

Improving Infant Outcomes

Commissioner's Action Team
On Reduction of Infant Mortality

State Fiscal Year 2009 Strategic Plan



Oklahoma State
Department of Health
Creating a State of Health

August 12, 2008

Introduction

The Oklahoma State Department of Health (OSDH) Commissioner's Action Team on Reduction of Infant Mortality was convened May 2007 with the overarching goal of reducing infant mortality in Oklahoma. The action team was charged with developing a strategic plan outlining specific steps to be taken to reduce infant mortality and other adverse birth outcomes as well as reduce racial disparities for such outcomes. The strategic plan is a perpetual process that will be updated based on input from the action team, data trends, state partner and community input and changes in financial resources.

For the first year the action team focused primarily on data analysis. Standard approaches were used to compare Oklahoma to the rest of the nation for the overall infant mortality rate. In addition to the standard approach, data were utilized from the Perinatal Periods of Risk Model (PPOR)*. The PPOR model is based on two factors: age at death and birth weight. Together, these two factors form the basis for the "feto-infant mortality map" and can provide direction for specific prevention strategies. The final PPOR model contains four major categories: Maternal Health/Prematurity, Maternal Care, Newborn Care, and Infant Health. Each group is named based on the area to which prevention efforts would be most logically concentrated.

Two specific areas from the PPOR results were chosen based on their contribution to the burden of infant mortality in Oklahoma: Maternal Health/Prematurity and Infant Health. While the underlying cause of death is useful for investigating deaths in the Infant Health category, the causes of death among very low birth weight (VLBW) births and fetal deaths in the Maternal Health/Prematurity category can be complex, resulting in inconsistent reporting. To estimate the contribution of deaths that are attributed to birth weight, a formula by Kitagawa was utilized. This formula can provide an estimation for excess deaths due to having more than the expected proportion of babies being born low weight or of having babies born low weight but not surviving at the expected rates.

While the PPOR data are not shown in this report, the results provided useful insight into targeted interventions needed. The results showed that while African American VLBW babies survive better than white VLBW babies, the larger than expected proportion of African American babies born too small contributes greatly to the racial disparities seen in infant mortality rates and further emphasizes the need for preventing prematurity among this group. Decreasing infant mortality for whites will require both preventing prematurity and reducing mortality for the smallest babies.

As a result of data analyses and subsequent discussions, smaller workgroups have been formed to target interventions for the two categories outlined above. For the Maternal Health/Prematurity category prevention efforts are focused on maternal behaviors before and during pregnancy such as preconception/interconception care and education, maternal infections (sexually transmitted infections), postpartum depression, and tobacco use prevention. Infant Health prevention efforts focus on infant safe sleep including sleep position and bed sharing, breastfeeding, and childhood injury. Public awareness and education is an overarching workgroup incorporating each of these targeted areas of prevention efforts. Other issues taken into account within the workgroups are access to quality health care services, biological factors, socioeconomic factors, and cultural barriers.

*The Perinatal Periods of Risk Approach (PPOR) was developed at CityMatCH with support from CDC, March of Dimes, and HRSA/MCHB available at http://www.citymatch.org/ppor_index.php

Infant Mortality in Oklahoma

Oklahoma's infant mortality rate (IMR) has consistently remained above the national rate since 1992. While some improvements have been observed, the state's IMR of 8.0 deaths per 1,000 live births for 2006 is no better than the national rate of 8.0 achieved over 10 years earlier. When comparing to the latest available national mortality data, the Oklahoma IMR has seen only a 13% reduction from 9.3 in 1991 to 8.1 in 2005 compared to the U.S. rate decrease of 22.5% from 8.9 in 1991 to 6.9 in 2005. The 2006 African American IMR is more than twice the rate of white deaths, and little has changed for decades. Native American infant mortality is also higher than for white infants, though the actual rate is difficult to compare due to some infants being classified as white at death.

