

**Maternal and Child Health Services
Title V Five Year Needs Assessment
July 15, 2010**

The State of Oklahoma

The Honorable Brad Henry, Governor

**Terry L. Cline, Ph.D.
Commissioner of Health
Oklahoma State Department of Health**

**Stephen W. Ronck, M.P.H.
Deputy Commissioner for
Community and Family Health Services
Oklahoma State Department of Health**

Contact persons for additional information:

**Suzanna Dooley, M.S., A.R.N.P.
Title V MCH Director
Oklahoma State Department of Health
405-271-4480**

**Karen Hylton, B.A.
Title V CSHCN Director
Oklahoma Department of Human Services
405-521-3602**

The Maternal and Child Health Service, Oklahoma State Department of Health and the Children With Special Health Care Needs Program, Oklahoma Department of Human Services express sincere gratitude and appreciation to our numerous partners that assisted with the accomplishment of the Oklahoma Title V Maternal and Child Health Needs Assessment. Your thoughtful and insightful input contributed to the development of a document that is the foundation for an ongoing process for the next five years (2011-2015) to improve the health status of the Oklahoma maternal and child health population, (pregnant women, mothers, infants, children and children with special health care needs) and their families.

Section Two

Table of Contents

Part B.

- I. Process for Conducting Needs Assessment
 - A. Goals and Vision 18
 - B. Leadership 18
 - C. Methodology 18
 - D. Methods for Assessing Three MCH Populations..... 22
 - E. Methods for Assessing State Capacity 23
 - F. Data Sources 23
 - G. Linkages Between Assessment, Capacity, and Priorities 33
 - H. Dissemination 33
 - I. Strengths and Weaknesses of Process 33
- II. Partnership Building and Collaborative Efforts 34
- III. Strengths and Needs of the Maternal and Child Health Population Groups and Desired Outcomes
 - A. Pregnant Women, Mothers and Infants 52
 - B. Children 117
 - C. Children with Special Health Care Needs 161
- IV. MCH Program Capacity by Pyramid Levels
 - A. Direct Health Care Services..... 182
 - B. Enabling Services..... 187
 - C. Population-Based Services..... 189
 - D. Infrastructure-Building Services 189
- V. Selection of State Priority Needs
 - A. List of Potential Priorities 192
 - B. Methodologies for Ranking/Selecting Priorities..... 192
 - C. Priorities Compared with Prior Needs Assessment..... 193
 - D. Priority Needs and Capacity 194
 - E. MCH Population Groups..... 195
 - F. Priority Needs and State Performance Measures..... 195
- VI. Outcome Measures – Federal and State..... 199
- VII. Bibliography 200
- VIII. Appendices 207

Index of Figures

Figure 1.	Oklahoma Population Estimate by County, 2008.....	37
Figure 2.	Change in Oklahoma Population, by Percent of Change per County, Oklahoma, 2000-2008.....	40
Figure 3.	Population Distribution by Race, Oklahoma, 2008	41
Figure 4.	Population Distribution by Race/Ethnicity, Oklahoma, 2008	41
Figure 5.	Percent of Population that is Other than White non-Hispanic, Oklahoma, 2008.....	42
Figure 6.	Percent Change in Population by Age-group, Oklahoma, 2008	45
Figure 7.	Oklahoma Economic Sectors Percent of State’s Real GDP, 2008	46
Figure 8a.	Economic Sector by Percentage of Oklahoma GDP with Percent Change, 1998-2008.....	47
Figure 8b.	Economic Sector by Percentage of Oklahoma GDP with Percent Change, 1998-2008.....	48
Figure 9.	Percent of Children Below the Federal Poverty Level, by Race/Ethnicity and by Age-group, Oklahoma, 2007	49
Figure 10.	Percent of Females Aged 15-44 Below the Federal Poverty Level, by Race/Ethnicity and by Age-group, Oklahoma, 2007.....	49
Figure 11.	Population Distribution by Insurance Status, Oklahoma and U.S., 2007-2008	50
Figure 12.	Number of Children by Medicaid/SoonerCare Enrollment and Age-group, Oklahoma, 2008.....	51
Figure 13.	Number of Reproductive Aged Females by Medicaid/SoonerCare Enrollment and Age-group, Oklahoma, 2008.....	52
Figure 14.	Reasons for Not Using Contraception at Two to Six Months Postpartum, OK PRAMS, 2007	53
Figure 15.	Percent of Females Aged 13-44 in Need of Publicly Supported Contraceptive Services and Supplies, by County, Oklahoma, 2006.....	54

Figure 16.	Prevalence of Postpartum Depression Symptoms Among Selected Demographic Groups in Oklahoma, OK PRAMS, 2006-2007.....	57
Figure 17.	Maternal Race by Pre-Pregnancy BMI, OK PRAMS, 2004-2007	59
Figure 18.	Maternal Education Level Completed by Pre-Pregnancy BMI, OK PRAMS, 2004-2007	60
Figure 19.	Oklahoma Metropolitan Statistical Areas	61
Figure 20.	Cancer Incidence Rates, Females Aged 15-44, Oklahoma, 1998-2007	64
Figure 21.	Cancer Incidence Rates by Race and Age-group, Females Aged 15-44, Oklahoma, 2005-2007.....	65
Figure 22.	Maternal Abuse Experienced During 12 Months Before Pregnancy, by Husband or Partner, OK PRAMS, 2007	66
Figure 23.	Percent of Live Births with Late or No Prenatal Care, by County, Oklahoma, 2005-2007.....	68
Figure 24.	Percent of Live Births Whose Prenatal Care Began in the First Trimester, by County, Oklahoma, 2005-2007	68
Figure 25.	Prenatal Care Coverage by Maternal Race/Ethnicity, OK PRAMS, 2005-2008	69
Figure 26.	Delivery Insurance by Maternal Race/Ethnicity, OK PRAMS, 2005-2008	70
Figure 27.	Percent of Oklahoma Females with a Live Birth During 2007 Who Received Prenatal Care During the First Trimester	71
Figure 28.	Prenatal Care Discussions Among African American/Black and White Females in Oklahoma, PRAMS, 2004-2006	73
Figure 29.	PRAMS Question For Pregnancy Intendedness	75
Figure 30.	Weight Gain Distribution (in lbs.) During Pregnancy, NCHS, 2006	77
Figure 31.	Percent of Low Birth Weight Infants by Average Number of Cigarettes Smoked, by Mother, per Day the Last Three Months of Pregnancy, OK PRAMS, 2005-2007	80

