Public Health Delivery Systems In Action: The Role of Public Health, Primary Care, and Policy
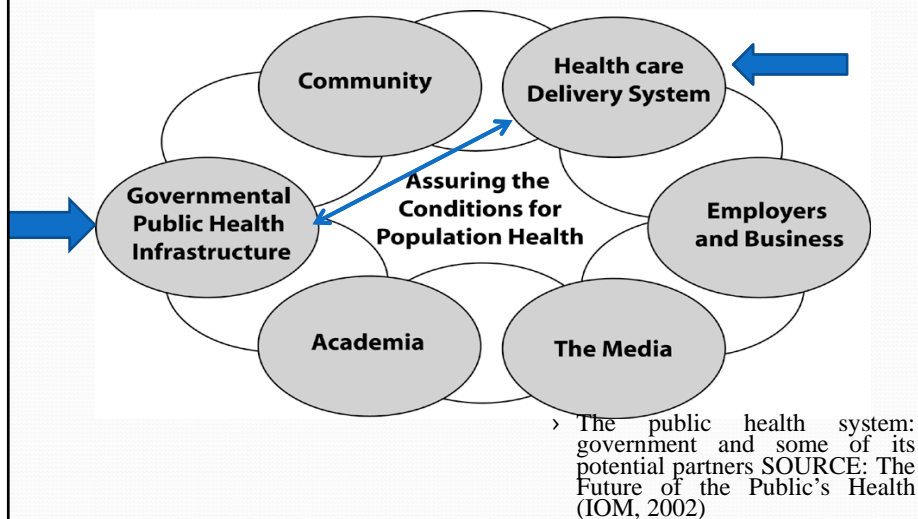
Sharla Smith, PhD, MPH
Preventive Medicine and Public Health
University of Kansas School of Medicine-Wichita

Outline

- Public health delivery systems
- Public health systems research
- The role of primary care and policy
- Frameworks
- Social network analysis
- Methods
- Preliminary findings
- Conclusions
- Next steps

Public Health Delivery Systems

› The public health system: government and some of its potential partners SOURCE: The Future of the Public's Health (IOM, 2002)

Public Health Systems

- Frameworks:
  - Mission
    - Goals and how goals are operationalized
  - Structure
    - Cumulative resources and relationships
  - Process
    - Key processes to identify, address, and prioritize population health problems
  - Outcome
    - Immediate and long term changes experienced by families and communities

Public Health Systems Research

- Is a field of study that examines the organization, financing, and delivery of public health services within a community and the impact of those services on public health.

Scutchfield, Mays, and Halverson, 2003

Public Health Systems Research

- An important area for public health and preventive medicine to pursue.
  - Those in preventive medicine can take the lead in focusing on improving population health.
  - Physicians involved in public health departments are committed to the ten essential services.

Scutchfield and Patrick, 2007

Public Health System Partnership

- Defined as: "Collaborative, synergistic alliances that include the LHD and one or more other public health system partners, which work to improve health and/or health care services in an identified need or problem area and in an identified geographic area." Zahner S, 2012

- Partnership is defined in this study as a formal long or short-term relationship between two organizations that pool funds, skills and/or resources together to achieve a public health goal.

Framework

- The Wholey et al explains service delivery, public health system partnerships, delivery systems, impact on health status.

Wholey et al, 2009

Social Network Analysis

- Social network analysis:
  - *nodes* (represent organizations)
  - *ties* (represent relationships between organizations)
- Two key measures of SNA used to examine partnerships:
  - Density
  - Organizational Centrality

Density and Centrality

- Density
  - density is simply the number of connections divided by the number of possible connections.

- Organizational Centrality
  - Centralization is the degree to which a LHD is centrally located within the system.
 - Centralization measures the position of an organization in a partnership.

    - Wholey et al, 2009

Approach

- The integration of primary care and public health could enhance the capacity of both sectors to carry out their respective missions and link with other stakeholders, policy makers and organizations, to catalyze a collaborative, intersectoral movement toward improved population health.
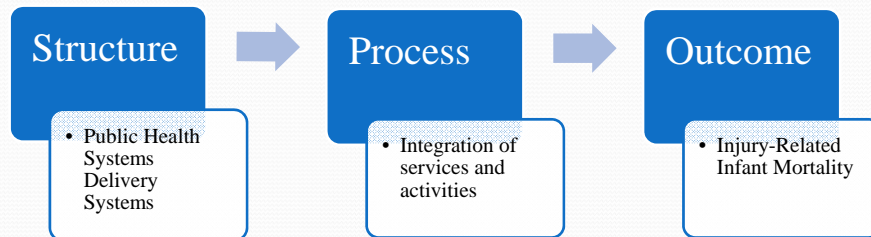
Rowan, 2007

Fundamental empirical questions
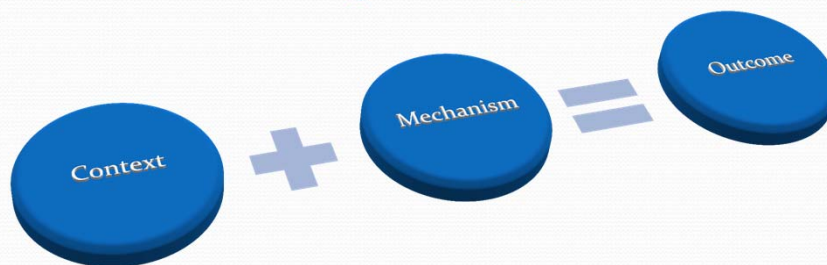
❏Which programs, intervention, and policies (mechanisms)
❏Work best (outcomes)
❏In which community settings (contexts)
❏And Why (causal pathways, interactions)?

