Infant Mortality: Magnitude of the Problem, Enormity of the Solutions

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Conflict of Interest

• I have no conflict of interests to declare
• This presentation contains no pharmacological content
Rural areas in Kansas see higher infant mortality rates

A ‘hole in the community’: Kansas infant mortality rate higher than national average

Black infant mortality rate in Kansas triple that for whites

Magnitude of the Problem

Wichita State resident assistant charged with murder in infant’s death, abandonment

Scott City woman charged with murder of infant son

ST. JOSEPH MAN CHARGED WITH KILLING HIS INFANT

Parents seek state action against day care provider after infant’s death
Kansas ranks high among infant mortality rate in some demographics

BY GABRIELLA DUNN, The Wichita Eagle

Read more here: http://www.kansas.com/news/local/article37892676.html#storylink=cpy
Definitions

• **Infant death**: Death of an infant before his or her first birthday.

• **Neonatal death**: Death of an infant within the first month after birth.

• **Postneonatal death**: Death of an infant between 2 and 12 months of life.

• **Infant mortality rate (IMR)**: Number of infant deaths per 1,000 live births.

• **Gestational age-specific infant mortality rate**: Number of infant deaths for a specific gestational age group (for example, 24–27 weeks of gestation), divided by the number of live births for the same gestational age group x 1,000.

• **Preterm birth**: Birth before 37 completed weeks of gestation.
Infant Mortality among Developed Nations 2010

NOTES: Canada’s 2010 data were not available from the Organisation for Economic Co-operation and Development (OECD) at the time of manuscript preparation. The 2009 infant mortality rate for Canada was 4.9. If the 2010 data for Canada had been available, the U.S. ranking may have changed. Deaths at all gestational ages are included, but countries may vary in completeness of reporting events at younger gestational ages.

SOURCES: CDC/NCHS, linked birth/infant death data set (U.S. data); and OECD 2014 (all other data). Data are available from: http://www.oecd.org.
US Infant Mortality Rates

- 4.2 after excluding births ≤24 weeks,
- Very preterm infants (24-31 weeks) comparable most OECD countries
- 32-36 weeks 2nd highest rate
- ≥ 37 weeks highest rate

Sweden as reference country

- 39% higher IMR due to higher percentage preterm births
- 47% due to higher IMR ≥37 weeks
- Reduce these 2 factors fall by 43% (7300 fewer deaths)
Infant Mortality Rate in Sedgwick County, KS & US by Black & All Races as 3-yr rolling average, 2000-2009

Source: KDHE Office of Health Informatics
Kansas IMR by selected population group of mothers, 1994-2014

Source: KDHE Office of Health Informatics
Five-year Rolling Average Infant Mortality Rates, 1985-2012, Kansas & Sedgwick County\textsuperscript{6}
IMR Nationally, in Kansas & in Sedgwick County by race, 2013\textsuperscript{5,6}

![Bar chart showing IMR by race and location]

[Bar chart showing IMR by race and period of death for Kansas and the US.]
Percentage of Kansas Live Births: Selected maternal & infant characteristics; by race, 2013

Source: KDHE Office of Health Informatics
Infant deaths by selected population groups & leading causes of death, Kansas 2009-2013

Prematurity/LBW
SUID
Congenital Anomalies
Maternal Factors

Source: KDHE Office of Health Informatics
Infant Deaths by Cause, 2008-2012

Sedgwick County (n=291)
- Congenital anomalies: 26%
- Prematurity/LBW: 25%
- Maternal Complications of Pregnancy: 17%
- Sudden Unexpected Infant Death (SIDS): 21%

Kansas (n=1333)
- Congenital anomalies: 29%
- Prematurity/LBW: 24%
- Maternal Complications of Pregnancy: 18%
- Sudden Unexpected Infant Death (SIDS): 18%

KDHE Linked Birth-Death File Residence Data
Causes of Infant Mortality

**Physical**
- Congenital anomalies/Birth Defects
- Low birth weight
- Prematurity
- SUID/SIDS
- Problems related to pregnancy complications

**Social/Environmental**
- Disparities in health care access
- Disparities in living conditions
  - Relational issues
  - Environmental conditions
  - Stress
Standard Strategies to Reduce Risks Infant Death

• Consistent prenatal care, beginning in the first trimester & continuing throughout pregnancy
• Take folic acid, prior to and during pregnancy
• Maintain a healthy diet & weight
• Regular physical activity
• Oral health care
• Exclusive breastfeeding for the first six months of the child’s life
• Provide safe sleeping arrangements for the infant
• Make well-child doctor visits through the baby’s first two years

Sedgwick County Health Department &
http://www.cdc.gov/reproductivehealth/maternalinfanthealth/infantmortality.htm
Life Course Actions

- Maintain a healthy diet & weight
- Regular physical activity
- Oral health care
- Quitting tobacco use
- Not drinking excessive amounts of alcohol and using “street drugs”
- Talking to your health care provider about screening and proper management of chronic disease
- Talk to HCP about taking any medications
- Health promotion/preventive care visits with HCP for age & discussion of considerations regarding pregnancy
- Use effective contraceptive correctly & consistently if sexually active, with the goal to delay or avoid pregnancy
- Prevent injuries & consider the safety of home & family (e.g.) wear seat belt, take CPR, install & test smoke alarms

Sedgwick County Health Department & http://www.cdc.gov/reproductivehealth/maternalinfanthealth/infantmortality.htm
Behavioral Risk Factors

• Approximately
• 20% Sedgwick County residents who currently smoke are female,
25.5% are black.
Behavioral Risk Factors

It is recommended that pregnant women avoid tobacco as:

• “Infants born to smoking mothers are 40 percent more likely to die in their first year, as smoking has been connected to complications with pregnancy, low birth weight and SIDS.”

