Kansas Blue Ribbon Panel on Infant Mortality

Road Map for
Preventing Infant Mortality in Kansas

Updated April 5, 2011

OVERALL LOGIC MODEL: Preventing Infant Mortality in Kansas (Kansas Blue Ribbon Panel on Infant Mortality)

Vision/Mission: *Assuring healthy babies for all Kansans through collaborative action for enhanced services, community support, and policy advocacy.*

Context/Conditions:

- Kansas ranks 40th among states in infant mortality rate
- Kansas ranks worst in Black IMR (BIMR is 2.7 times higher than WIMR)
- Highest IMR rates in high-risk places (especially in SG, WY, GE counties)

Barriers:

- Lack of urgency for reducing IMR
- Limited resources for assuring access to needed health services and community-based programs
- Cultural and language barriers (low levels of health literacy)
- Low levels of overall Literacy
- Gaps in government-to-government relationships for services

Resources:

- Existing collaborative partnership for preventing IM, including among:
  - State health department (including Center for Health Disparities)
  - Health organizations (e.g., neonatal care)
  - March of Dimes
  - SIDS/Safe Sleep Coalition
  - Professional associations (e.g., Kansas Academy of Pediatrics)
  - Academic and research partners
  - Promising Community Initiatives (e.g., MCH Coalition of KC; Healthy Babies/SG Co.)
  - Sovereign nations & urban Indian populations in KS

Risk/ Protective Factors:

Behavioral:

- Early (1st trimester) prenatal care
- Folic acid use
- Infant sleep position & sleep environment education & increased awareness among parents, child care providers, and health care providers
- Interconception care (including 1+ years between birth)
- Exposure to tobacco smoke
- Alcohol, tobacco, caffeine, & other drug use
- Appropriate prenatal weight gain
- Preconception education (Life Course perspective to improve maternal health)

Biological/History/Experience:

- Maternal birth weight ("Life Course Perspective")
- Elective delivery before 39 weeks
- Previous LBW or preterm delivery
- Previous fetal demise/infant death-Prior 1st trimester induced abortion
- History of infertility
- Nulliparity & high parity
- Placental, cervical, & uterine abnormalities & infections
- Gestational bleeding
- Intrauterine Growth Restriction (IUGR)
- Multiple gestations
- Birth spacing
- Low pre-pregnancy weight & short stature
- Preeclampsia
- Diabetes
- Race/ ethnicity (African American, Native American, Puerto Rican)
- Single marital status
- Low SES & Low education
- Maternal age (Teens & Older Age/ 35+)
- Family/Domestic Violence/Child Abuse/Neglect
- Depression
- Under-immunized status of infant

Environmental:

- Impoverished living conditions
- Feelings of helplessness
- Unstable social support
- Employment-related physical activity & occupation exposures
- Environmental exposures
- Chronic stress (including DV, poor living conditions, unemployment, stressful living conditions)
- Availability, access, & quality of health care (obstetric, perinatal, & neonatal)

Recommended Intervention Components and Activities:

Providing Information and Enhancing Skills:

- Multi-year Infant mortality public awareness campaign
- Promote safe sleep practices via professionals, CBOs, and statewide networks.
- Promote healthy lifestyles among women of childbearing age
- Promote healthy behaviors among teens

Enhancing Services and Support:

- Implement state-wide PRAMS (Prenatal Risk Assessment of the Mother) to determine trends/disparities in birth outcomes of overall Kansas births
- Establish and maintain the FIMR projects in Wyandotte and Sedgwick Counties to help identify social and medical factors that contribute to infant death
- Promote breastfeeding through existing coalitions and partners.
- KDHE & State Child Death Review Board (CDRB) partnership
- State Perinatal Periods of Risk (PPOR) (every 5 years)
- Identify and implement best practice models
- Improve care coordination of high-risk pregnant women
- Support perinatal collaboratives and surveillance systems
- Create neonatal-perinatal quality improvement collaborative
- Support community-based programs including home visitation for high-risk families
- Promote smoking cessation programs for families and caregivers
- Promote WIC Program for all eligible women
- Seek opportunities to work with IHS and tribal health clinics in KS.