Pawson and Tilley, 1997

Conceptual Model

| Structure	→	Process	→	Outcome
• Public Health Systems Delivery Systems		• Integration of services and activities		• Injury-Related Infant Mortality

Significance

- Unintentional injury is the 5th leading cause of infant mortality in the US.
- The US unintentional injuries mortality rate for infants was 3.1 per 1,000 live births in 2010.
- The most common cause of injury-related infant mortality include suffocation, motor vehicle crashes, drowning, fire/burns, and poisoning.
- By working together and creating an integrated delivery system, public health and primary care (PHPC), that leverages their strengths, these agencies can conserve resources by reducing duplication and sharing expenses, fostering cooperation between diverse sectors of society, and achieving the capacity to deliver superior services to care for our communities and the nation.
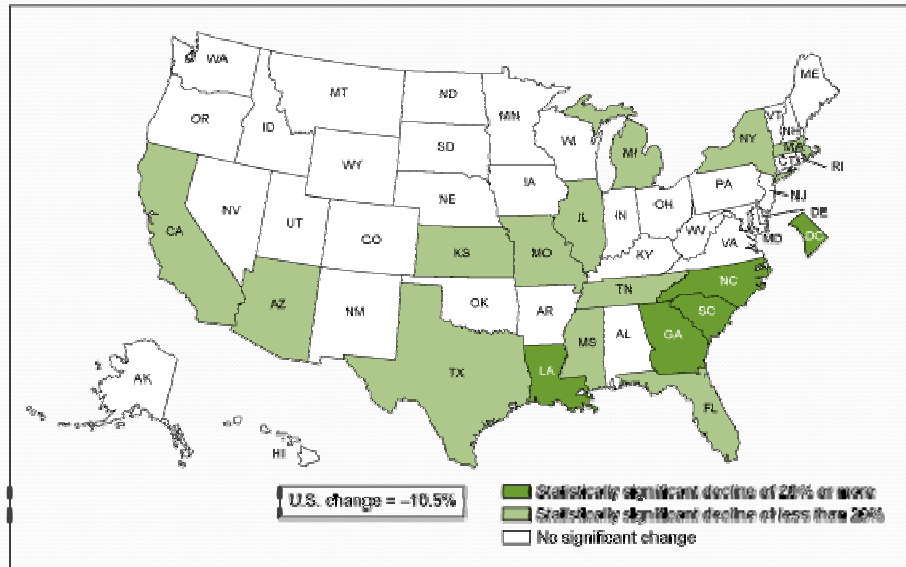
Infant Mortality

Figure 1. Infant, neonatal, and postneonatal mortality rates: United States, 2000 and 2005–2011
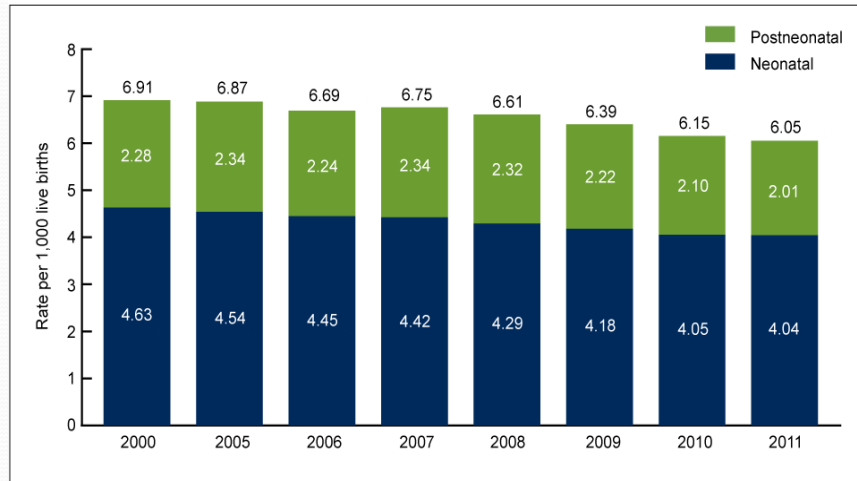
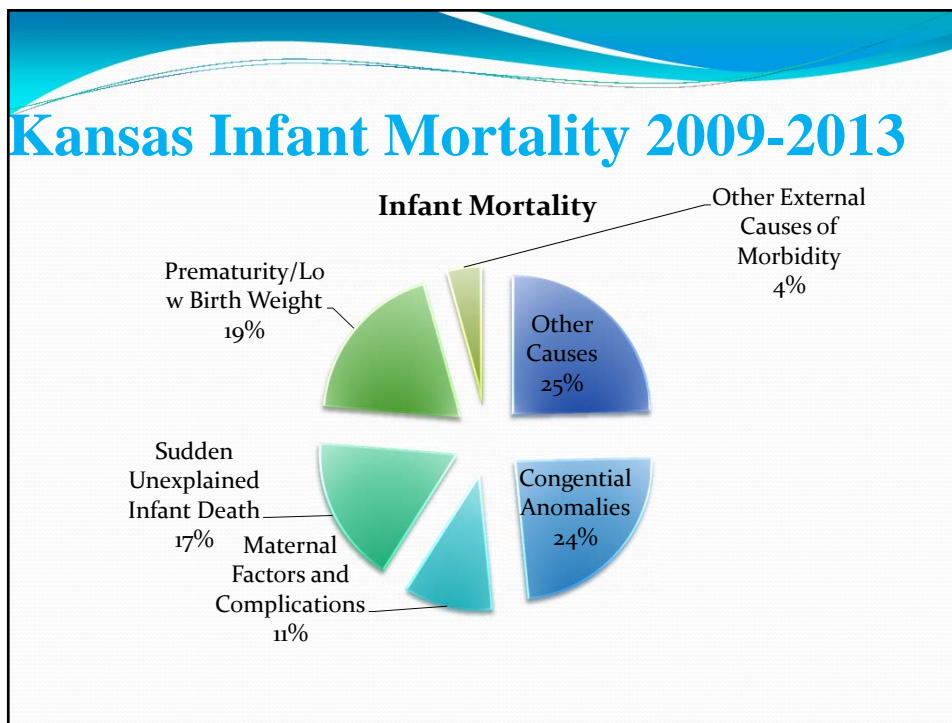# Infant Mortality Declines from 2005-2010