• Exposure to alcohol during pregnancy can lead to low birth weight, premature delivery, congenital malformations and fetal alcohol syndrome (FAS).

• Illicit drug use during pregnancy doubles the likelihood of a premature birth and/or low birth weight.

Sources: Fanaroff et al., 2007; Salihu et al, 2003; U.S. Department of Health and Human Services, 2004; U.S. Health Resources and Services Administration (HRSA), 2009; Van Meurs, 1999
Health disparities are differences in the incidence, prevalence, mortality, and burden of diseases and other adverse health conditions that exist among specific population groups in the United States.

NIH Strategic Plan to Reduce and Ultimately Eliminate Health Disparities, 2001
Disparities (inequalities) in health are based on observed differences:

• Poor people die younger than rich people.
• Infants from lower socio-economic families have lower birth weights.
• Smokers get more lung cancer than non-smokers.
• Women live longer than men.
• Black babies die at higher rates than white babies.
“Nowhere are the divisions of race and ethnicity more sharply drawn than in the health of our people… no matter what the reason, racial and ethnic disparities in health are unacceptable in a country that values equality and equal opportunity for all.”

Bill Clinton
February 21, 1998
Why the Disparities?

- Behavior
  - Smoking
  - Drug use
- Prenatal Care
  - Early vs. late
  - Quality of care
- Genetics
- Socioeconomic status
  - Household income
  - Parental Education
  - Occupational Status
  - Neighborhood
  - Housing conditions
Added Burden of Race

• Race and SES reflect two related but not interchangeable systems of inequality

• SES accounts for a large part of the racial differences in health BUT, there is an added burden of race, over and above SES that is linked to poor health. Many suggest that this “added burden” is Racism.
Enormity of the Solutions
Recommended Strategies

• Life-Course Approach to Maternal & Infant Health
• Timely Prenatal Care for All Women
• Address Racial & Ethnic Disparities in Infant Mortality
• Sustain Efforts to Prevent Infant Mortality After the 1st month of Life.

The Lifecourse Perspective: Early Childhood Impacts Adult Health Status
Breastfeeding & Kangaroo Care
What is a habitat?

It is the environment, particularly the physical environment, that surrounds, influences, and is utilized by the organism to meet basic survival needs.

- Energy balance
- Thermal regulation
- Place attachment
- Affiliation
- Pain perception
- Security
- Comfort\(^1-3\)
Maternal Contact and Proximity for Infants’ Physiological & Behavioral Regulation

Mother as Habitat

- Maternal milk
- Touch
- Smell
- Voice
- Body heat
- Biological rhythms
- Anxiety management systems
  - Emotion regulation
  - Stress-reactivity
  - Social development
  - Cognitive development
Early Brain Development
Family
Strengthening Families

• Shift focus of preventive efforts from risks & deficits to strengths & resiliency
• Touchpoints
• Create an understanding of what programs do to promote healthy child development and reduce child abuse & neglect
• Focus on all health, education, & social services programs serving young children
Family Protective Factors

• Parental resilience
• Social connections
• Knowledge of parenting & child development
• Concrete support in times of need
• Nurturing & attachment
Community Efforts

• Project Imprint, Sedgwick County Fetal Infant Mortality Review (FIMR)
• Maternal Infant Health Coalition (MIHC)
• Healthy Babies Program
• Women, Infants & Children (WIC)
• Kansas Infant Death and SIDS Network
• Kansas March of Dimes Chapter
• Wichita Coalition for Child Abuse Prevention
• Kansas Blue Ribbon Panel on Infant Mortality
Lessons Learned from FIMR Projects

- Infant health is a measure of community well-being.
- FIMR is a community coalition.
- FIMR programs engage a diverse membership.
- FIMR programs thrive on effective group process.
- Action is key to FIMR.
- FIMR programs take on a wide range of community action.
- FIMR programs build on existing community assets.
- The FIMR process is a journey, not a destination.
- FIMR programs use population based data.
- FIMR programs communicate to the larger community.
- FIMR programs recognize and celebrate the work of their team members.

NFIMR, National Fetal Infant Mortality Review, ACOG website
Fetal Infant Mortality Review Process

The Cycle of Improvement

1. Data Gathering
2. Changes in Community Systems
3. Community Action
4. Case Review
Community Programs

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Helpful Resources

• Access Palm Card (from SCHD)
• Project Imprint – CRT & ACT
• Count the Kicks
• Periods of Purple Crying
• Safe Sleep
• Maternal Infant Health Coalition Asset Map of Sedgwick County
• United Way of the Plains 2-1-1
• Kansas Children's Service League Parent Helpline, 1-800-CHILDREN
Count the Kicks

• Count the Kicks every day, preferably at the same time.
• Pick your time based on when your baby is usually active, such as after a snack or meal.
• Make sure your baby is awake first; walking, pushing on your tummy or having a cold drink are good wake-up calls.
• To get started, sit with your feet up or lie on your side. Count each of your baby’s movements as one kick, and count until you reach 10 kicks.
• Most of the time it will take less than a half-hour, but it could take as long as two hours.
• Log your recorded times using our Count the Kicks App or a kick chart.
• Charting your baby’s activity is a great way to get to know your baby and can alert you to potential problems. Your charts are also useful for visits with your doctor.
September is National Infant Mortality Awareness Month

The National Healthy Start Association
Celebrate Day 366...

Every baby deserves a chance
INFANT MORTALITY AWARENESS CAMPAIGN
http://www.nationalhealthystart.org/

Catholic Charities
Wichita

Awareness

Turning up the Volume on Infant Mortality. Every Baby Matters!

October is Domestic Violence Awareness Month

#PurpleThursdayICT

Post Purple for Babies
purple.marchofdimes.org
References