Modifying Access, Barriers, and Opportunities:

- Ensure early, comprehensive prenatal care for all women
- Create a more efficient and expedited process for access to Medicaid services
- Improve access to genetics counseling
- Provide Family Planning Service Option within Medicaid
- Provide culturally tailored education and information
- Build collaborative relationships with organizations that are already addressing disparate populations

Changing Consequences:

- Adequate insurance reimbursement for group visits and centering care
- Payment of infant autopsies to coroners contingent on properly conducting those autopsies on infants

Modifying Policies & Systems:

- Apply for Medicaid—Family Planning Service & obtain funding
- Implement state genetics plan
- Develop hospital/provider collaborative to eliminate elective deliveries before 39 weeks
- Support implementation of safe sleep policies in child care settings
- Support tobacco legislation to reduce use and exposure

Outcomes:

Behavioral Outcomes:

Patient/Mother/Family Behavior:

- Increased proportion of women receiving prenatal care in 1st trimester
- Increased proportion of women of child bearing age consuming folic acid
- Increase the proportion of mothers initiating breastfeeding for infants up to 6 months
- Increased proportion of infants in safe sleep position and environment
- Decreased maternal use of alcohol, tobacco, caffeine, & other drug use
- Increased maternal healthy eating, physical activity, healthy weight
- Reduced levels of teenage pregnancy (and related behaviors of unprotected sex)
- Increase the interval between gestations
- Increase proportion of infants adequately immunized

Provider/Health Care System Behavior:

- Increased number of health care & child care providers who deliver culturally competent education about safe sleep as well as integrate cultural assets for healthy pregnancies
- Collaboration via MOU or other process for tribes in KS
- Elimination of elective deliveries prior to 39 weeks

Environmental Outcomes:

- Reduced exposure to impoverished living conditions, occupational hazards, chronic stress, tobacco smoke, and child abuse and neglect
- Reduced vulnerability through increased social support, education, occupational and status

Population-level Health/ Equity Outcomes:

- Reduced incidence of infant mortality
- Reduced incidence of low birth weight
- Reduced disparities in rates of infant mortality among different groups (especially African Americans; currently, 3:1 ratio)
- Reduced premature birth rate (< 37 weeks)
- Reduced intentional and unintentional injuries during first year of life

Sub-Logic Model: Strengthening State Systems Preventing Infant Mortality in Kansas

Vision/Mission: *Assuring healthy babies for all Kansans by enhancing state-level supports for community efforts to prevent infant mortality.*

Context/Conditions:
- Kansas ranks 40th among states in infant mortality rate
- Kansas ranks worst in Black IMR (BIMR is 2.7 times higher than WIMR)
- Highest IMR rates in high-risk places (especially in SG, WY, GE counties)

Barriers:
- Lack of urgency for reducing IMR
- Limited resources for assuring access to needed health services and community-based programs

Resources:
- Existing collaborative partnership for preventing IM, including:
  - State health department (including Center for Health Disparities)
  - Health organizations (e.g., neonatal care)
  - March of Dimes
  - SIDS/Safe Sleep Coalition
  - Professional associations (e.g., Kansas Academy of Pediatrics)
  - Academic and research partners
  - Promising Community Initiatives (e.g., MCH Coalition of KC; Healthy Babies/SG Co.)
  - Sovereign nations & urban Indian populations in KS