Infant Mortality in Kansas

- Each year, about 250 Kansas babies die before their first birthday.
- During the past 20 years, Kansas infant mortality rates have been higher than national rates.
- In Kansas, and nationally, black infant mortality rates have remained twice those of whites in most years.

Disparities

	Kansas (2013)
White-Non-Hispanic	4.9
Black-Non-Hispanic	15.3
Hispanic	7.2
% of Black births	14.3%

Kansas Infant Mortality 2009-2013

Infant Mortality

Other External Causes of Morbidity
4%

Prematurity/Lo w Birth Weight
19%

Other Causes
25%

Sudden Unexplained Infant Death
17%

Maternal Factors and Complications
11%

Congential Anomalies
24%

Goals

- To provide a better understanding of public health and primary care delivery systems and how such delivery systems are associated with injury-related infant mortality among vulnerable populations.

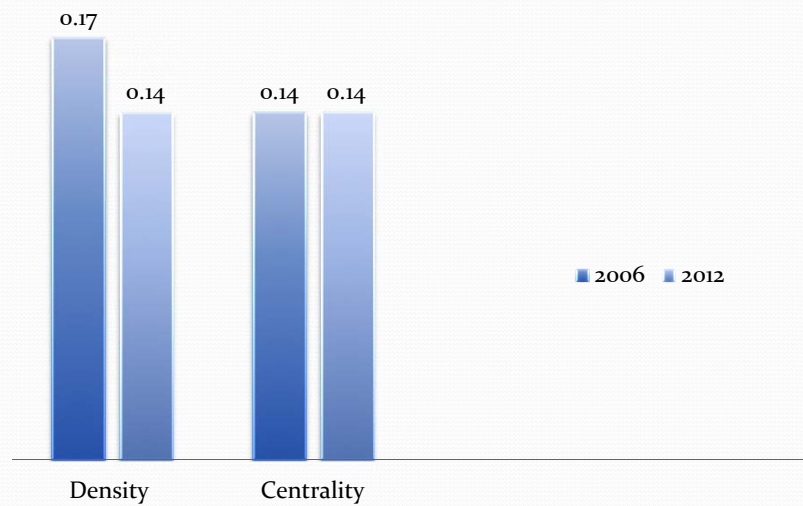- Identify the role of policy in the injury-related infant mortality.

Data

- National Longitudinal Study of Public Health Agencies (NLSPHA) survey data (2006 and 2012) coupled with NACCHO national public health agency Profile, and Area Resource File.

