% more fatal crashes in rural areas than urban
- Nearly twice as many fatalities per mile driven
- Only 21% of US population is rural; nearly 60% of road fatalities occur in rural areas
- Rural road crash characteristics:
  - Multiple fatalities
  - More trucks, more head on crashes
  - Ejection--16.7% rural; 7.5% urban
- Higher injury severity, longer retrieval times

DOT Contrasting Rural and Urban Fatal Crashes, 1994-2003

Recreational Risk: ATV Injury

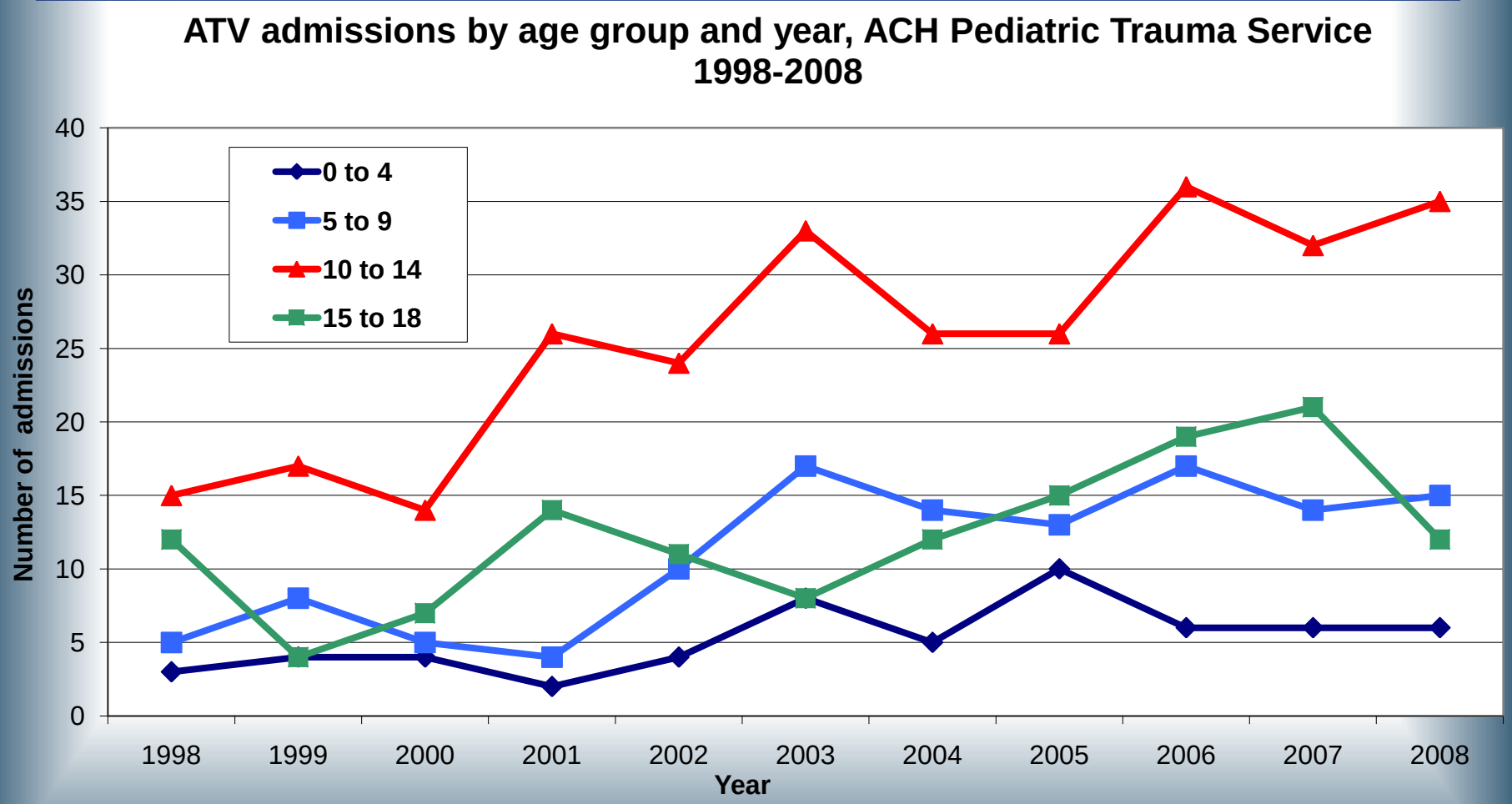




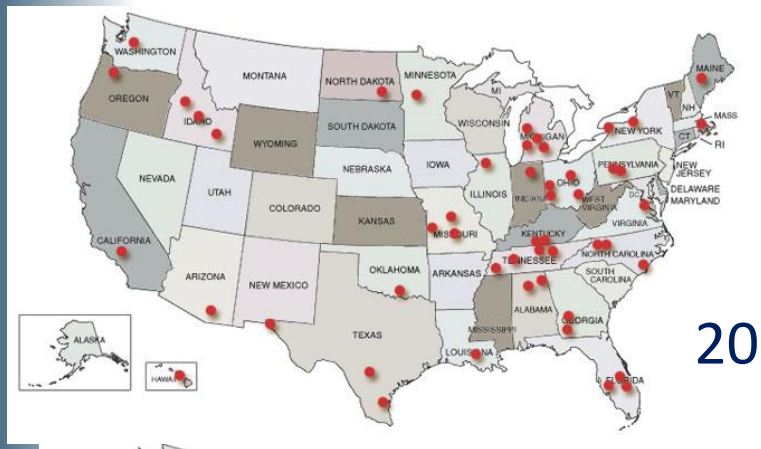
2008: 135,100 injuries treated in EDs
37,700 injuries under age 16 (28%)