Types of System-level Activities/Interventions:
- Monitor IM rates related risk/protective factors for state/disparities groups to identify, diagnose and investigate problems and goals
- Inform, educate and empower people about IM issues
- Mobilize and support community partnerships to prevent IM, including among those with IM disparities
- Develop policies and plans to support individual & community health efforts
- Enforce laws & regulations that protect health and ensure safety of infants and mothers
- Assure access and link people to needed prenatal services
- Strengthen system (training) for collecting accurate data on risk/protective factors for those completing birth and death certificates
- Payment of infant autopsies to coroners contingent on properly conducting those autopsies on infants
- Assure a competent workforce in preventing IM
- Evaluate effectiveness, accessibility, and quality of personal and population- based health services
- Educating workforce around the risks related to infant mortality

Priority System Changes:
- Enhance surveillance systems to assess and report IMR and disparities at state, local, and tribal levels
- Promote community assessment tools**,** risk monitoring tools
- Establish a website about infant mortality, its risk/protective factors, strategies & resources for intervention, contacts
- Develop asset map of services and supports (MADIN toll-free line)
- Facilitate action planning, technical support, implementation, and evaluation of comprehensive interventions using evidence-based strategies
- Build capacity of workforce and partnerships for preventing IM in local communities
- Enhance reimbursement mechanism for preventive services
- Address gap between existing laws and identified IM goals
- Expand health insurance coverage to assure needed services
- Prepare local and regional staff in public health departments
-Assess KS Perinatal Quality Improvement Collaborative
- Establish monitoring and evaluation systems to see progress and assure accountability

Effects: Outcomes/Results

By 2012
- Develop a comprehensive strategic plan for prevention of infant mortality in Kansas and document its implementation and progress
- Implement and evaluate statewide public awareness campaign on infant mortality
- Resources secured and comprehensive, community-based programs (e.g. FIMR) established and enhanced in high-risk zip codes
- KS Perinatal Quality Improvement Collaborative garners technical assistance from California and/or Ohio Quality Improvement Collaboratives

By 2015
- KS Perinatal Quality Improvement Collaborative is functioning: funding acquired, partner participation, data collected, analyzed and reported

By 2015

Behavioral Outcomes:
- Increased proportion of women receiving prenatal care in 1st trimester
- Increased time interval between births
- Increased assessment and screening for depression, family violence/domestic violence
- Increased proportion of women who report consuming adequate amounts of folic acid
- Increased proportion of infants in safe sleep position and environment
- Decreased levels of maternal smoking
- Decreased maternal use of alcohol, tobacco, caffeine, & other drug use
- Increased maternal healthy eating, physical activity, healthy weight
- Reduced levels of teenage pregnancy (and related behaviors of unprotected sex)
- Improved preterm birth outcomes
-Decreased level of preterm births
-Decreased C-section rate

By 2020

Environmental Outcomes:
- Reduced exposure to impoverished living conditions, occupational hazards, and chronic stress
- Reduced vulnerability through increased social support, education, and occupational status

Population-level Health/ Equity Outcomes:
- Reduced incidence of preterm births
- Reduced incidence of infant mortality
- Reduced disparities in rates of infant mortality among different groups (especially African Americans; currently, 3:1 ratio)

Sub-Logic Model: Increasing Safe Sleep to Reduce Infant Mortality in Kansas

Vision/ Mission: *Assuring healthy babies for all Kansans through collaborative action safe sleep*

Context/Conditions:

- Kansas ranks 40th among states in infant mortality rate
- Kansas ranks worst in Black IMR (BIMR is 2.7 times higher than WIMR)
- Highest IMR rates in high-risk places (especially in SG, WY, GE counties)

Barriers:

- Lack of urgency for reducing IMR
- Limited understanding and support/ resources for Safe Sleep messages
- Transient population
-Lack of proper scene investigation or autopsy of unexpected infant deaths
-Inadequate documentation during infant death scene investigations

Resources:

- Existing collaborative partnership for preventing IM, including among:
  - State health department (including Center for Health Disparities)
  - Health organizations (e.g., neonatal care)
  - March of Dimes
  - SIDS/Safe Sleep Coalition
  - Professional associations (e.g., Kansas Academy of Pediatrics)
  - Academic and research partners
  - Promising Community Initiatives (e.g., MCH Coalition of KC; Healthy Babies/SG Co.)
  - Sovereign nations & urban Indian populations in KS