Figure 32.	Maternal Abuse Experienced During Pregnancy, by Husband or Partner, OK PRAMS, 2007	80
Figure 33.	Crude Birth Rate, Oklahoma and U.S., 1997-2006	81
Figure 34.	Fertility Rate, Oklahoma and U.S., 1997-2006	81
Figure 35.	Teen Birth Rates (Females Aged 15-19), by Year, Oklahoma and U.S., 1997-2006.....	83
Figure 36.	Teen Birth Rates (Females Aged 15-19), by Race/Ethnicity, Oklahoma, 2007.....	84
Figure 37.	Teen Birth Rates (Females Aged 15-19), by County, Oklahoma, 2005-2007.....	85
Figure 38.	Percent of Live Births that are Preterm, Oklahoma and U.S., 1997-2006	86
Figure 39.	Percent of Live Births that are Preterm by Race/Ethnicity, Oklahoma, 2005-2007.....	86
Figure 40.	Percent of Live Births that are Preterm by Maternal Age-group, Oklahoma, 2005-2007.....	87
Figure 41.	Percent of Live Births that are Preterm by Preterm Gestational Period, Oklahoma, 1993-2007.....	88
Figure 42.	Percent of Live Births Delivered by Caesarean Section, Oklahoma, 1993-2007.....	89
Figure 43.	Percent of Live Births Delivered by Caesarean Section, by Preterm Gestational Period, Oklahoma, 1993-2007	89
Figure 44.	Percent of Live Births Delivered by Caesarean Section, by Race/Ethnicity, Oklahoma, 2005-2007	90
Figure 45.	Percent of Live Births Delivered by Caesarean Section, by Maternal Age-group, Oklahoma, 2005-2007	90
Figure 46.	Percent of Live Births for which Labor was Induced, by Year, Oklahoma, 1993-2007.....	91
Figure 47.	Percent of Live Births for which Labor was Induced, by Race/Ethnicity, Oklahoma, 2005-2007.....	92

Figure 48.	Percent of Live Births for which Labor was Induced, by Maternal Age-group, Oklahoma, 2005-2007	92
Figure 49.	Rates of Selected Complications of Delivery, Oklahoma, 2005-2007 and U.S., 2006.....	93
Figure 50.	Percent of Live Births with One or More Delivery or Labor Complications, by Maternal Race/Ethnicity, Oklahoma, 2005-2007.	93
Figure 51.	Percent Of Live Births with One or More Delivery or Labor Complications, by Maternal Age-group, Oklahoma, 2005-2007	94
Figure 52.	Rates of Selected Delivery Maternal Risk Factors, Oklahoma and U.S., 2006.....	95
Figure 53.	Percent of Live Births with One or More Maternal Risk Factors, by Race/Ethnicity, Oklahoma, 2005-2007.....	95
Figure 54.	Percent of Live Births with One or More Maternal Risk Factors, by Maternal Age-group, Oklahoma, 2005-2007.....	96
Figure 55.	Maternal Mortality Rate, Oklahoma, 1997-2006.....	97
Figure 56.	Percent of Very Low Birth Weight Infants (< 1500 Grams) Among All Live Births, Oklahoma, 1997-2007, and U.S., 1997-2006	104
Figure 57.	Percent of All Live Births that are Low Birth Weight (< 2500 Grams), Oklahoma, 1997-2007, and U.S., 1997-2006	105
Figure 58.	Percent of Live Births with One or More Congenital Anomalies, by Maternal Race/Ethnicity, Oklahoma, 2005-2007	106
Figure 59.	Percent of Live Births with One or More Congenital Anomalies, by Maternal Age-group, Oklahoma, 2005-2007.....	106
Figure 60.	Rate of Selected Congenital Anomalies, Oklahoma, 2005-2007, and U.S., 2006.....	107
Figure 61.	Percent of Infants Placed on Backs to Sleep, for Most Sleep Episodes, OK PRAMS, 2000-2007.....	109
Figure 62.	Infant Mortality Rate, Oklahoma and U.S., 1980-2006.....	110
Figure 63.	Infant Mortality Rate, Regional State by State Comparison, Oklahoma and U.S., 2006	110

Figure 64.	Infant Mortality Rate by County, Oklahoma, 2002-2006.....	112
Figure 65.	Infant Mortality Rate per 1,000 Live Births by Race/Ethnicity, Oklahoma, 2004-2006.....	113
Figure 66.	Infant Mortality Rates by Period of Death, Oklahoma and U.S., 1980-2006.....	114
Figure 67.	Fetal Death Rate, Oklahoma, 1992-2006.....	115
Figure 68.	Perinatal Mortality Rate, Oklahoma, 1992-2006.....	116
Figure 69.	Number of Children by Medicaid/SoonerCare Enrollment, Oklahoma, 2008.....	118
Figure 70.	Prevalence of Program Participation by Families Receiving Support from a Social Program, OK First Grade Health Survey, 2007-2008.....	121
Figure 71.	First Graders' Most Recent Dental Visit, OK First Grade Health Survey, 2007-2008.....	125
Figure 72.	Having at Least One Major Depressive Episode in Past Year Among Youth Aged 12 To 17, by State, Percentages, Annual Averages Based on 2005 And 2006 NSDUHs.....	126
Figure 73.	Toddler's Television Viewing Time by Maternal Demographics, TOTS, 2006-2008.....	132
Figure 74.	Percentage of High School Students, Who were Overweight or Obese, by Gender, Oklahoma Youth Risk Behavior Survey, 2009.....	133
Figure 75.	Selected Questions Regarding Physical Activity, by Gender, Oklahoma Youth Risk Behavior Survey, 2009.....	133
Figure 76.	Selected Questions Regarding Fruit and Vegetable Consumption, by Gender, Oklahoma Youth Risk Behavior Survey, 2009.....	134
Figure 77.	Percent of First Graders Reported by their Parents to Be Bullied at School, OK First Grade Health Survey, 2007-2008.....	135
Figure 78.	Percent of Child Abuse and Neglect Confirmations by Category, Oklahoma Department of Human Services, SFY 2009.....	136
Figure 79.	Percent of Child Abuse and Neglect Confirmations by Age of Victim, Oklahoma Department of Human Services, SFY 2009.....	136