Estimated deaths 2007: 816 (< 16 yrs 27%)

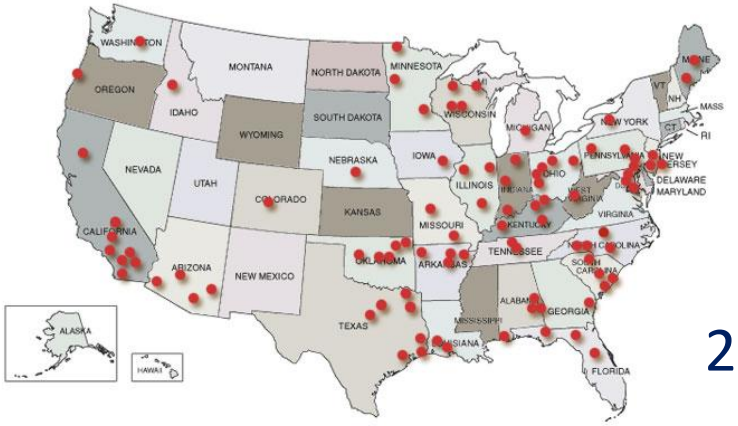
ATV Injury at Arkansas Children's Hospital



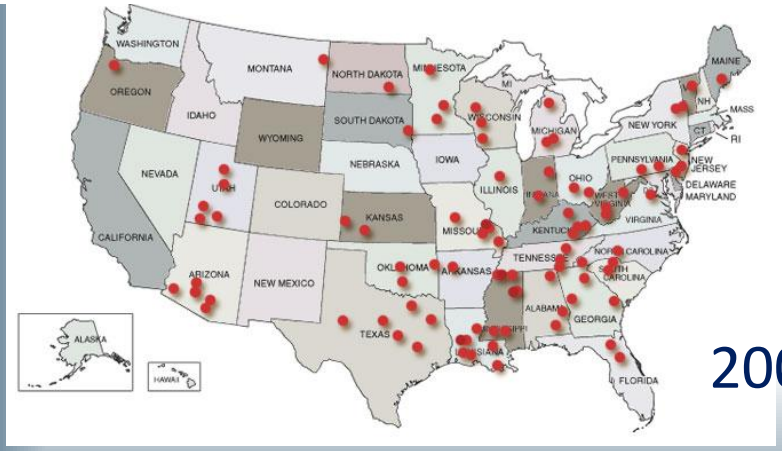
Reported ATV-related Child Deaths



2006



2007



2008

2009

Source: Concerned Families for ATV Safety


CAT

Agricultural Risk

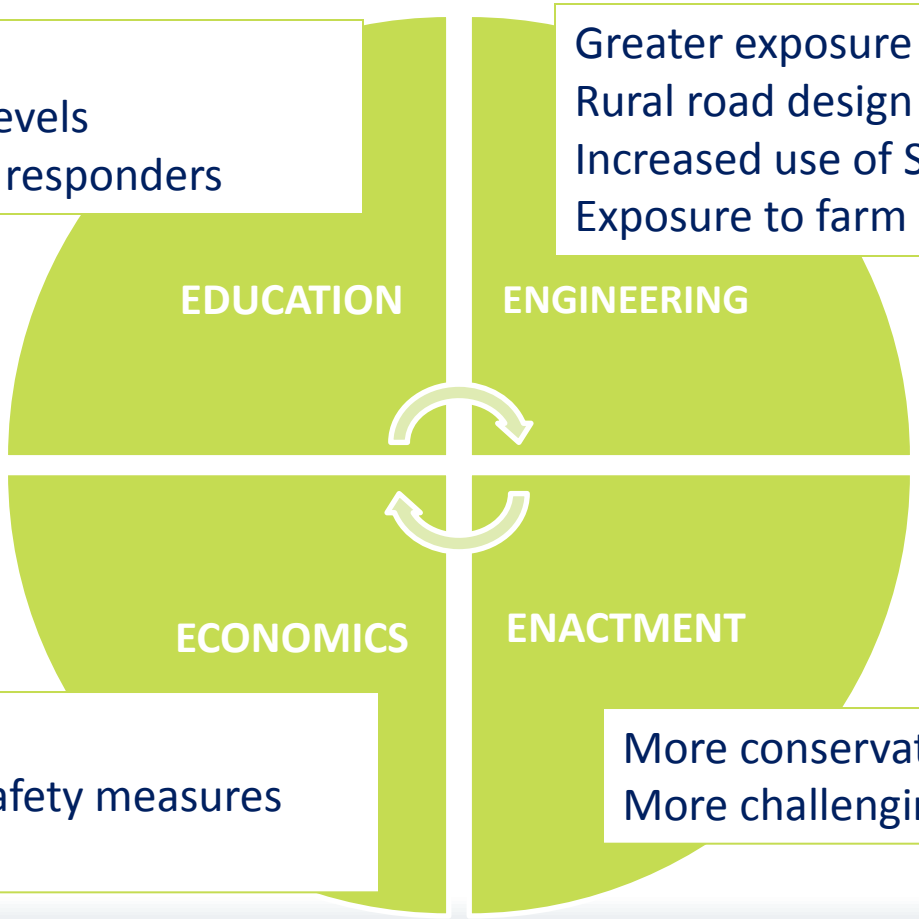
- Farming injury risks:
  - Machinery (tractors most common)
  - Falls (ladders, hay mows)
  - Livestock
  - Asphyxiation (grain bins, silos)
  - All-terrain vehicles