Risk Factors:

Behavioral:

- Cultural norms and practices
- Co-sleeping and/or Bed-sharing
- Improper sleep surface
- Use of loose bedding and soft objects in sleep space
- Improper sleep position
- Alcohol, tobacco, cocaine, & other drug use

Biological/History/Experience:

- Race (African American and Native American)
- Male infant
- Living in poverty
- Being between one and six months old
- Sibling loss to SIDS
- Maternal age < 20 during first pregnancy
- Obstetric History, Medical Illnesses & Conditions
  - Premature birth
  - Low birth weight
  - Inadequate prenatal care
  - Low maternal weight gain
  - Placental Abnormalities
  - Anemia

Psychosocial & Environment:

- Environmental exposures
- Exposure to smoke
- Inconsistent safe sleep messages
- Highly transient populations
- Grandparent influence on young parents
- Poor access to safe sleep resources (i.e. proper cribs, wearable blankets, etc.) and education materials
- At-risk Families and communities with concentrated poverty
- Child care providers without proper safe sleep education
- Child care providers not adhering to safe sleep protocols

Recommended Intervention Components & Activities:

Providing information/enhancing skills:

- Educate parents, grandparents and caregivers of all infants on the AAP's safe sleep recommendations
- Distribute safe sleep DVD to parents, grandparents, and caregivers of all infants
- Advocate for the use of stickers on cribs demonstrating the safe sleep position
- Train health care providers, child care providers, and home visitors to provide AAP safe sleep recommendations
- Encourage pediatricians, primary care physicians, and staff to educate parents/caregivers about safe sleep practices during all well-baby checks
- Educate child welfare workers (e.g. SRS, family preservation, and foster care) to provide AAP safe sleep recommendations
- Promote state-wide awareness of safe sleep practices through media
- Participate in statewide education campaign on infant mortality
- Create and promote infant death scene investigation training via DVD and/or webinar
- Promote use of CDC's Sudden Unexplained Infant Death Investigation (SUIDI) form
- Emphasize the relative frequency of SIDS where positional asphyxia cannot be ruled out

Enhancing services/support:

- Require the Safe Sleep DVD be watched when a child care provider has a violation of safe sleep
- Encourage addition of a safe sleep consultation prompt to the Parents as Teachers data form(s)
- Develop culturally-tailored safe sleep awareness campaigns
- Support and encourage more frequent home health visitation for infants

Modifying access, opportunities, and barriers:

- Supply a wearable blanket to newborns
- Supply a crib (portable or other) for newborns as needed
- Collaborate with lactation consultants to promote consistent safe sleep messages

Changing Consequences:

- Build an incentive program for child care providers who implement a safe sleep policy based on the AAP's recommendations

Modifying Policies:

- Support implementation of a safe sleep policy based on the AAP's recommendations for hospitals and health care centers
- Endorse a policy for all coroners to follow the National Association of Medical Examiners (NAME) and Forensic Autopsy Performance standards manual for all infant autopsies
- Support safe sleep training regulation for new and current childcare providers
- Add a safe sleep checkbox to child care surveyor's inspection form.

Outcomes:

Behavioral Outcomes:

- Increased number of parents, caregivers, and child care providers consistently adhering to the AAP's safe sleep recommendations
- Increased number of properly conducted infant autopsies

Environmental Outcomes:

- Ensure parents have full access to safe sleep tools for newborns at hospital/birth settings
- Increased public awareness of the risk factors contributing to infant deaths
- Ensure parents have full access to safe sleep tools before leaving hospital

Population-level Health/Equity Outcomes:

- Decreased racial disparity of infant deaths
- Child safety agencies will have an increased knowledge of safe sleep practices and risk factors associated with infant sleep-related deaths
- Decreased number of infant deaths of babies born into poverty

Sub-Logic Model: Enhancing Access to Health Care and Social Supports to Reduce Infant Mortality in Kansas.