Figure 80.	Percent of Child Abuse and Neglect Confirmations by Race, Oklahoma Department of Human Services, SFY 2009	137
Figure 81.	Three-Year Rate of Child Abuse and Neglect Confirmations by per 1,000 Children Aged 17 Years and Younger by County, SFY 2007-SFY 2009	138
Figure 82.	Number of Days of Limited Activity Due to Illness in the Past Three Months, OK First Grade Health Survey, 2007-2008	140
Figure 83.	Diagnosed Health Conditions Among First Graders, OK First Grade Health Survey, 2007-2008	140
Figure 84.	Percent of Young Adults Aged 18-24 with a Current Asthma Diagnosis, Oklahoma Behavior Risk Factor Surveillance System, 2000-2008	142
Figure 85.	Cigarette Smoking by Public High School Students, Oklahoma Youth Risk Behavior Survey, 2009	145
Figure 86.	Cigarette Smoking by Public High School Students, by Grade, Oklahoma Youth Risk Behavior Survey, 2009.....	146
Figure 87.	Trends in Cigarette Smoking, Oklahoma Youth Risk Behavior Survey, 2003-2009	146
Figure 88.	Questions Regarding Depression and Suicide, by Gender, Oklahoma Youth Risk Behavior Survey, 2009	147
Figure 89.	Questions Regarding Depression and Suicide, by Grade, Oklahoma Youth Risk Behavior Survey, 2009	148
Figure 90.	Percentage of Students Who Used a Condom at Last Sexual Intercourse, Oklahoma Youth Risk Behavior Survey, 2003-2009	149
Figure 91.	Chlamydia Infection Rates by Age-group, Oklahoma, 2007-2008	150
Figure 92.	Chlamydia Infection Rates by Race/Ethnicity, Oklahoma, 2007-2008.....	151
Figure 93.	Child Mortality Rates by Age-group, Oklahoma, 1992-2006	157
Figure 94.	Aggregated Child Mortality Rates by Age-group, Oklahoma, 2002-2006	157
Figure 95.	Adolescent and Young Adult Mortality Rates Age-Group, Oklahoma, 2006, and Healthy People 2010	158

Figure 96.	Motor Vehicle Mortality Rates by Gender, Ages 15-24, Oklahoma, 2002-2006.....	159
Figure 97.	Motor Vehicle Mortality Rates by Race/Ethnicity, Ages 15-24, Oklahoma, 2002-2006.....	160
Figure 98.	Suicide Mortality Rates by Gender, Ages 15-24, Oklahoma, 2002-2006	160
Figure 99.	Suicide Mortality Rates by Race/Ethnicity, Ages 15-24, Oklahoma, 2002-2006.....	161
Figure 100.	Estimated Distribution of Children with Special Health Care Needs Across Oklahoma Counties, Sooner Success Community Needs Assessment, 2007-2008	162
Figure 101.	CSHCN Population Distribution by Age in Oklahoma and U.S, NSCH, 2007.....	162
Figure 102.	Oklahoma CSHCN Population Distribution by Gender, NS-CSHCN 2005-2006, NSCH, 2007.....	163
Figure 103.	Three Survey Comparisons of CSHCN Population Distribution by Race/Ethnicity in Oklahoma, 2005-2008.....	164
Figure 104.	Percentage of CSHCN Families in Each Income Level Above or Below the Federal Poverty Level, NSCH, 2007	164
Figure 105.	Number of Children (< 20 Years of Age) with Disabilities Receiving SSI from 2001-2009, OKDHS.....	165
Figure 106.	Racial/Ethnic Distribution of Children with Disabilities Receiving SSI from 2001-2006, OKDHS.....	165
Figure 107.	Gender Distribution of Children with Disabilities Receiving SSI from 2001-2006, OKDHS.....	166
Figure 108.	Prevalence of Special Health Care Conditions Among Survey Participants, Sooner Success Community Needs Assessment, 2007-2008.....	168
Figure 109.	Choice of Provider Among CSHCN for Health Services, NSCH, 2007.....	170

Figure 110.	Number of Preventive Medical Care Visits in the Past 12 Months for CSHCN, NSCH, 2007	170
Figure 111.	Parental Reported Number of Preventive Dental Care Visits in the Past 12 Months, NSCH, 2007	171
Figure 112.	Average Number of Routine Dental Visits by SoonerCare Eligible Children per Month, OHCA, 2007	172
Figure 113.	Number of Oral Health Problems in the Past 12 Months by CSHCN Status, NSCH, 2007.....	172
Figure 114.	Condition of CSHCN’s Teeth as Reported by Parents, NSCH, 2007	173
Figure 115.	Parent Report of whether CSHCN has Received Any Treatment/ Counseling from a Mental Health Professional, NSCH, 2007	174
Figure 116.	Perceptions of Quality of Mental Health Services in Oklahoma for Foster Children According to Caseworkers and Foster Parents	175
Figure 117.	Most Common Method of Accessing Mental Health Services for Foster Children in Oklahoma.....	175
Figure 118.	Percentage of Uninsured CSHCN Across Surveys, NS-CSHCN, 2005-2006, NSCH, 2007.....	176
Figure 119.	How Often CSHCN Parents Received the Extra Help they Needed, NSCH, 2007, NS-CSHCN, 2005-2006.....	178
Figure 120.	Child Care Usage for CSHCN, NSCH, 2007	178
Figure 121.	Oasis Processed Respite Vouchers by Race/Ethnicity, 2004-2009	179
Figure 122.	Most Frequently Identified Needs, Family Perspective, CNA, 2007-2008	181
Figure 123.	Most Frequently Identified Needs, Provider Perspective, CNA, 2007-2008.....	182
Figure 124.	Primary Care Health Professional Shortage Areas (HPSA), February 2010, Oklahoma State University Center for Rural Health	186
Figure 125.	Mental Health Professional Shortage Areas (HPSA), March 2010, Oklahoma State University Center for Rural Health.....	187

Index of Tables

Table 1.	Annual Estimates of the Population for Oklahoma Counties, July 1, 2005 to July 1, 2008 and U.S. Census, April 1, 2000	38
Table 2.	Population of Children and Females of Childbearing Age, Oklahoma, 2008.....	43
Table 3.	Receipt of a Dental Visit at Least One Year Prior to Pregnancy by Maternal Demographics, OK PRAMS, 2006-2007	55
Table 4.	Percent of Females Regularly Consuming Multivitamins Preconceptionally by Maternal Demographics, OK PRAMS, 2007.....	58
Table 5.	Chlamydia and Gonorrhea Infection Rates by Age-group, Females Aged 15-44, Oklahoma, 2008	61
Table 6.	Chlamydia and Gonorrhea Infection Rates by Metropolitan Statistical Areas, Females Aged 15-44, Oklahoma, 2008	62
Table 7.	Chlamydia and Gonorrhea Infection Rates by Race, Females Aged 15-44, Oklahoma, 2008.....	62
Table 8.	Top 10 Cancer Incidence Rate Comparison, Females of All Ages, Oklahoma and U.S., 2006.....	63
Table 9.	Top 10 Cancer Sites for Females Aged 15-44, Oklahoma, 2005-2007	65
Table 10.	Top 10 Rankable Causes of Death for Females Aged 15-44, by Age-group, Oklahoma, 2004-2006	67
Table 11.	Prevalence of Subsequent Unintended Pregnancies According to Intention of Prior Pregnancy, TOTS, 2004-2007.....	74
Table 12.	Logistic Regression of Factors Influencing Two Consecutive Unintended Pregnancies, TOTS, 2004-2007	74
Table 13.	Percent of Births that were Unintended by Maternal Characteristics, OK PRAMS, 2007	76
Table 14.	Percentage of All Females by Pre-Pregnancy BMI Whose Pregnancy Weight Gain Fell Below, Met, or Exceeded ACOG Guidelines, OK PRAMS, 2005-2007	78
Table 15.	Percentage of Mothers That Reported Smoking Before, During, and After Pregnancy by Selected Demographics, OK PRAMS, 2006-2007	79