Infant deaths are typically classified as neonatal and postneonatal. Neonatal deaths are those to infants who die before 28 complete days of life; postneonatal deaths are defined as deaths to infants at least 28 days but less than 365 days old. Causes of neonatal deaths are primarily associated with conditions arising during pregnancy and delivery, while many of the postneonatal deaths are due to conditions occurring to the infant after it is born. While the 2005 Oklahoma neonatal mortality rate was slightly higher than the U.S. rate (4.8 vs. 4.4 respectively), the Oklahoma postneonatal rate was significantly higher than the U.S. in 2005 (3.3 vs. 2.3) and for the previous five years. In 2005 postneonatal mortality represented 40.7% of infant deaths in Oklahoma as compared to 34.1% for the entire nation. Sudden infant death syndrome (SIDS), congenital malformations, and accidents (unintentional injuries) were the top three causes of death during the postneonatal period (28-364 days of life) for whites, African Americans, and Native Americans, accounting for 313 of the 805 post-neonatal deaths of these three racial groups for 2002-2006.

Congenital malformations are the largest contributor of neonatal mortality in Oklahoma among white and Native American infants; however, African American neonates are more likely to die due to disorders related to short gestation and low birth weight.

Points to Consider

- If Oklahoma had achieved the infant mortality rate already achieved nationally by 2003, **58 fewer babies would have died in 2006** before their first birthday.
- **44 of the 75 African American infant deaths would have been averted in 2006** if their mortality rate had been equal to that of white infants.
- **24 of the 62 Native American infant deaths would have been averted in 2006** if their mortality rate had been equal to that of white infants.
- Achieving an IMR rate in Oklahoma for 2006 as good as the top ten nations did in 2000 **would have prevented 191 funerals for babies who never celebrated their first birthday.**

Snapshot of Infant Mortality in Oklahoma

Infant Mortality Rate *	2006	2002-2006
Statewide	8.0	8.0
Oklahoma County	7.8	8.9
Tulsa County	8.7	8.0

* The number of infant deaths per 1,000 live births

Source: Oklahoma State Department of Health, Center for Health Statistics, Vital Records Division. Birth and Death Files

2005 National Ranking	State	Infant Mortality Rate
	USA	6.9
40	Oklahoma	8.1
1	Utah	4.5
17	New Mexico	6.1
18	Colorado	6.4
22	Texas	6.6
33	Kansas	7.4
36	Missouri	7.5
37	Arkansas	7.9
49	Louisiana	10.1
50	Mississippi	11.4



Source: Deaths: Final Data for
National Vital Statistics Reports,
Vol 56, No. 10, April 24, 2008