- Children on farms:
  - 22,000 farm injuries in children < 20 annually
  - 50-60% not working at the time of injury
  - No OSHA or other workplace standards

Multiple Strategies for Prevention

Less primary care
Lower educational levels
Less training for first responders

Greater exposure to roads
Rural road design
Increased use of SUVs and trucks
Exposure to farm equipment and ATVs



Lower SES
Lower adoption of safety measures
Vehicle selection

More conservative
More challenging enforcement

Haddon Matrix for Injury Prevention

Injury Phase	Points of Intervention				
	Education	**Engineering**	**Enactment & Enforcement**	**Economics & Environment**	**Empowerment**
Pre-Event					
Event					
Post-Event					

Source: Beverly Miller, IPC

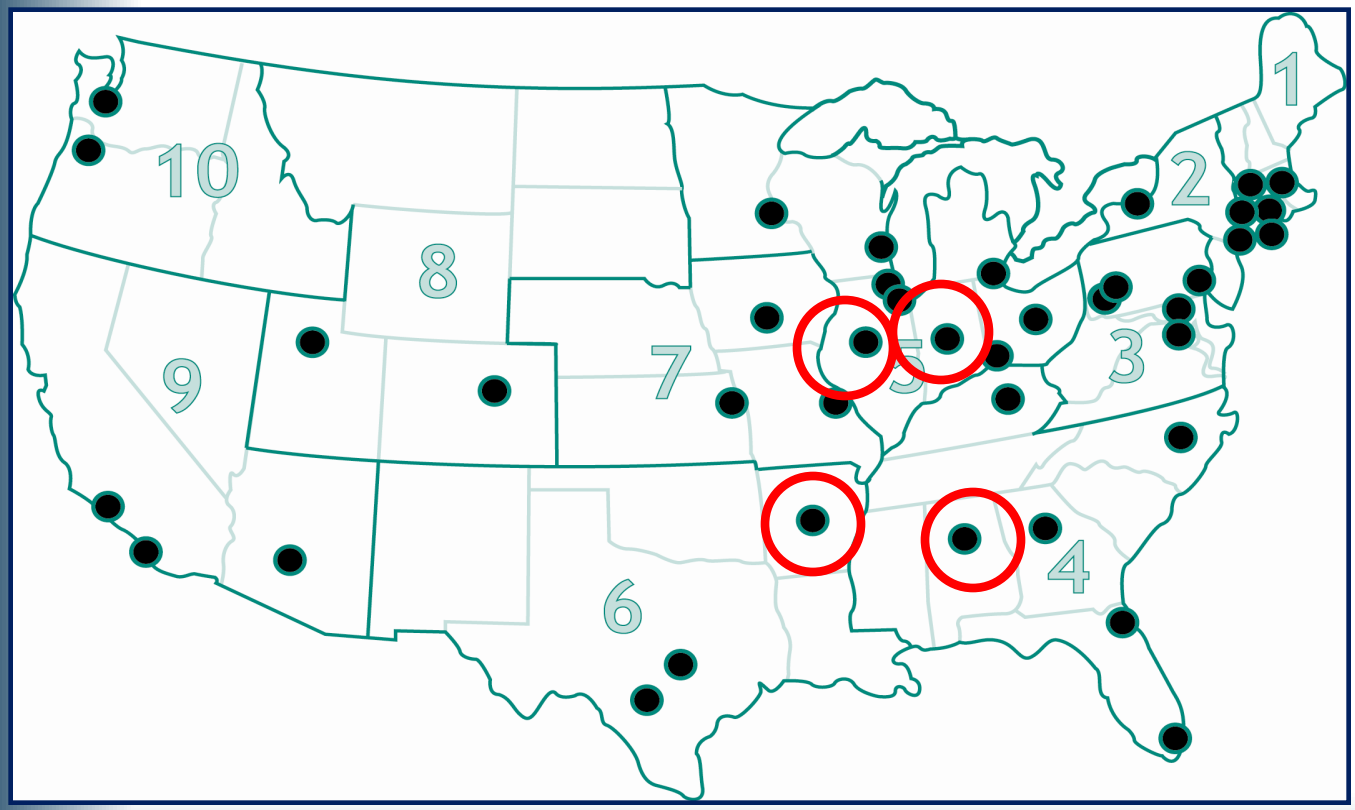
Haddon Injury Matrix in Rural Context

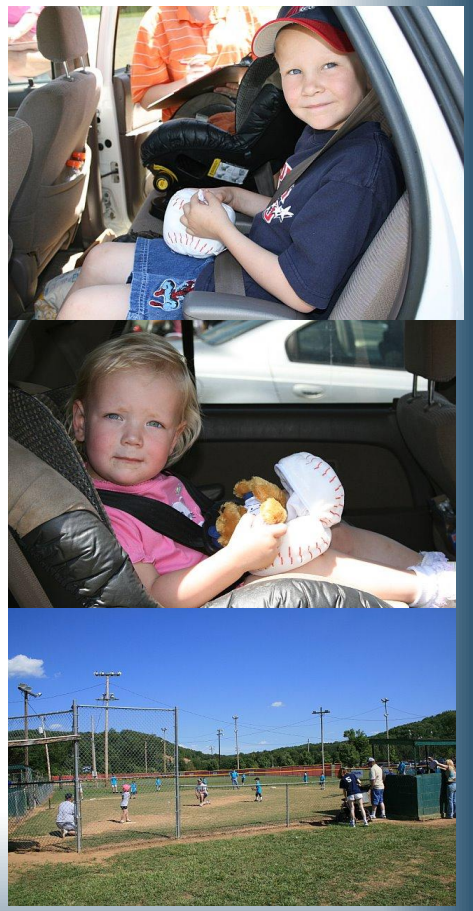
Access Points	Perception , Belief, and Behavior Influences on ATV Safety				
	Education	**Engineering**	**Enactment & Enforcement**	**Economics & Environment**	**Empowerment**