Table 16.	Total Number of Births by Maternal Age, and Race/Ethnicity, Oklahoma, 1998-2007.....	82
Table 17.	Percent of Births by Maternal Age, within Racial Groups, Oklahoma, 2007.....	83
Table 18.	Number of Maternal Deaths and Maternal Mortality Rates for Selected Causes, by Race, Oklahoma, 1999-2006.....	98
Table 19.	Multivariate Logistic Regression Adjusted Odds Ratio for Exclusive Breastfeeding for Six Weeks or Longer, OK PRAMS, 2005-2007.....	101
Table 20.	Infant Secondhand Smoke Exposure Levels by Maternal Demographics, OK PRAMS, 2006-2007.....	102
Table 21.	Percent of Live Births that are Low Birth Weight (<2500 Grams) by Race/Ethnicity, Oklahoma, 1998-2007.....	105
Table 22.	Top 10 Rankable Causes of Infant Death Based on the International Classification of Diseases, Tenth Revision (ICD-10), Oklahoma, 2004-2006, and U.S., 2006.....	111
Table 23.	Infant Mortality Rates by Completed Weeks of Gestation and Race/Ethnicity, Oklahoma, 2002-2006.....	113
Table 24.	Neonatal, Postneonatal, and Infants, Infant Mortality Rates by Maternal Age-group, Oklahoma, 2002-2006.....	114
Table 25.	PPOR Map of Fetal and Infant Deaths, Oklahoma, 2002-2006.....	117
Table 26.	Health Insurance Coverage Among Toddlers, TOTS, 2008.....	119
Table 27.	Health Care Accessibility for Toddlers, TOTS, 2008.....	121
Table 28.	Oral Health Among Toddlers, TOTS, 2008.....	124
Table 29.	Physical and Developmental Conditions Among Oklahoma First Graders, OK First Grade Health Survey, 2007-2008.....	129
Table 30.	Secondhand Smoke Exposure Among Toddlers, TOTS, 2008.....	130
Table 31.	Hours of Television Viewing Among Toddlers, TOTS, 2008.....	131
Table 32.	Activity Limitations and Illness Among Two-Year-Olds, TOTS, 2008.....	139

Table 33.	Prevalence of Toddler Asthma-like Conditions by Selected Maternal Demographics, TOTS, 2008.....	141
Table 34.	Percentage of Children with Asthma Aged 0-17, NSCH, 2007	142
Table 35.	Questions Regarding Substance Abuse by Year, Oklahoma Youth Risk Behavior Survey, 2003-2009.....	143
Table 36.	Questions Regarding Alcohol Use, by Gender, Oklahoma Youth Risk Behavior Survey, 2009	144
Table 37.	Questions Regarding Alcohol Use, by Year, Oklahoma Youth Risk Behavior Survey, 2003-2009	144
Table 38.	Questions Regarding Sexual Behavior by Gender, Oklahoma Youth Risk Behavior Survey, 2009	148
Table 39.	Questions Regarding Sexual Behavior by Grade Level, Oklahoma Youth Risk Behavior Survey, 2009	149
Table 40.	Questions Regarding Violence by Gender, Oklahoma Youth Risk Behavior Survey, 2009.....	152
Table 41.	Questions Regarding Violence by Grade Level, Oklahoma Youth Risk Behavior Survey, 2009	153
Table 42.	Prevalence and Type of Injuries Occurring to Two-Year-Olds, TOTS, 2008.....	154
Table 43.	Safety Measures for Oklahoma’s Two-Year-Olds, TOTS, 2008	155
Table 44.	Behavior Regarding Driving or Riding in a Vehicle While Drinking Alcohol, Oklahoma Youth Risk Behavior Survey, 2009.....	156
Table 45.	Leading Causes of Death by Age-group, Oklahoma, 2004-2006	158
Table 46.	Race/Ethnicity and Family Structure of CSHCN in Oklahoma, Compared to U.S., NSCH, 2007	163
Table 47.	Percentage of CSHCN in Oklahoma with Condition Indicated, NSCH, 2007.....	167
Table 48.	Prevalence of Selected Health Conditions in Oklahoma, NS-CSHCN, 2005-2006	168

Table 49.	Changes in the Prevalence of Selected Special Health Care Needs in Oklahoma, NSCH, 2003 and 2007	169
Table 50.	Percentage of Oklahoma Caseworkers and Foster Parents Who Agree with the Following Statements (Shropshire & Gillaspay).....	174
Table 51.	Percentage of Parents of CSHCN Who Needed or Received Help Arranging or Coordinating Care Concerning CSHCN, NSCH, 2007	177
Table 52.	Indicators in the Oklahoma State Department of Education, OK State Performance Plans, 2005-2007	180
Table 53.	Ratio of Health Care Professionals to the Population, Oklahoma and U.S., 2006.....	184
Table 54.	Oklahoma Title V Priorities	194
Table 55.	National and State Performance Measures by Selected State Priorities (and data sources).....	196

Index of Appendices

- Appendix A. Public Title V Online and Hard Copy Priority Survey
- Appendix B. Summary of Online Title V Priority Survey Results
- Appendix C. Perinatal and Child Health Priority Matrix
- Appendix D. Flowchart of Process for Soliciting Community and Stakeholder Input for the 2011-2015 Oklahoma Title V Priorities
- Appendix E. Acronyms for the Oklahoma Title V Needs Assessment
- Appendix F. Perinatal and Child Health Advisory Task Force PowerPoint Presentations
- Appendix G. Participants in the Oklahoma Title V Needs Assessment Process, 2011-2015

I. Process for Conducting Needs Assessment

A. Goals and Vision

Lessons learned from Oklahoma's previous five-year needs assessment process, input from partners and stakeholders, and guidance and training received from the Health Resources Services Administration (HRSA), Maternal and Child Health Bureau (MCHB) assisted in setting the overall goals and vision for Oklahoma's Maternal and Child Health (MCH) Title V Block Grant needs assessment process. The goals of the Oklahoma State Department of Health (OSDH) and the Oklahoma Department of Human Services (OKDHS) are to provide a document with quality data specific to Oklahoma's MCH population groups that sets a foundation for addressing and evaluating progress on identified health priorities; includes input from families and health experts as key processes within the needs assessment process; and, is readily available for use by others who make decisions about and/or develop, provide, and evaluate services to the Oklahoma's MCH population groups. It is envisioned that the needs assessment be considered a critical resource for the state, identifying priorities for improving the health status of Oklahoma's pregnant women, mothers, infants, children, and children with special health care needs.