- Interview data from the 2014 Injury Prevention Partnerships among vulnerable populations study.
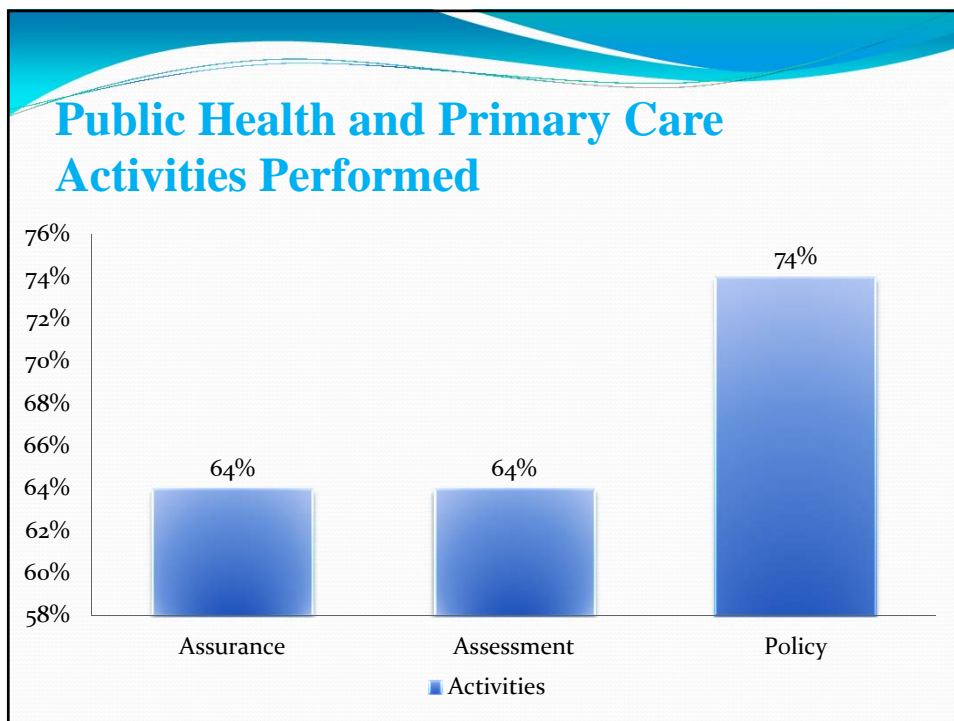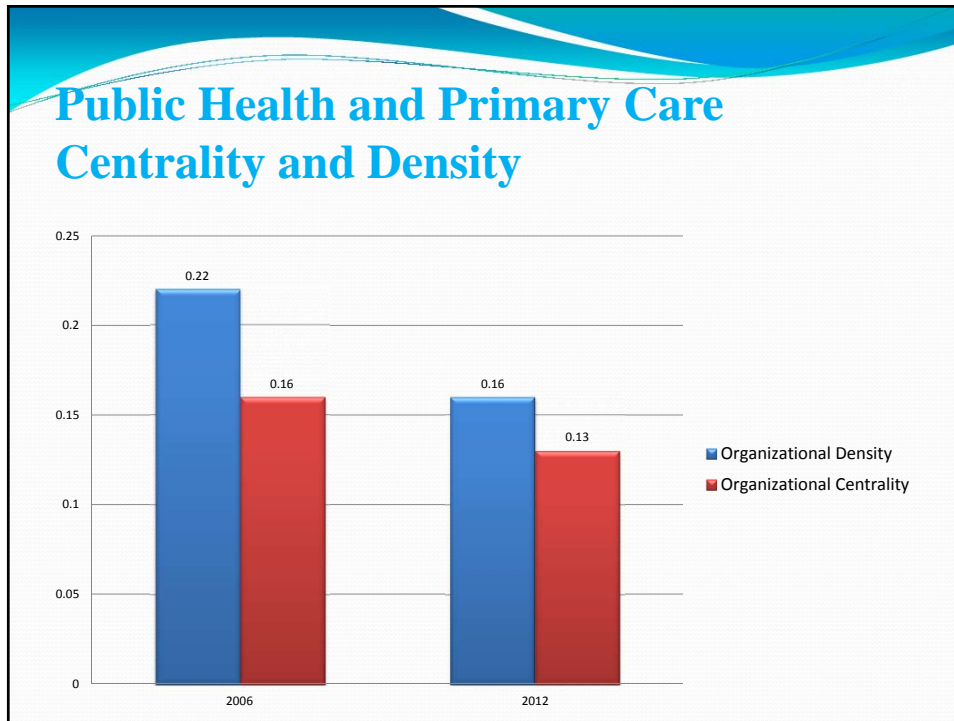
Findings from the NLSPHA

Type of Delivery Systems

Type of Organization	2006(232)		2012(239)
	Mean	Difference (2006-2012)	Mean
Community Health Clinics	**0.29**	**-2**	**0.27**
Employers/Business Group	0.17	-5	0.13
Faith Based Organization	0.19	-3	0.16
Federal Government Agency	0.12	-3	0.09
Health Insurance Agency	0.10	0	0.10
Hospital	**0.41**	**-2**	**0.39**
Local Government Agency	0.51	-25	0.26
None	***N/A***	***+2***	***0.02***
Other	0.09	-4	0.05
Other State Health	0.45	-9	0.36
Physician Agency	**0.24**	**-5**	**0.19**
State Agencies (Other)	0.16	-3	0.13
Schools (K-12)	0.28	-3	0.25
State Health Agency	0.47	0-8	0.39
University/College	.13	-13	N/A

Centrality and Density Measures for 2006 and 2012

0.17   0.14   0.14   0.14

■ 2006   ■ 2012

Density   Centrality

Public Health and Primary Care Centrality and Density

Public Health and Primary Care Activities Performed

Variable	2006 N=232		2012 N=239
Partnership Type	Mean	Difference (2006-2012)	Mean
Partnership Density	.17	-3	.14**
Organizational Centrality	.14*	0	.14
LHD characteristics			
Expenditures per capita	40.82*	+5	45.63***
Full time employee	54.24*	0	54.90
Board of health (%)	0.48**	+13	0.61**
Scope of Public Health Services			
Population	**.56****	**-30**	**0.26****
Prevention	**.76****	**-41**	**0.35****
Regulatory	.63**	-34	0.29**
Environmental Health	.40**	-20	0.20**
Treatment	.50**	-25	0.25**
Specialty	.38**	-13	0.25**