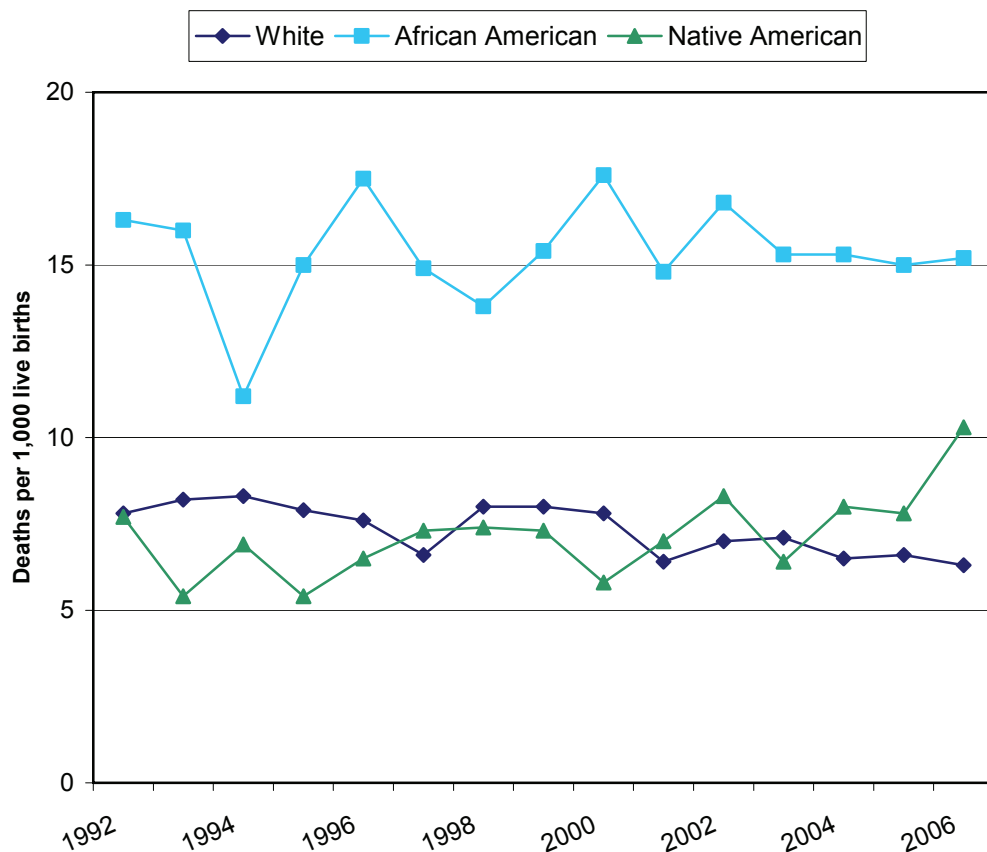
Racial Disparities in Infant Mortality

Oklahoma Infant Mortality Rate by Race 2002-2006

Statewide	White	African American	Native American
8.0	6.7	15.5	8.2

Source: Oklahoma State Department of Health, Center for Health Statistics, Vital Records Division. Birth and Death Files (race not imputed)

Infant Mortality Rate by Race, Oklahoma 1992-2006



Source: OSDH, Vital Records Division, Birth and Death files, 1992-2006 (race not imputed)

Top 5 Causes of Oklahoma Neonatal Deaths (<28 days of life), by Race: 2002-2006

(International Classification of Diseases, Tenth Revision)

Rank	White (N=779)	n	Rank	African American (N=227)	n	Rank	Native American (N=119)	n
1.	Congenital malformations, deformations (Q00-Q99)	219	1.	Disorders related to short gestation and LBW (P07)	74	1.	Congenital malformations, deformations (Q00-Q99)	33
2.	Disorders related to short gestation and LBW (P07)	143	2.	Congenital malformations, deformations (Q00-Q99)	38	2.	Disorders related to short gestation and LBW (P07)	21
3.	Respiratory distress of newborn (P22)	44	3.	Bacterial sepsis of newborn (P36)	15	3.	Newborn affected by maternal complications of pregnancy (P01)	9
4.	Newborn affected by complications of placenta, cord, membranes (P02)	43	4.	Newborn affected by maternal complications of pregnancy (P01)	13	4.	Bacterial sepsis of newborn (P36)	9
5.	Bacterial sepsis of newborn (P36)	42	5.	Newborn affected by complications of placenta, cord, membranes (P02)	10	5.	Respiratory distress of newborn (P22)	5
			5.	Respiratory distress of newborn (P22)	10			

Top 5 Causes of Oklahoma Postneonatal Deaths (28 days to 364 days of life), by Race: 2002-2006

(International Classification of Diseases, Tenth Revision)

Rank	White (N=558)	n	Rank	African American (N=139)	n	Rank	Native American (N=108)	n
1.	Sudden infant death syndrome (R95)	101	1.	Sudden infant death syndrome (R95)	19	1.	Sudden infant death syndrome (R95)	22
2.	Congenital malformations, deformations (Q00-Q99)	98	2.	Congenital malformations, deformations (Q00-Q99)	17	2.	Congenital malformations, deformations (Q00-Q99)	7
3.	Accidents (unintentional injuries) (V01-X59)	32	3.	Accidents (unintentional injuries) (V01-X59)	10	3.	Accidents (unintentional injuries) (V01-X59)	7
4.	Diseases of the circulatory system (I00-I99)	21	4.	Septicemia (A40-A41)	7	4.	Influenza and pneumonia (J10-J18)	5
5.	Septicemia (A40-A41)	15	5.	Disease of the circulatory system (I00-I99)	7	5.	Assault (homicide) (X85-Y09)	3
						5.	Diseases of the circulatory system (I00-I99)	3

Source: OSDH, Vital Records Division, Birth and Death files, 2002-2006 (race not imputed)

State Fiscal Year (SFY) 2009 Strategic Plan

1. Improve access to quality health care for populations disproportionately impacted by infant mortality.

According to 2005 data from the National Center for Health Statistics, only two states were worse than Oklahoma for mothers receiving first trimester prenatal care. Mothers need comprehensive, risk-appropriate prenatal care to optimize healthy outcomes for mother and child.