MCH and the Children with Special Health Care Needs (CSHCN) Program will use the needs assessment to guide Title V activities for the years 2011-2015. A five-year plan that addresses national and state priorities and sets targets for improvement has been developed using this information. In interim years, changes in Oklahoma's MCH population groups' strengths and needs will be assessed and monitored and may lead to changes in the identified state priorities, state performance measures, and/or targets set for national and state performance measures. Resources allocated to impact improvement in the health status of MCH population groups are continually monitored for change as part of this ongoing process.

B. Leadership

The Oklahoma Title V MCH Director, Title V CSHCN Director, and Oklahoma Family Network (OFN) Executive Director provided overall direction and guidance for the needs assessment process. The State Systems Development Initiative (SSDI) Project Manager coordinated the needs assessment process to assure completion of activities by identified target dates. The Director of MCH Assessment and the Oklahoma Title V Data Contact assured quality of data. Routine meetings assisted in the process with needed communications between staff occurring via telephone or electronically between meetings.

C. Methodology

Oklahoma receives federal funding in the form of the MCH Title V Block Grant which is administered through MCH, Community and Family Health Services within the OSDH. The MCH Title V Block Grant requires that all states allocate a minimum of 30 percent of available funds to children (Part B) and a minimum of 30 percent of funds for children with special health care needs (Part C). There is no requirement within the MCH Title V Block Grant related to a specific funding amount for pregnant women, mothers, and infants (Part A).

The MCH Title V Block Grant Guidance has 18 national performance measures and provides for states to select and report on up to ten identified state-specific performance measures. All performance measures are intermediate steps towards changing identified health priorities and outcomes that impact Oklahoma's MCH population.

In preparation for the current MCH Title V Block Grant Needs Assessment select OSDH MCH and CSHCN staff were sent to participate in several official federal government sponsored trainings and workshops concerning the MCH Title V Block Grant Needs Assessment:

- Albuquerque, New Mexico, September 2008, Public Health Education Consortium, Block Grant Needs Assessment Workshop.
- Atlanta, Georgia, December 2008, Association of Maternal and Child Health Programs (AMCHP), MCH-Epi Conference. Needs Assessment Practice Technical Assistant Workshop.
- Washington DC, August 2009, State Systems Development Initiative (SSDI) MCH Federal-State Partnership Meeting. Needs Assessment Workshop.

It was through these newly acquired knowledge and skills, along with the study of several previous MCH Title V Needs Assessments, written by Oklahoma and various other states (Colorado, New Mexico, Arkansas, Oregon, Texas, and Iowa) that Oklahoma was able to prepare and present Oklahoma's Five Year Needs Assessment.

Beginning in March 2008, MCH and CSHCN began inviting stakeholders, including families to their routine monthly meetings to begin gathering information for the needs assessment process. Family input and involvement were provided by the OFN, Oklahoma's Family-to-Family Health Information and Education Center. The OFN is an independent, statewide non-profit resource and support network offering Oklahomans parent-to-parent mentorship, training, and resource information.

At each monthly meeting, stakeholders were asked to provide their perspective on any issues that they considered relevant to the MCH population their specific organizations served. These guests expressed their opinions as to the needs that were and were not being met within the current MCH Title V Block Grant. These guests also gave suggestions as to how Oklahoma might concentrate on the issues and improvements they felt were necessary to help implement any positive changes in the MCH population. All this information was discussed at length among MCH, CSHCN, and OFN and assisted in the next steps of the needs assessment process.

In February 2009, an email was drafted and sent out to OSDH and OKDHS staff and partner agencies, including OFN, the Perinatal Advisory Task Force (PATF), Southern Plains Inter-Tribal Epidemiology Center, and the Child Health Advisory Task Force (CHATF) announcing the State's intent to open an anonymous, online survey to the public. The PATF and CHATF include representatives from the following groups: family representatives; medical, dental and nursing professional organizations; public and private medical providers; social services agencies; March of Dimes; HeadStart; Early Childhood; Healthy Start; Primary Care; Oklahoma State Department of Education (OSDE); Oklahoma Department of Mental Health and Substance Abuse Services (ODMHSAS); and Oklahoma Institute of Child Advocacy (OICA).

The electronic announcement explained Title V, its funding source and mission, and at the same time directed the potential respondents on where, when, and how to access the survey. The survey was a tool to educate the public, while at the same time gain public input into the identification of priority health issues affecting the state's MCH population. The OSDH and

OKDHS also initiated a joint press release on March 30, 2009, making the public aware of the need to receive public opinions and insights allowing everyone the opportunity to be involved in the process to help guide the Title V program and its efforts.

In April 2009, the anonymous online survey was created utilizing the SurveyMonkey website, and routed with a live link attachment through the OSDH Postmaster email system and through partner agencies, organizations, and groups via their electronic distribution networks. In addition, a link was placed on the OSDH website. The survey asked three open ended questions directing the participant to share their thoughts on each of the three key population groups of the Title V Block Grant: pregnant women, mothers, and infants; children; and children with special health care needs. Another feature of the survey was to ask each respondent to rank, in order of importance, a select list of priorities, again addressing each of the three MCH population groups. Each of the three priority lists, chosen from the last needs assessment, included a section where open-ended comments could be made on topics that were not listed. The survey also made available an optional segment where more demographic information could be collected. These optional demographic questions focused on how the respondent classified him/herself in regards to occupation (more than one response could be selected): educator; member of a faith-based organization; local or state government employee; a concerned parent; health care clinician; clerical/support staff; social services provider; community-based organization member; public health worker; other. The respondent's race, (more than one response could be selected), the respondent's zip code, and how many years the respondent has called Oklahoma home were also included. To make the survey more inclusive for individuals and families unable to complete online, a hard copy of the survey was available, along with a postage paid return envelope. For comments from Spanish-speaking respondents a translated version of the survey was supplied, when requested, along with a postage paid return envelope. A copy of the survey in English can be found in Appendix A.

In addition, 600 printed postcards announcing the survey were placed into each participant welcome packet at the Oklahoma Public Health Association's (OPHA) annual meeting held in Oklahoma City at the Sheraton Downtown, April 5-10, 2009. Postcards were also distributed by request and made available at various meetings that were organized and held throughout the state for health care professionals, public health workers, and the public during the April-November 2009 time frame.