Pre-Event	Limited sources Informal sources may be valued over Authority	Unaware of inherent risks in machines More bang for the buck	Strong belief in personal rights	Access to safety products and training Secondary market	Accidents will happen We take care of our own and make our own decisions
Event	Myths re: helmet use, safety of machines	Unaware of inherent risks in physical environment	Competing priorities for enforcement officers	Choice vs. necessity of use	Lower use of safety gear Overestimating ability
Post-Event	Training of 1st responders	We own the reason for the crash	Value of law = penalty	Access to trauma services	What doesn't kill us will make us stronger

Specific Issues: Program Examples

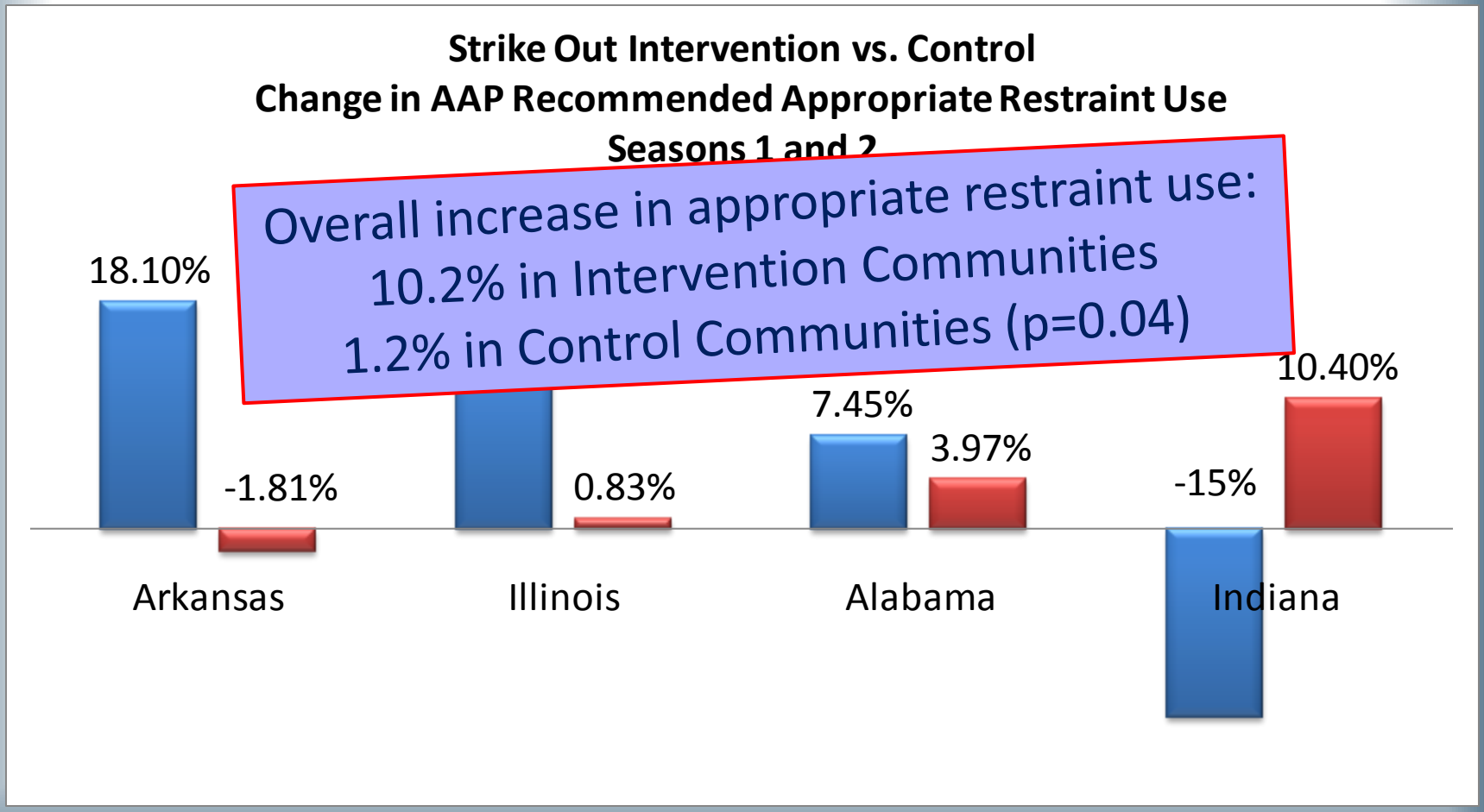
- Motor vehicle safety
  - Booster seat dissemination
  - Statewide child seat training program with satellite program
  - Teen driving coalitions
- Recreational safety
  - ATV safety partnerships