Variable	2006 N=232		2012 N=239
Partnership Type	**Mean**	**Difference (2006-2012)**	**Mean**
Community Characteristics			
Population	493,853	-11,066	482,787
Non-Whites (%)	27.14**	+1	28***
College Graduates (%)	**24.69**	**-4**	**20.21***
Income Per capita	**30690.5***	**-3,921**	**34611.2***
Unemployment	5.40	+3	8.53***
Uninsured (%)	**13.17**	**+2**	**15.47***
Poverty (%)	**10.69***	**+5**	**15.91***

Preventive Services for Injuries
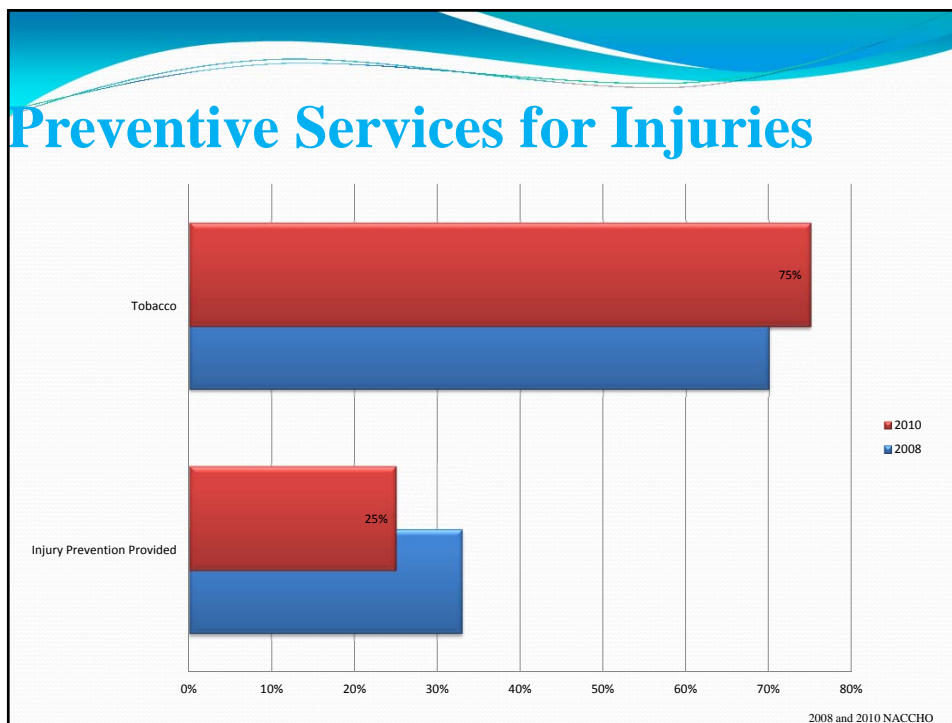
2008 and 2010 NACCHO