The OFN distributed hardcopies of the survey to families at their Joining Forces Conference in April 2009. Approximately 200 surveys and postcards were handed out, with postage paid envelopes. The OKDHS also distributed the survey in hardcopy form and handed out the postcards to families encountered during their "On the Road" meetings.

The intent of the survey was to gain public input, from across the state allowing individuals to voice their opinions and ideas in the hopes of more accurately directing Title V funds where they are needed and would have a more effective impact upon the MCH population. All of this information was then collected, analyzed, and recoded. In August, 2009, the results of the initial online survey were placed on the OSDH website. Also, during the month of August the above mentioned survey, by request, was reopened to solicit further input from the public and remained opened to the end of November 2009. More specifically, additional public input was sought

through Turning Point, 60 community-based coalitions throughout Oklahoma's 77 counties, with unique points of contact to the MCH population. At the end of November, all data from the online survey were combined, analyzed, and recoded. Software utilized for the collection and analysis of the survey were the EZ Text, SAS v9.1, MS Excel 2003 and MS Excel 2007. In December 2009, the final revised results were summarized and placed on the OSDH website. (Appendix B)

Another aspect of the needs assessment process involved OSDH compiling comments from past Oklahoma Pregnancy Risk Assessment Monitoring System (PRAMS) surveys, utilizing EZ Text, SAS v.9.2, and SUDAAN v.10.0 software. These comments were recorded and analyzed to further enhance PRAMS data and gain additional insight into Oklahoma's maternal population.

To collect further input on the priority needs for Oklahoma's CSHCN population, information was gathered from three additional targeted surveys. The first was an online survey sent to families who are part of the OFN, Oklahoma's parent-to-parent network for CSHCN (Appendix A). The 38 respondents to this survey indicated access to services information was the top priority need. The second was a survey conducted with providers who were CHATF members, with 40 members responding to the survey. The need most often identified was increased knowledge among the public, providers, and county health departments regarding services available to CSHCN. More respite care, access to child care and health care, and more parenting classes all received almost the same ranking with this group of respondents. The third was the Community Needs Assessment (CNA) conducted by Sooner SUCCESS (State Unified Children's Comprehensive Exemplary Services for Special Needs). The results of the CNA showed that the greatest need for families was learning labs. After further interviews it was determined that different families had different ideas of what defines a learning lab. Since there was not a consensus on what a learning lab is, it was decided further evaluation would be needed before considering this as a need for CSHCN.

Data to highlight areas of need for the MCH population were analyzed from the following sources: population-based surveillance data from the PRAMS; The Oklahoma Toddler Survey (TOTS); the Oklahoma Youth Risk Behavior Survey (YRBS); the Oklahoma First Grade Health Survey (1GHS); Oklahoma vital records; U.S. Census population estimates; the State and Local Area Integrated Telephone Survey (SLAITS); needs assessments of other Oklahoma MCH programs; private, non-profit health-based surveys or studies; agency services data from the OSDH, the Oklahoma Health Care Authority (Medicaid data), and OKDHS; and other federal and state surveys.

Integration of the community input and existing data was begun in October 2009. An outline for the needs assessment document was created as a way to organize the information about the state's MCH population groups. Designing the needs assessment document outline, staff included topics from the community survey, past needs assessment priorities, Title V outcome measures, and Title V state and federal performance measures. Points of concern from the community were corroborated with data compiled from the above mentioned sources. Recognized needs that had no current data source were highlighted and discussed by MCH, CSHCN, and OFN to determine the extent of the issue and whether a specific data source could be developed. A data gap was not a deterrent from making the issue a priority. Direct health,

Enabling, Population-based, and Infrastructure Building services were taken into consideration to determine the potential impact upon the MCH population groups.

MCH, CSHCN, and OFN explored input from the data collected for the needs assessment, current priorities for the Oklahoma Health Improvement Plan (OHIP), OSDH Strategic Targeted Action Teams (STAT), and ongoing work by the OFN, Sooner SUCCESS, and the CSHCN program at OKDHS. A matrix (Appendix C) adapted from the work of Mary Peoples-Sheps was used to rank issues identified from the survey and data to narrow the number of issues down to the top 10-12 for each of the MCH population groups (Peoples-Sheps, 2005). The matrix results were used to guide discussion at the PATF and CHATF task force meetings to further identify a list of three to five potential priorities for each of the three MCH population groups. The priorities discussed at PATF and CHATF meetings were modified, collapsed, and analyzed to determine what priorities were feasible, could be acted upon at all service levels of the pyramid, and would enact change in the health of Oklahomans.

In summary, the Title V Needs Assessment for the years 2011-2015 consisted of an 18-month process that culminated in the setting of ten state priorities as focus areas to improve the health of pregnant women, mothers, infants, children, and children with special health care needs. Through the continuous and ongoing collection, extensive research, evaluation, and analysis of all available data, along with routine planning meetings, MCH, CSHCN, and OFN were able to formulate a plan to improve the health of Oklahoma's MCH population taking into account the state's current and anticipated economic climate and system capacity. Over 700 community members, social service and public health professionals, family members, and health care providers participated in the process which began with open-ended comments in a survey and became increasingly more focused as time and efforts progressed.

A flowchart summarizing the public and stakeholder involvement in the 2011-2015 Oklahoma MCH Title V Needs Assessment process can be found in Appendix D. A list of all the acronyms used to describe programs, policies, and populations can be found in Appendix E.

Looking forward, Oklahoma invites and encourages continued input and involvement in helping to improve the health of Oklahoma's MCH population. Input can be provided by contacting Suzanna Dooley, Title V MCH Director, at (405) 271-4480, or via email at suzannad@health.ok.gov.

D. Methods for Assessing Three MCH Populations

The present needs assessment utilizes both qualitative and quantitative data gathered from an array of sources chosen for their sound epidemiologic methods and processes. The following data sources are the primary sources used to provide information on the strengths and needs of each of the three MCH population groups:

(1) Pregnant women, mothers, and infants: the Oklahoma Pregnancy Risk Assessment Monitoring System (PRAMS), Public Health Oklahoma Client Information System (PHOCIS), Behavioral Risk Factor Surveillance System (BRFSS), Title X Family Planning Annual Report, the Oklahoma Health Care Authority (OHCA), Injury Prevention Service, U.S. Census Bureau,

Centers for Disease Control and Prevention (CDC), Oklahoma Department of Commerce, Oklahoma Vital Records, focus groups;

(2) Children: The Oklahoma Toddler Survey (TOTS), First Grade Health Survey (1GHS), the Youth Risk Behavior Survey (YRBS), Injury Prevention Service, Youth Tobacco Survey (YTS), PHOCIS, National Survey of Children's Health (NSCH), Third Grade Oral Health Survey, National Immunization Survey (NIS), OHCA, Oklahoma Vital Records, the Oklahoma State Department of Education (OSDE), the OKDHS;

(3) Children with special health care needs: the 2005-2006 National Survey of Children with Special Health Care Needs (NS-CSHCN), the 2003 and 2007 National Survey of Children's Health (NSCH), the 2007-2008 Sooner SUCCESS (State Unified Children's Comprehensive Exemplary Services for Special Needs) Community Needs Assessment (CNA), the Oklahoma Areawide Services Information System (OASIS), the OSDH, the OHCA, the OSDE, the OKDHS, and research studies, such as the 2008 Oklahoma Foster Children Study.