Strike Out Child Passenger Safety

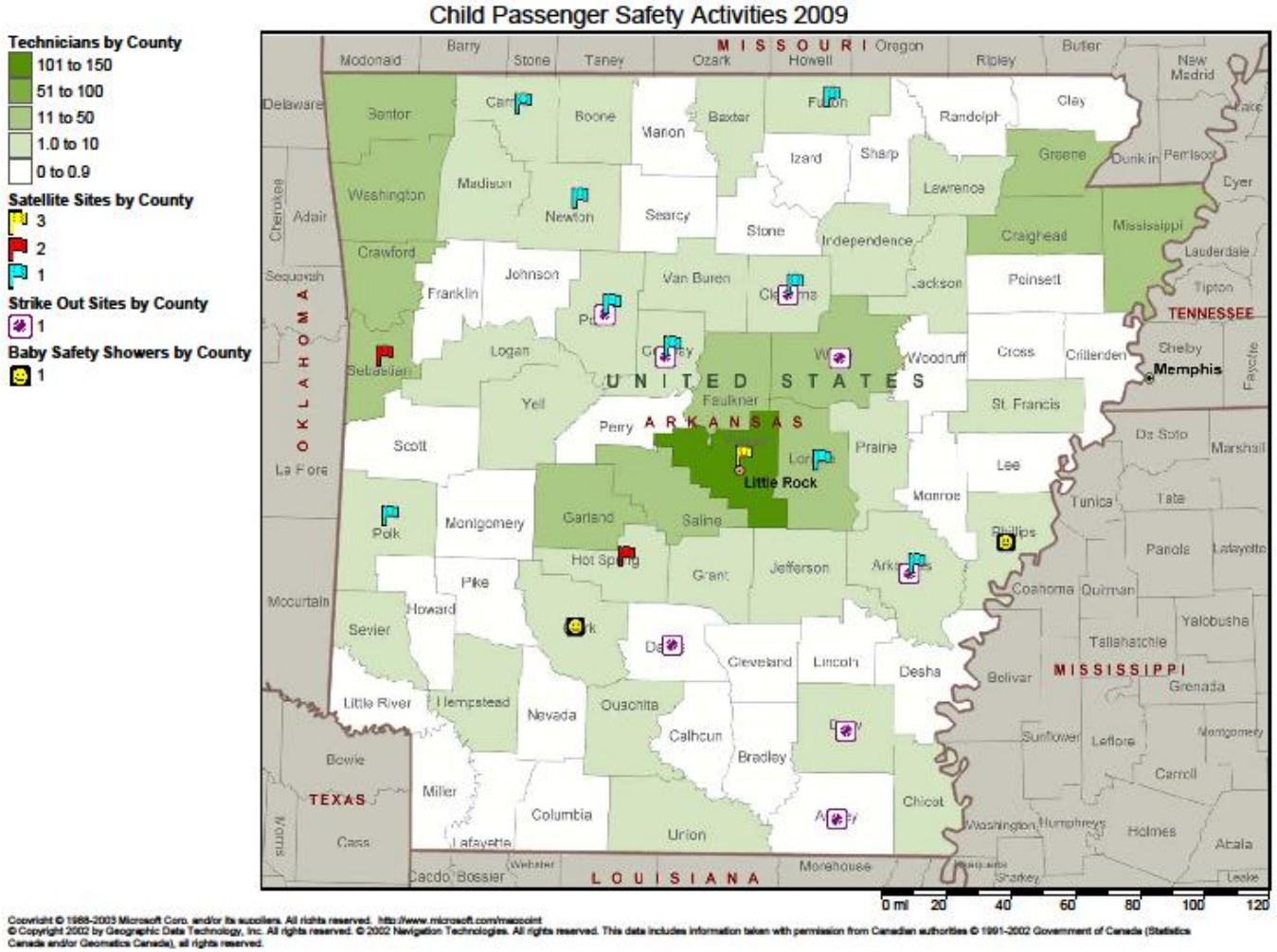




Examples of Rural Interventions for Motor Vehicle Safety



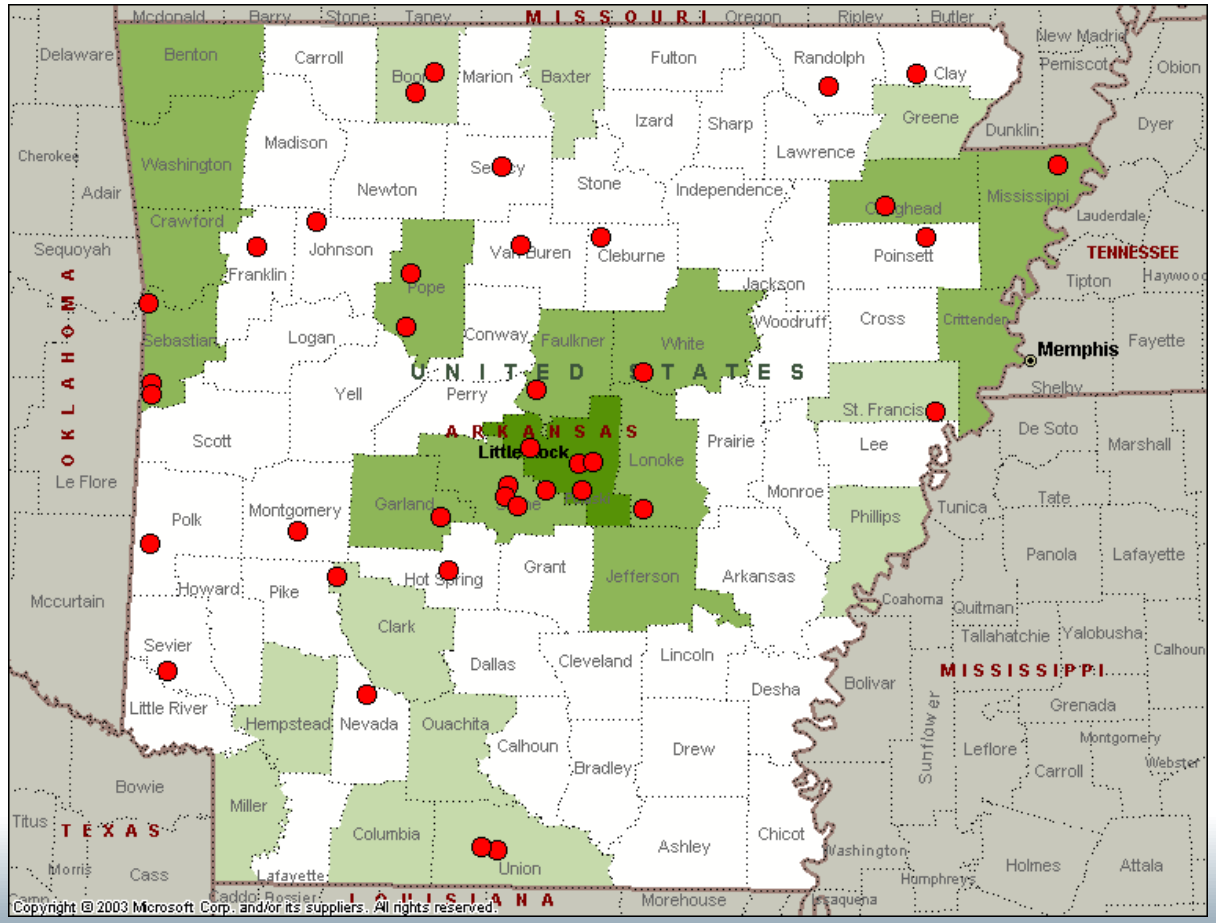
Child Passenger Safety Education



All-terrain Vehicle Safety Program

- Education tailored for specific target groups
- Use of expanded technologies for education delivery including video/DVD, movie theatre trailers