Vision/ Mission: *Assuring healthy babies for all Kansans through collaborative action for enhanced services, community support, & policy advocacy*

Context/Conditions:
-Kansas ranks 40th among states in infant mortality rate
-Kansas ranks worst in Black IMR (BIMR is 2.7 times higher than WIMR)
-Highest IMR rates in high-risk places (especially in SG, WY, GE counties)
-Leading Causes of Infant Mortality: prematurity, low birth weight, birth defects, SIDS/sleep-related deaths

Barriers:
-Lack of urgency for reducing IMR
-Limited resources for assuring access to needed health services and community-based programs

Resources:
-Existing collaborative partnership for preventing IM, including among:

- State health department (including Center for Health Disparities)
- Health organizations (e.g., neonatal care)
- March of Dimes
- SIDS/Safe Sleep Coalition
- Professional associations (e.g., Kansas American Academy of Pediatrics)
- Academic and research partners
- Promising Community Initiatives (e.g., MCH Coalition of KC; Healthy Babies/FIMR/SG Co.)
- Sovereign nations & urban Indian populations in KS

Risk/ Protective Factors:

Behavioral:
- Alcohol, tobacco, & other drug use
- Maternal Nutrition:
  - Low pre-pregnancy weight (BMI < 18.5)
  - High pre-pregnancy weight (BMI ≥ 25.0)
  - Inappropriate prenatal weight gain
  - Lack of folic acid use
- Employment: unemployed, long work hours, prolonged standing, low job satisfaction
- Exercise in pregnancy
- Early prenatal care

Biological/History/Experience:
- Race/Ethnicity (African American, Native American, Puerto Rican)
- Foreign born mother
- Early (1st trimester) prenatal care: lack of access to quality prenatal care
- Multiple gestations, assisted reproductive technology
- Maternal age (teens & older age/35+)
- Obstetric History
  - Previous LBW or preterm delivery
  - Previous fetal demise/infant death
  - Prior 1st trimester induced abortion
  - Short inter-pregnancy interval (<6mo)
  - Inadequate interconception care
  - Reproductive tract abnormalities & infections
  - Nulliparity & high parity
  - Elective deliveries <39 weeks
- Medical Illnesses & Conditions
  - Chronic Hypertension & Preeclampsia
  - Systemic Lupus Erythematosus (Lupus)
  - Restrictive lung disease & Asthma
  - Hyperthyroidism
  - Pregestational & gestational diabetes
  - Pregestational renal disease
  - Maternal birth weight ("Life Course Perspective")
  - Prior STD history
  - Previous history of genetic risk

Psychosocial & Environment:
- Stress:
  - Anxiety
  - Depression
  - Domestic Violence
- Racism
- Lack of Social Supports
- Unintended Pregnancy
- Environmental exposures
- Impoverished living conditions
- Single marital status
- Low SES & low educational attainment

Recommended Intervention Components & Activities:

Providing Information and Enhancing Skills:
- Text for Baby messages
- PSA's on risk of elective preterm deliveries
- Public campaign on benefits of folic acid & harm of alcohol, tobacco, cocaine, & other drug use
- Public campaign on spacing pregnancies
- Multi-year statewide infant mortality public awareness campaign
- Information on improving health literacy

Enhancing Services and Support:
- Implement state-wide PRAMS (Pregnancy Risk Assessment Monitoring System) to determine trends/disparities in birth outcomes of overall Kansas births
- Establish and maintain the FIMR projects in Wyandotte and Sedgwick counties to help identify social and medical factors that contribute to infant death
- Increased data collection, analysis, and dissemination of information on infant mortality related to disparities
- State Perinatal Periods of Risk (PPOR) (every 5 years)
- Identify and implement best practice models
- Support perinatal collaborative and surveillance systems
- Create neonatal-perinatal quality improvement collaborative
- Support evidence-based community programs including home visitation for high-risk families
- Promote smoking cessation programs for families and caregivers
- Train health care workers on screening and referral for DV/IPV, tobacco, alcohol, drugs, and anxiety/depression
- Improve availability of bilingual services
- Support funding for state genetics plan