Findings For Kansas

Centrality and Density Measures for 2006 and 2012

Density: 2006 = 0.12, 2012 = 0.29

Centrality: 2006 = 0.13, 2012 = 0.15

Legend: 2006, 2012

N=4

Kansas Public Health and Primary Care Activities Performed

Assurance: 90%

Assessment: 77%

Policy: 62%

Legend: Activities

N=4
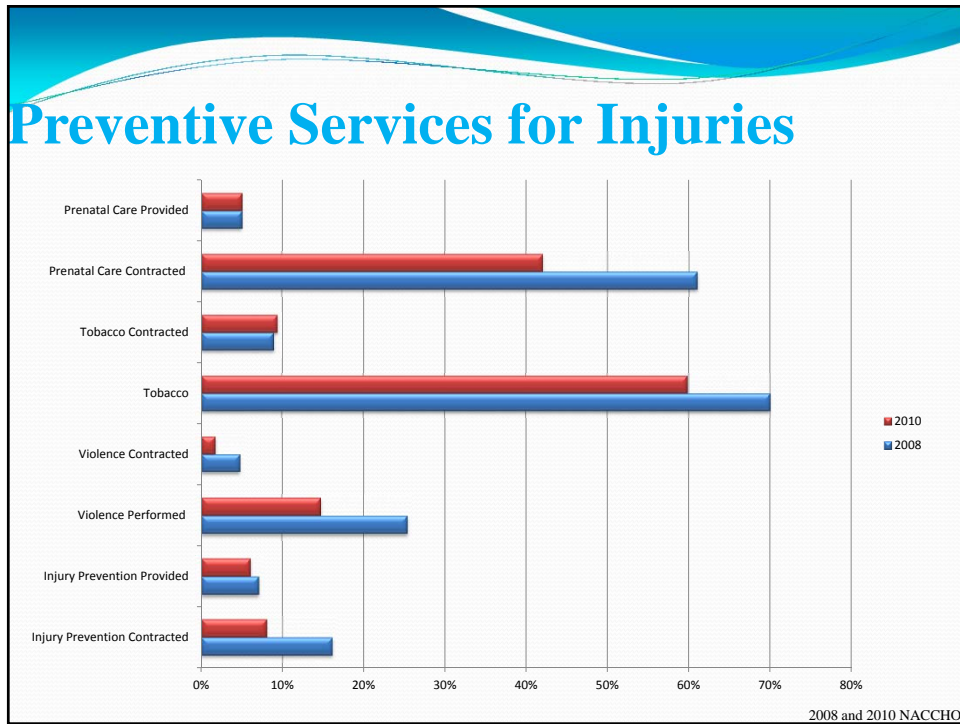
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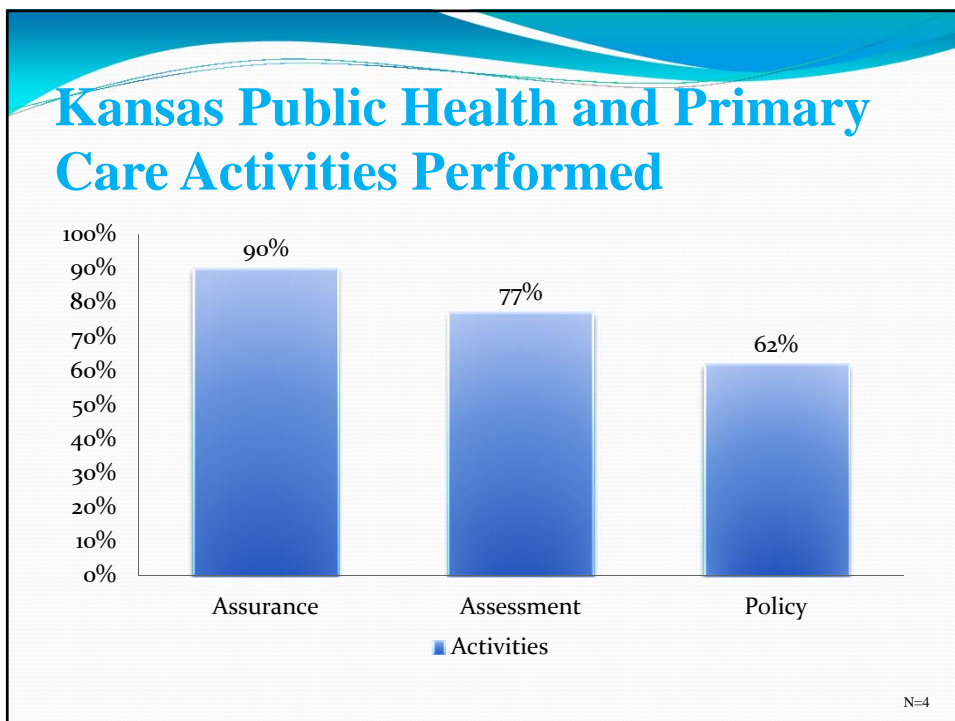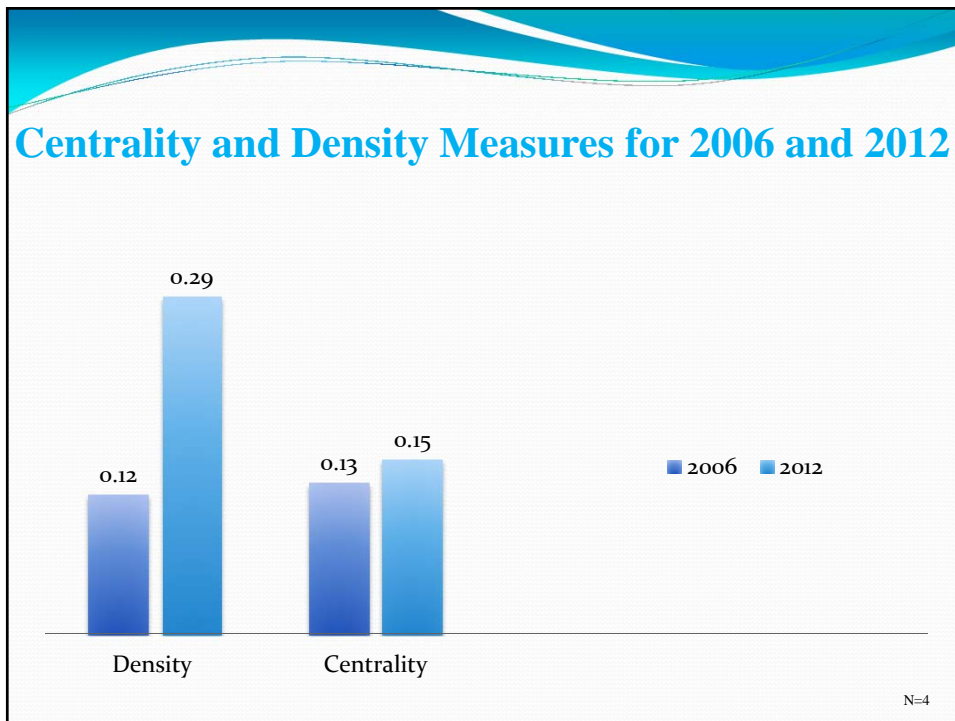
The Role of Policy: Findings from Arkansas

- The study population included 12 organizations. Two organizations are policy organizations but only one organization currently advocates for injury related infant programs and activities.