- Serial qualitative and quantitative evaluation of materials

ATV Toolkit Distribution, Pilot

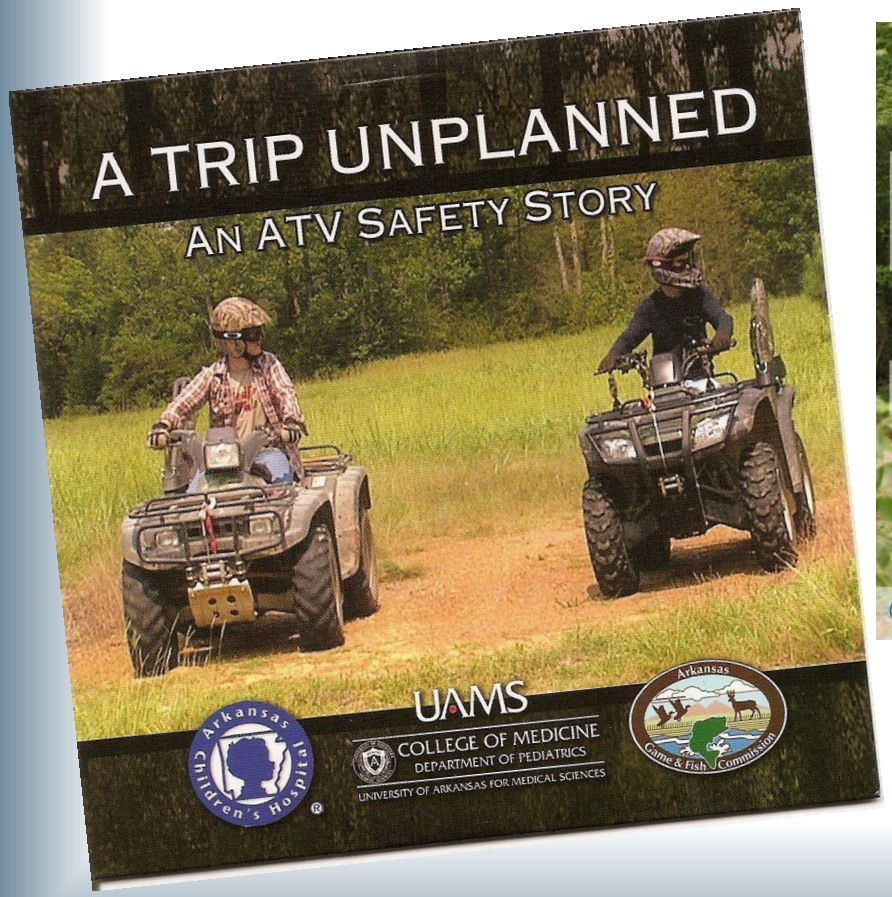


Sources: US Census Bureau, population estimates 2008 www.census.gov
Centers for Disease Control http://wonder.cdc.gov/wonder/help/CMF/Urbanization-Methodology.html