When possible, state findings are compared with national findings, providing insight into Oklahoma's MCH population in light of the national picture. Trends are also examined. All sources are referenced appropriately.

E. Methods for Assessing State Capacity

Information to assess the capacity of the state was derived from a variety of data sources. Data on health care provider shortages and education was obtained from the report "Trends in Oklahoma Hospital Professions Supply, Vacancies, Turnover & Educational Capacity Expansion" (Oklahoma Health Care Workforce Center, 2009). Information on rural health capacity issues was received from the State of the State's Rural Health Report (Oklahoma State University Center for Rural Health, 2008). The following section (Part F. Data Sources, page 23) provides a detailed list of sources used for assessing state capacity and the strengths and needs of the MCH population groups. Each data source lists how it has been used in the needs assessment document to provide information on the state's capacity to provide direct health care, enabling, population-based, and infrastructure building services. The list is included in italics at the end of each data source description.

F. Data Sources

The following is a list of the primary qualitative and quantitative data sources utilized:

The Oklahoma Pregnancy Risk Assessment Monitoring System (PRAMS)

PRAMS is an on-going program funded through a collaborative agreement with the Centers for Disease Control and Prevention (CDC). Initiated in 1987, PRAMS conducts statewide population-based surveillance of preconception, prenatal, and postpartum behaviors, attitudes, and practices of females who delivered a live birth. The goal of the Oklahoma PRAMS (OK PRAMS) is to reduce infant morbidity and mortality by identifying and measuring the change in maternal behaviors during pregnancy and early infancy. The four objectives identified to meet the goal are: 1) describe maternal behaviors during pregnancy and early infancy; 2) analyze relationships between behaviors that occur before, during, and after pregnancy and selected pregnancy outcomes (e.g., prematurity, low birth weight); 3) serve as a resource for the

development, assessment, and implementation of intervention programs, and for targeting programs effectively; and 4) assess factors related to utilization of intervention programs.

The OK PRAMS is a population-based survey of Oklahoma females with a recent delivery. Analysis weights are applied to adjust for selection probability and non-response. By using weighted analysis, researchers can make strong statements about the preconception, prenatal, and postpartum periods for the entire population of females in Oklahoma delivering a live birth. Thus, state-specific decisions on policy and program development can be made. A stratified systematic sampling approach is used to select approximately 250 new mothers each month from the state's live birth registry. Up to three mailed questionnaires are used to solicit a response. Telephone interviews are attempted for non-respondents. Data elements collected by OK PRAMS include prenatal care access, tobacco use before, during, and after pregnancy, pregnancy related morbidity, health insurance coverage, breastfeeding, and postpartum depression symptoms. *Components of the needs assessment information addresses: Direct Health Care, Enabling, Population-based, and Infrastructure Building.*

Strengths: 1) Results from OK PRAMS are representative of the state's population of mothers who have recently given birth. 2) Mail surveillance is a less expensive method of data collection than other methods. 3) Mail surveillance avoids interviewer bias. 4) Correct addresses are easily obtainable from birth certificates. 5) Mail surveillance is less resource-intensive than methods that rely on interviewers. 6) Telephone follow-up of non-respondents can enhance the mother's willingness to participate. 7) Telephone follow-up can address the issue of mother's who cannot read or write or who have visual impairments. 8) The study design is thoroughly researched and closely monitored to assure valid survey response and quality data. 9) Surveillance is ongoing, allowing for longitudinal study. 10) Response rates are high, at least 70% overall.

Weaknesses: 1) Sample size is not large enough to provide local level information for community-based planning, nor was the survey designed to provide geographic subanalysis or analysis of rare events. 2) Survey questions are predetermined, standard, and closed ended which could result in a failure to identify new and emerging trends and the most important aspects of current problems and issues. 3) The complexity of the PRAMS database and weighting design requires long-term analysis by specially trained personnel, which limits the timeliness in which new information can be made available. 4) Mail surveys assume that the mothers can read and write English or Spanish and have no visual impairment. 5) Inquiries about questions cannot be readily addressed. 6) The identity of the respondent cannot be verified. 7) Non-respondents without telephones will be lost to follow-up. 8) Telephone interviewer may introduce bias. 9) The increased usage of cell phones adds an additional barrier to follow-up since there are no directories and phone numbers are more transient compared to landlines.

The Oklahoma Toddler Survey (TOTS)

MCH implemented TOTS in December of 1994. TOTS actively surveys a sample of state resident mothers with children two years of age. The survey is designed as a longitudinal follow-up survey to OK PRAMS and is currently one of only four such projects nationwide. TOTS incorporates the use of a combined mail and telephone methodology for data collection similar to that of OK PRAMS. The overall purpose of TOTS is to: 1) determine the health

status of Oklahoma two-year-olds; 2) determine access to health care and related services; 3) identify behavioral risk factors and system barriers; and 4) inform program planning and policymaking. Data elements collected by TOTS include childcare, tobacco exposure, illness, activity limitations, injury, health insurance, nutrition, safety, family structure, and maternal and paternal demographics. *Components of the needs assessment information addresses: Direct Health Care, Enabling, Population-based, and Infrastructure Building.*

Strengths: 1) Results from TOTS are generalizable to two-year-old children who were born in the state, and can be used to make broad estimates of the state-wide prevalence of children with special needs in this age-group. 2) The First Grade Health Survey, and the TOTS information allows the state to look at age-graded issues such as rates of increase or onset of health conditions and use of health care services. 3) Overall, service utilization patterns, which are not limited to those publicly funded, can be identified through TOTS data. 4) TOTS improves the state's ability to develop more reliable estimates of condition prevalence and health care disparities. 5) Structural or exogenous factors that are not generally studied can be identified. 6) TOTS can be linked back to records in OK PRAMS allowing for more in-depth analysis of prenatal health and lifestyle factors and the later development of chronic health conditions in children.

Weaknesses: 1) Sample size is not large enough to provide local level information for community-based planning. 2) Survey questions are predetermined, standard, and closed ended which could result in a failure to identify new and emerging trends and the most important aspects of current problems and issues. 3) The complexity of the TOTS database and weighting design requires long-term analysis by specially trained personnel, which limits the timeliness in which new information can be made available.