Modifying Access, Barriers, and Opportunities:
- Expedite Medicaid application for prenatal care
- Increase Medicaid access for genetic counseling pre and postnatal
- Provide culturally tailored education and information
- Provide interconception care

Changing Consequences:
- Provide adequate insurance reimbursement for group visits & centering care

Modifying Policies & Systems:
- Promote universal provision of prenatal care for uninsured women
- Apply for Medicaid Family Planning Service Option for expanded post-partum coverage (or Medicaid 115 waiver in 2014)
- Secure full funding to assure Medicaid coverage for pregnant women to 250% FPL.
- Increase in state tobacco tax
- Increased spending on tobacco prevention for childbearing age women
- Change hospital/reimbursement policy for elective induced deliveries
- Improved linkages and coordination among public, private, and tribal entities focused on infant mortality and associated risk/protective factors

Outcomes:

A. No elective induced labor < 39wk
B. Increased folic acid intake for child bearing age women (100%) [consider link on prenatal vitamins to message on safe sleep]
C. Increased access to care & utilization before, during and after pregnancy within a medical home, with optimal inter-pregnancy spacing
  a) Access and utilization of preconception care
  b) Access and utilization of care during and after the post-partum period
  c) Access to care during minimal 18 month inter-pregnancy period
  d) Access to preventive services for infant and mother
  e) Access to genetics counseling
D. Increased Social & Health Care Supports:
  a) Care coordination and family support services available for all women in high risk zip codes
  b) All prenatal women are provided with education on benefits of breastfeeding, and all post-partum women have access to breastfeeding supports
  c) All pregnant women are screened for tobacco, substance abuse, mental health, and DV and get appropriate referrals
E. Attain Healthy Pregnancy for All Kansas Women
  a) No tobacco, alcohol, drug use
  b) Appropriate physical activity
  c) Appropriate prenatal weight gain
F. All maternal child health providers are culturally competent
G. Inter-pregnancy period spacing: >18mo
H. Data available that characterizes disparities and specific state and local risk factors related to infant mortality

Glossary and Acronyms List

AAP	American Academy of Pediatrics
BIMR	Black Infant Mortality Rate
BMI	Body Mass Index
BRP	Blue Ribbon Panel
CBO	Community Based Organizations
CDC	Center for Disease Control and Prevention
CDRB	Child Death Review Board
DV	Domestic Violence
FIMR	Fetal and Infant Mortality Review
FPL	Federal Poverty Level
IM	Infant Mortality
IMR	Infant Mortality Rate
IHS	Indian Health Service
IPV	Intimate Partner Violence
IUGR	Intrauterine Growth Restriction
KDHE	Kansas Department of Health and Environment
LBW	Low Birth Weight
MADIN	Make a Difference Information Network
MCH	Maternal and Child Health
MCHC	Maternal and Child Health Council
NAME	National Association of Medical Examiners
Neonatal	Pertaining to the period of time immediately following birth
Nulliparity	A condition or state in which a woman has never given birth to a child, or has never carried a pregnancy.
Perinatal	Pertaining to the period immediately before and after birth.
Positional asphyxia	A form of asphyxia which occurs when someone's position prevents them from breathing adequately
PPOR	Perinatal Periods of Risk
PRAMS	Pregnancy Risk Assessment Monitoring System
PSA	Public Service Announcement
SES	Socioeconomic Status
SIDS	Sudden Infant Death Syndrome
SRS	Social and Rehabilitation Services
SUIDI	Sudden Unexplained Infant Death Investigation
WIMR	White Infant Mortality Rate

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