- Request state funding for retention of advanced practice nurses.
- Conduct focus groups within African-American communities to gain information on barriers to health care services.
- Collaborate with Oklahoma City County Health Department and Tulsa Health Department to expand family planning services to target areas to outreach to and serve the African-American population.
- Collaborate with the Oklahoma Health Care Authority on development and implementation of “No Wrong Door”, a systems change to facilitate electronic Medicaid eligibility.
- Collaborate with the Oklahoma Health Care Authority, the Oklahoma Healthy Mothers/Healthy Babies Coalition and the University of Oklahoma (OU) Department of OB/GYN and Perinatal Continuing Education Program to develop and implement standardized perinatal guidelines to ensure all pregnant women receiving publicly funded health care have access to high quality care.
- Explore state infrastructure needs to utilize telemedicine in the provision of perinatal care.

2. Promote preconception care for all females of reproductive age.

According to Oklahoma PRAMS only 13.5% of new mothers received any type of counseling or advice to prepare for becoming pregnant. Preconception care alerts mothers to the risk of poor health behaviors and family health histories.

- Adopt the standard within OSDH clinics that any health care visit with a female of reproductive age is a preconception health care visit.
- Finalize development of Preconception/Interconception Health Appraisal Tool and related health education materials. Implement the tool and educational materials in OSDH Family Planning clinics with females receiving initial family planning exam and females seeking pregnancy testing.
- Collaborate with the Oklahoma Health Care Authority in providing Medicaid providers with access to the Preconception/Interconception Health Appraisal Tool and related health education materials.

3. Reduce prenatal sexually transmitted infections (STDS) by identification and treatment.

According to the CDC, many STDs are silent and affect women of every socio economic and educational level. The harmful effects of STDs may include stillbirth, low birth weight, eye infections, pneumonia, neonatal sepsis, neurologic damage, blindness, deafness and chronic liver disease. Routine prenatal care that includes STD screening early in the pregnancy and close to delivery provides an opportunity to intervene in preventing these outcomes.

- Provide education to women so they will be able to identify changes in their body and be proactive about asking their health care providers for testing. Give guidance on making lists to ask what testing health care providers routinely provide during pregnancy and annual examinations.
- Provide training and education to health care providers on importance of early testing and the need to make STD, Hepatitis and HIV testing part of prenatal panel for all pregnant females.
- Collaborate with Oklahoma City County Health Department and Tulsa Health Department to track pregnancy status of females with positive STDs.
- Explore additional funding sources for early testing for STD, Hepatitis and HIV.

4. Implement use of the Edinburgh Postnatal Depression Scale to screen for postpartum depression.

Maternal depression can negatively impact a mother's health and nurturing capacity, affecting the health of the newborn. PRAMS findings reveal approximately 2 of 5 mothers in Oklahoma have not discussed postpartum depression with their health care provider.

- Train staff to conduct the Edinburgh Postnatal Depression Scale (postpartum depression screening) when mothers with a child under one year of age present for services. The first OSDH service or program area having contact with the client would administer and document the screening.
- Identify system to collect postpartum depression screening data.

5. Enhance tobacco use prevention activities with pregnant and postpartum females, their families and health care providers.

The hazardous effects of smoking for mother and fetus are well documented. Oklahoma PRAMS reveals more than 20% of Oklahoma mothers continue to smoke during the last trimester of their pregnancy, and almost 27% return to smoking or continue to smoke postpartum.

- Collaborate with the Oklahoma Health Care Authority to conduct grand round presentations to Medicaid providers serving pregnant and postpartum females on the newly updated U.S. Public Health Service Clinical Guidelines for Treating Tobacco Dependence, how to refer to the Oklahoma Tobacco Helpline and how to bill for cessation services through Medicaid reimbursement.
- Collaborate with the Oklahoma Health Care Authority to develop a pilot tobacco cessation program proposal targeting pregnant and postpartum females to encourage abstinence during pregnancy and at least one year postpartum. Note: The proposal will be submitted as a part of the Oklahoma Health Care Authority's annual budget request.
- Promote the addition of questions assessing smoking status and exposure to secondhand smoke to The Oklahoma Toddler Survey and the Pregnancy Risk Assessment Monitoring System.
- Collaborate with the Oklahoma Health Care Authority on policy change to reimburse Medicaid providers offering tobacco cessation to parents that smoke as identified during pediatric appointments.
- Develop an educational tool about the dangers of exposure to secondhand smoke and tobacco cessation resources such as the Oklahoma Tobacco Helpline, to be utilized by pharmacists or pharmacies in Oklahoma and Tulsa counties.