- Participating organizations indicated whether or not they work with organizations such as community health clinics, policy organizations, and public health agencies.
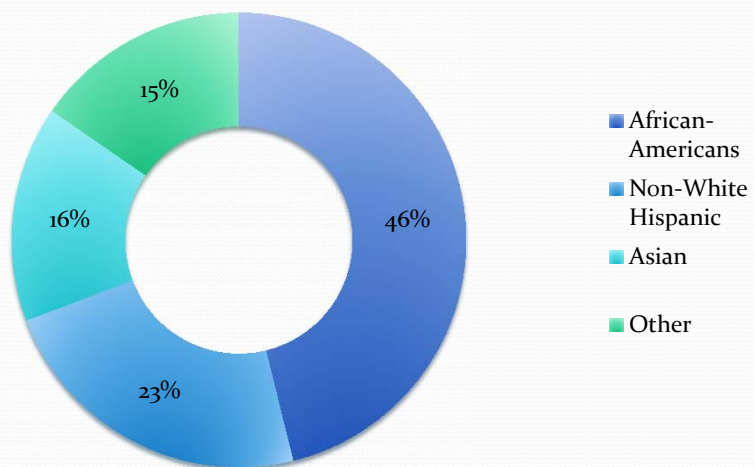
Significance

- Unintentional injuries are a major public health problem in the United States and Arkansas.
- Arkansas has higher rates of injury-related infant mortality and hospitalization than the nation as a whole.
- It is widely believed that injury prevention efforts work best when supported by legislative solutions that can only be implemented by well-informed policy makers.
- By working together and creating an integrated system, Policy makers can benefit from the use of public health research and the support of primary care providers to make informed policy decisions to improve the effectiveness of state public health programs and improve population health.
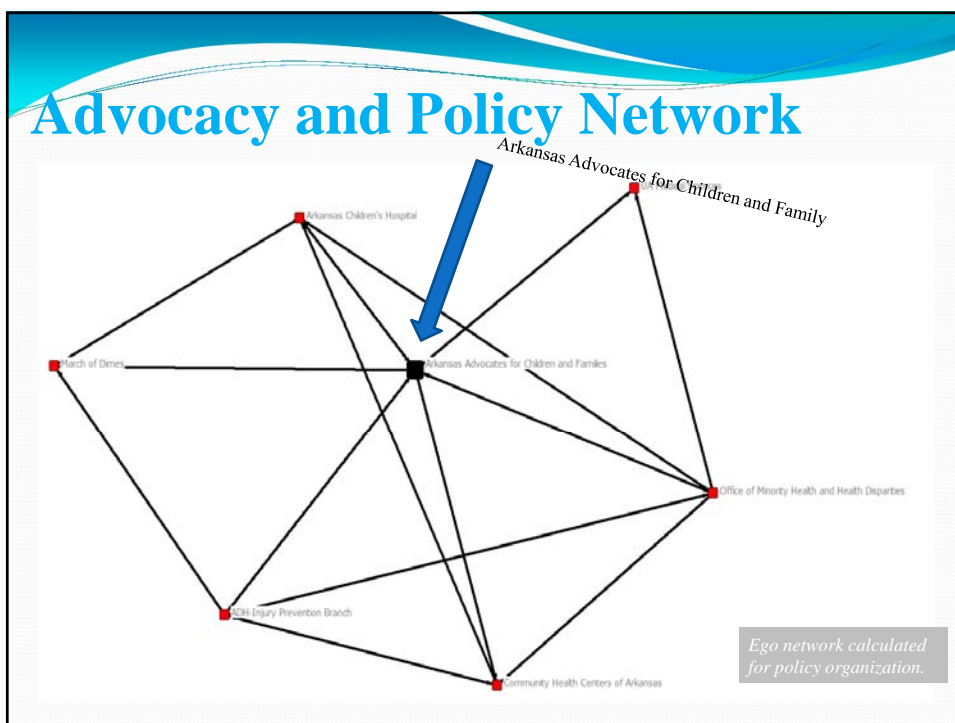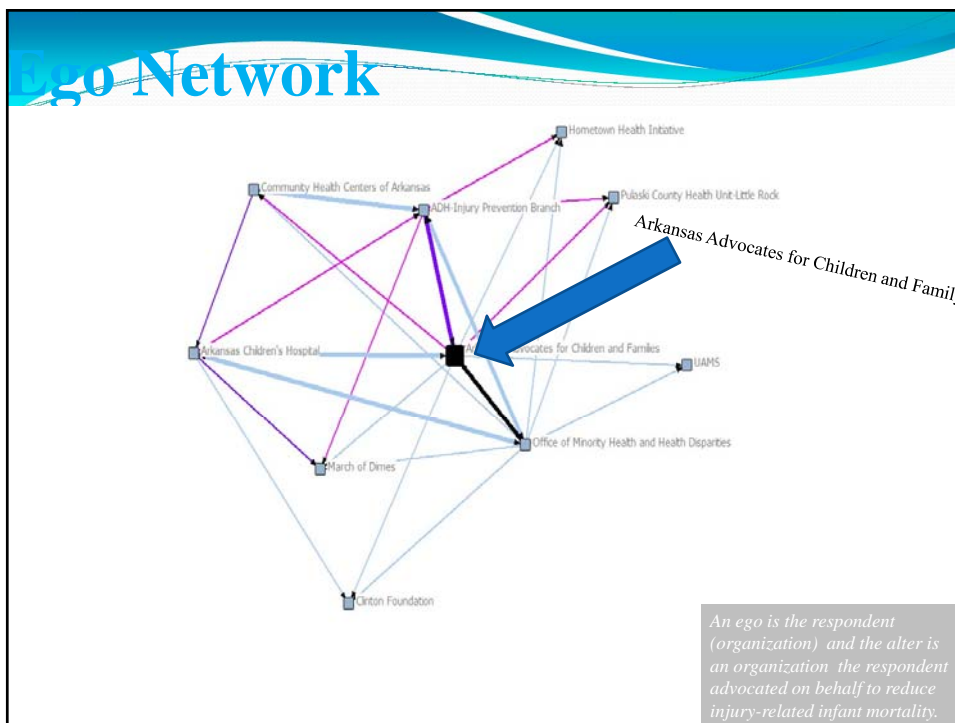
Methods