Lessons Learned: Education

- Pragmatic approach to risk reduction
- Credible spokespersons
- Non-traditional venues
- Tailored messaging

Tailored Messaging

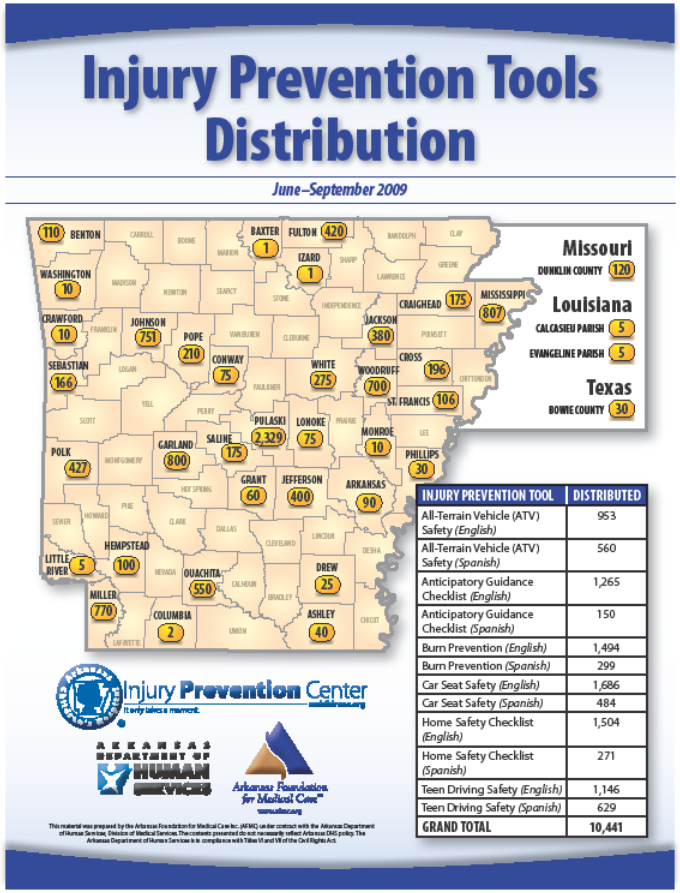


Use Educational Technology

- Interactive internet-based education effective with both patients (prevention and rehabilitation) and with healthcare providers
- Telemedicine
  - ANGELS program reduced perinatal mortality and improved stroke care
  - Professional education
  - Medical consultation

Lessons Learned: Partnership

- Full engagement requires partnership
- Local civic groups, 4-H, Cooperative Extension
- Train-the-trainer model
- Use existing regional networks
- Sustainability: Cultivate local funding and capacity



Lessons Learned: Enactment and Enforcement

- Changes begin with education and engagement
- Start small with local politics
- Influence organizational policy and practice (e.g.: banning ATVs from school property)
- Flexibility is key: work with local norms when this does not weaken policies

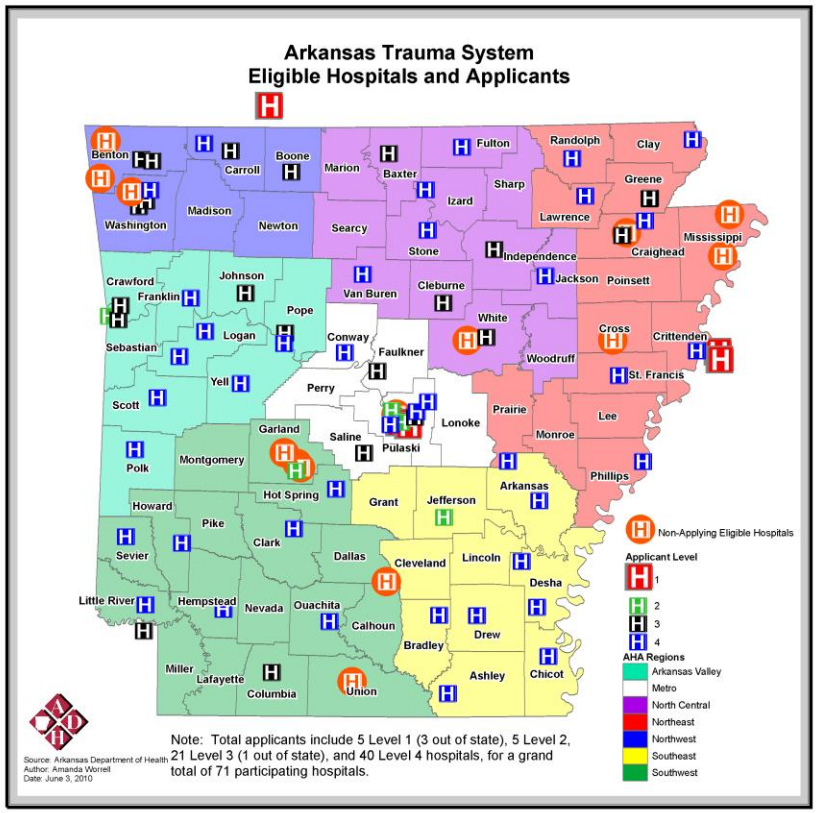
Lessons Learned: Empowerment

- “Should” can sound like a value judgment when it comes from an outsider
- Work through gate keepers and champions
- Build relationships instead of completing tasks
- Stay current on important events in the community