6. Promote infant safe sleep.

Placing an infant on its back for sleep has been proven effective in reducing sudden infant death syndrome (SIDS). Yet according to Oklahoma PRAMS results, approximately one in five infants were placed on their stomachs to sleep.

- Develop OSDH policy on infant safe sleep consistent with the American Academy of Pediatrics (AAP) 2005 Task Force on Sudden Infant Death Syndrome Policy Statement.
- Develop infant safe sleep educational materials to be used by OSDH programs.
- Provide infant safe sleep information and resources on the OSDH website.
- Conduct a statewide survey of all hospital nurses who care for mothers and/or newborns, to more accurately assess infant safe sleep policies and educational needs in Oklahoma hospitals.
- Develop and implement an Infant Safe Sleep Continuing Education Curriculum for hospital nurses in collaboration with the University of Oklahoma Health Sciences Center.
- Develop a model hospital infant safe sleep policy to share with hospitals.

7. Promote and model importance of breastfeeding.

Breastfeeding benefits mothers and infants by providing protection from various health problems that lead to poor outcomes. According to Oklahoma PRAMS, less than 70% of mothers ever initiate breastfeeding, and 10% of those discontinue breastfeeding within the first two weeks.

- Request state funding for support of the OU Lactation Center Hotline, a 24-hour resource available to all Oklahoma breastfeeding women and health care providers.
- Develop a breastfeeding message that reflects the position/policy of the OSDH (“Strong & Healthy Begins With Breastfeeding”).
- Identify breastfeeding educational materials that will be used across OSDH programs.
- Explore increasing hours of breastfeeding education in health professional training programs.

8. Expand family support and education services in geographic areas of high infant mortality.

Unintentional injuries are the third leading cause of death in the postneonatal period.

- Establish an interagency focus group to identify the leading causes of unintentional fatal injuries among neonatal and postneonatal infants.
- Collaborate with Child Death Review Board, Safe Kids Inc. and the Oklahoma Department of Human Services on the development of educational materials to be used across state agencies and for service providers who promote reduction of unintentional injuries among infants.
- Review and update existing educational materials such as “Your Baby’s Safety” previously developed by the OSDH.
- Provide unintentional injury educational materials and resources on the OSDH website.
- Collaborate with the Child Death Review Board, Oklahoma City County Health Department, Tulsa Health Department, Safe Kids Inc. and the Oklahoma Department of Human Services to identify target areas for outreach and education on unintentional injuries and the impact of child maltreatment on infant mortality.

9. Strengthen capacity of the MCH Data Center (MCH Assessment) to enhance data collection and surveillance around maternal and infant health.

- Request state funding to expand the assessment of maternal and infant morbidity to reduce conditions leading to infant mortality.
- Create a comprehensive linked data system to meet MCH data analysis and program assessment need.
- Develop methodology to predict mothers and infants with negative health outcomes for targeting intervention and preventive services.
- Identify conditions that lead to poor outcomes and positive outcomes.
- Work with the Oklahoma Health Care Authority to expand data linkages of Medicaid-related data to OSDH vital records, Pregnancy Risk Assessment Monitoring System (PRAMS), The Oklahoma Toddler Survey (TOTS) and the Public Health Oklahoma Client Information System (PHOCIS) data.
- Begin expansion of Fetal and Infant Mortality Review (FIMR) projects in Oklahoma County and Tulsa County to include respective metropolitan statistical areas.
- Conduct statewide Maternal Mortality Review.
- Develop series of PRAMSGRAMs focused on African American perinatal health disparities.

10. Implement a statewide public awareness and education campaign on infant mortality to include targeted messaging for at high-risk populations.

- Request first year of multi-year state funding request for statewide public awareness and education campaign.
- Develop a comprehensive plan for a statewide public awareness and education campaign.
- Continue collaboration with Child Death Review Board on “Think, Prevent, Live” childhood injury prevention media campaign.