- A cross sectional survey was administered to identify policy makers' awareness of injury-related infant deaths and their collaborative efforts with public health and primary care agencies to address injury related infant mortality.

- Interview data were coded to identify themes and assess patterns of variation between clusters.

- Network analysis is conducted to discover the relationships between a set of public health and policy organizations.

Findings from the Interview

Minority Population Represented

- African-Americans
- Non-White Hispanic
- Asian
- Other

15%

46%

16%

23%

Ego Network

An ego is the respondent (organization) and the alter is an organization the respondent advocated on behalf to reduce injury-related infant mortality.

Advocacy and Policy Network

Ego network calculated for policy organization.

Frequency of Interactions

Bold lines indicated frequency of interaction is every few weeks.

Level of Importance

Organizations that were indicated as very important in efforts to reduce injury related infant mortality are indicated by darker lines and larger arrows.

Level of Importance-Ego

Community Health Centers of Arkansas

Arkansas Children's Hospital

Office of Minority Helth and Health Disparities

Pulaski County Health Unit-N. Little Rock

Hometown Health Intiative

Pulaski County Health Unit-Little Rock

March_of_Dimes

Arkansas Advocates for Children and Families

ADH-Injury Prevention Branch

UA Medical Sciences

Clinton Foundation

Ego network calculated for policy organization.

Additional Findings

- Policy organizations indicated their activities for injury related infant mortality are reporting and monitoring data, lobbying for legislation, and providing resources to community health clinics.

- Policy organizations advocate for increasing access to health coverage and care and behavior work for pregnant women.

- Policy organizations indicated that the most effective services are those provided to immigrant families.

- Policy organizations indicated that the populations at greater risk for injury related infant mortality are African-Americans and single parent households.

- Policy organizations indicated the most effective preventive strategies are increased education and awareness.

Conclusions

- LHDs provide a limit number of prenatal and injury prevention services. These findings highlight the importance of working together with other agencies to reduce the injury-related infant mortality rate.

- Prevention programs that take into account the vulnerability of children and use a multidisciplinary approach have been shown to be the most effective for reducing child mortality as a result of injury.

- Policy organizations are very instrumental in supporting legislation to improve maternal and infant health.

- Policy organizations allocate twenty-five percent of their efforts to advocating for maternal age women and infants.

- Policy organizations distribute and share resources with many organizations to strengthen efforts to improve population health.

Policy and Practice Implications

- Policy makers should consider developing policies to assist public health agencies with improving their management of partnerships and with providing sufficient resources to support their partnerships.
- Establish mechanism to overcome challenges faced in sustaining effective partnerships.
- More effort may also be needed to maximize the collaborative potential for the partnerships

- Practice Implications
  - It is critical to establish a shared understanding of the nature, scope, and context of injury related infant mortality within each community in order to build successful partnerships.
  - It is vital to develop partnerships with primary care agencies to provide a broader scale and scope of MCH services.

Next Steps

- Complete Interviews (in progress) and Include data from all interviews

- Expand on quantitative visualization of public health, primary care, and policy networks.

- Examine the role of public health, primary care, and policy networks in developing a culture of health.

- Identify high and low performing delivery systems and implement interventions to address injury-related infant mortality in Kansas.

Fundamental empirical questions
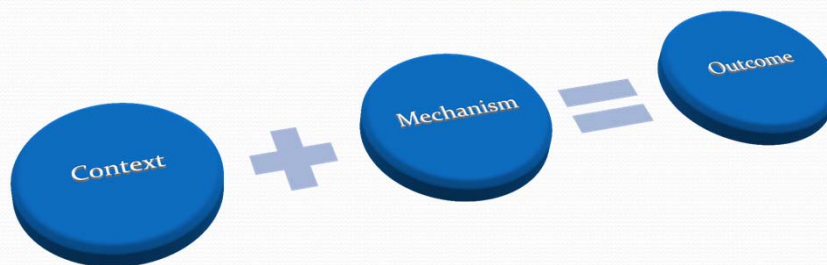
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Pawson and Tilley, 1997

Questions

Culture of Health: The Role of Public Health Systems Research

- Building a Shared Value of Health
  - Mindset and Expectations
  - Sense of Community
  - Civic Engagement

- Fostering Collaboration to Improve Well-Being
  - Quality of Partnerships
  - Investment in Cross-Sector Collaboration
  - Policies that support collaboration

- Creating Healthier, More Equitable Community Environments
  - Build Environment and Physical Conditions
  - Social and Economic Environment
  - Policy and Governance

- Transforming Health and Health Care Systems
  - Access
  - Consumer Experience and Quality
  - Balance and Integration