Lessons Learned: Systems

- Quality of care improved in rural hospitals after ATLS training (Olson, 2001)
- In-hospital death rates lower in rural hospitals that are designated trauma centers (Bowman, 2008)
- Full engagement and training are critical in rural settings
- Technical assistance to build local capacity



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State Level Action on a Rural Injury Issue: Vermont's Experience

Guidance • Support • Prevention • Protection

Sally Kerschner, MSN, RN

CSN June, 2010

VERMONT
DEPARTMENT OF HEALTH

Overview of Community of Practice Process in Vermont

- IVP/MCH realization that Vt needed to combine some efforts to advance projects
- Close relations with MCH/IVP/Rural Health
- CSN has always been seen as a resource
- Less capacity so more intense need to leverage partnerships and existing programs
- Culture of collaboration in Vermont in order to get things done

Overview of Process using the Public Health Model

- Awareness of Problem
- Define the problem using data, research
- Investigate what is being done presently
- Recognize strengths of existing programs within the system
- Create/Leverage partnerships
- Plan/Implement public health interventions
- Evaluation and Modification of Programs

Awareness of Issues with ATV Use and Safety

- Qualitative feedback from discussions with health care providers
- Proposed new state regulations allowing use of public land to link with private trails
- Able to access better data via newer data sets (such as ED)

Vermont ATV Related Deaths and Injuries

- 28 ATV deaths in Vt for 2002-2007, all ages
- 15-20 age had the highest number of deaths
- ATV related hospitalizations for 2002-2007 was 245 (avg 41/yr)
- Hospitalization rate for males was 6X the number for females (11.5 vs. 2.0)
- ATV Related Rates of ED visits for males was 4X the female rate (108.2 vs 26.7)

Define the Problem

- Why prioritize ATV?
- Data show that ATV related M&M is significant injury issue for Vermont
- Intense interest by health and safety professionals
- Existing system has strengths on which to build
- Able to easily leverage partners
- Increasing use in both recreational and occupational
- Culture of ATV use in rural areas

Assessment of Existing Programs Related to ATV Safety: Trainings

- State Police - on-line
- Dept of Fish and Wildlife - on machine
- ATV Dealers
- VASA (Vt ATV association)
  - Developing classes geared to youth
- 4H
- All efforts have certain strengths, but no one program is well-funded or has sufficient capacity

Assessment of Existing Programs Related to ATV Safety: Education

- Assorted ATV print materials
- No comprehensive system for production and dissemination of quality information
- Need for education of parents, youth, adult riders
- Need for education of professionals such as school personnel and health care providers
- No comprehensive or adequate funding source

Vermont Opportunities to Collaborate: Create/leverage Partnerships

- UVM Extension/4H
- Farm Health task Force
- Safe Kids Vermont
- AAP/AAFP
- VDH District Offices
- VSP/Fish and Wildlife
- EMS
- VASA
- NYCAMH (New York Center for Agricultural Medicine and Health)

Vermont Opportunities to Act on ATV as a Public Health Issue

- Injury Coordinator is coordinator for TV/MCH and participates on CDR Team
- Injury Coordinator works with Rural Health
- Injury Coordinator participates in Farm Health Task Force
- Developing relationships with NYCAMH
- Safe Kids desire to strengthen activities in injury prevention

Plan/Implement PH Interventions: Process

- Community of Practice Conference Call July 2009 with Injury Prevention Team at Arkansas Children's Hospital
- Community of Practice In-Person Meeting in Massachusetts Sept 2009 with SafeKids as partner
- Included information in Injury Symposium Oct 2009
- Discussed at New England CDR Meeting Oct 2009
- Meet with Safe Kids Vt for planning Nov 2009
- First ATV-specific meeting January 2010
- Coordination via conference calls
- Meet with Safe Kids/EMS March 2010

Plan/Implement: Activities at Present

- Collaboration with Safe Kids Vermont
- 4H interviews with adult ATV users
- 4H interviews with youth users
- Survey in mall at health fair March 2010
- Include in 2010 Injury Prevention Plan (identified as core focus area in 2008 application)
- Include in TV MCH Strengths and Needs Assessment
- Creating injury-related SPM for 2010 SNA
- Coordinate with New Hampshire and Maine

Plan/Implement: Next Steps

- Create educational materials from focus groups and previously developed materials
- Training program system to be strengthened by VASA/VSP
- Increased role of 4H via grant support
- Dissemination of educational materials by EMS, Health Care Providers, Schools (EPSDT)
- Vermont Injury Prevention Symposium Fall 2010 on Agriculturally Related Injuries

Evaluation

- Determining process measures
- Difficult to create valid population-based measures
- Consider adding ATV related question to YRBS
- Arkansas evaluation of media materials

Contacts/Resources

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  - Mary Aitken: AitkenMaryE@uams.edu
- Vermont Department of Health
  - Sally Kerschner: skersch@ahs.state.vt.us
- Safe Kids Vermont:
  - Catherine Suiter: Vtsafekids@vtmednet.org
- New York Center for Agricultural Medicine and Health www.nycamh.com/
- CSN: www.ChildrensSafetyNetwork.org