First Grade Health Survey (1GHS)

The 1GHS is a population-based survey developed by MCH to: 1) determine the current health status of young children; 2) determine access to coordinated health care and related services; 3) identify behavioral risk factors and the impact of those behaviors on well-being; and 4) inform program planning and policymaking. Data elements include chronic illnesses, developmental delay, home safety, hospitalizations and injuries, insurance coverage, nutrition, physical activity, and tobacco exposure. *Components of the needs assessment information addresses: Direct Health Care, Enabling, Population-based, and Infrastructure Building.*

Strengths: 1) When the response rate is sufficient and the data are weighted, results from these surveys are generalizable to first grade children in the public schools across the state. 2) This survey allows the state to look at issues such as rates of increase or onset of health conditions and use of health care services. 3) The state is better able to identify overall service utilization patterns which are not limited to those publicly funded. 4) The 1GHS methodology enables the state to develop more reliable estimates of condition prevalence and health care disparities. 5) The state is also better able to identify structural or exogenous factors that are not generally considered.

Weaknesses: 1) School-based survey methods may not be able to reach those in the greatest need such as children who are physically, mentally, or emotionally unable to attend public school

or are receiving home schooling or private instruction. 2) School-based surveys fail to reach children who are ill, truant or otherwise missing on the day the instrument was administered. 3) Sample size is not large enough to provide local level information for community-based planning. 4) Survey questions are predetermined, standard, and closed ended which could result in a failure to identify new and emerging trends and the most important aspects of current problems and issues. 5) The survey is based upon the parents' or guardians' perceptions of the children's health, and they may over or under estimate certain issues. 6). The results of the survey reflect the responses of parents/guardians who completed the survey and cannot be generalized to all first graders within Oklahoma.

Focus Groups

Focus groups were conducted in the Fall of 2009 and Spring of 2010 to assess what females know, need to know, and how they learn about pregnancy health during their reproductive years. The information gathered in these focus groups will help OSDH programs and partner agencies understand how to provide services and interventions in more culturally appropriate ways. The OSDH and partners collect quantitative data on females of reproductive age using a variety of tools; however, qualitative information, such as how and why females report what they do is largely left unanswered.

The focus groups elicited discussion of health before, during, and after pregnancy for females in Oklahoma, with an emphasis on African American females. Participants were encouraged to discuss how they view health, health care in their community, their relationships, pregnancy health, and infant health. Specific discussion areas included; individual health, preventative health behaviors, health information and advice, relationships, pregnancy and reproductive health, and infant health and caretaking behaviors.

Fourteen focus groups were conducted with a convenience sample of a variety of females at different stages of the reproductive health life cycle (non-parents, parents, and a few grandparents). The majority of the groups were specific to both pregnancy experience (none or one or more) and race/ethnicity. One focus group was held in Spanish. Groups were held in the two major metropolitan areas of Oklahoma: Oklahoma City and Tulsa, and in a rural area. Participants received a tote bag with various items (notepads, books, magnets, and music CDs) inside as an incentive to participate. The groups generally took two hours to administer and were held with females already assembled in a group (women's groups at churches, play groups, student groups, etc.). From these focused discussions, a synopsis was written detailing some of the issues and barriers to health care and education about health issues as perceived by these females in our state. *Components of the needs assessment information addresses: Direct Health Care, Enabling, and Population-based.*

Strengths: 1) The use of focus groups allows the facilitator to solicit in-depth qualitative feedback from individuals that otherwise would not be known. 2) A more complete understanding of the exact nature of the problem and its interaction with other aspects of the health care system can be obtained through focus group and town meeting discussions. 3) Focus group interactions can improve communication and relationships between individuals and local and state representatives.

Weaknesses: 1) Due to convenience sampling through voluntary participation and small group size, results from focus groups are not generalizable to individuals throughout the state as a whole or within the targeted communities. 2) Since participation in the focus groups relied heavily on the recruitment efforts of the OSDH and volunteers, the likelihood of selection bias is high. 3) Qualitative information is difficult and time consuming to condense into a usable format for planning purposes.

Youth Risk Behavior Survey (YRBS)

The YRBS was originally developed by the Division of Adolescent and School Health (DASH), CDC. The survey has been implemented nationally approximately every other year since 1990. The YRBS monitors six categories of priority health-risk behaviors among youth and young adults including: behaviors that contribute to unintentional injuries and violence; tobacco use; alcohol and other drug use; sexual behaviors that contribute to unintended pregnancy and sexually transmitted diseases (STDs), including human immunodeficiency virus (HIV) infection; unhealthy dietary behaviors; and physical inactivity. The YRBS also monitors the prevalence of obesity and asthma. According to the National Center for Health Statistics (2003), the primary causes of death among persons aged 10-24 include: motor vehicle crashes, other unintentional injury, homicide, and suicide. Furthermore, the primary causes of death among adults aged 25 or older (representing nearly two-thirds of all deaths) include cardiovascular disease and cancer. The majority of risk behaviors associated with these two causes of death among adults can often be attributed to behaviors adopted during adolescence. *Component of the needs assessment information addresses: Enabling, Population-based, and Infrastructure Building.*

Strengths: 1) When response rates are sufficient, the data can be weighted to represent all public high school students in the state. 2) YRBS data enables communities to identify specific risks and design intervention programs that target those specific risks. 3) YRBS is administered in every odd numbered year; weighted data are available for each year Oklahoma has participated: 2003, 2005, 2007, and 2009. 4). Indications are that the adolescents who answer the survey are truthful and that internal reliability checks are able to detect erroneous answers. 5). The data can be compared to other states that conduct the YRBS and also to the national survey data.

Weaknesses: 1) Survey questions are predetermined, standard, and closed ended which could result in a failure to identify new and emerging trends and the most important aspects of current problems and issues. 2) Since prevalence of behaviors are self-reported, students may under or over report behaviors, which results in self-report bias. 3) The potential for recall bias exists since students are asked to recall about behaviors or occurrences that took place within various time-frames, such as the past 12 months, the past 7 days, etc. 4) School-based survey methods are not able to reach those who are not attending public school or are receiving home or private instruction. 5) Although the methodology attempts to survey all enrolled students on a particular day, school-based surveys fail to reach students who are ill, truant, missing on the day of the survey, or are schooled in settings other than the public school system.

Behavioral Risk Factor Surveillance Survey (BRFSS)

BRFSS, the world's largest on-going telephone survey, assesses health outcomes and behaviors in the United States (U.S.) and its territories. Information from BRFSS is used to establish and monitor state health objectives, and plan and implement health promotion programs to improve

the health of the American people. The survey has grown in recent years to include the standard core, from which comparisons can be made across states, as well as optional modules and state-specific questions. BRFSS is currently administered and supported by the CDC Division of Behavioral Surveillance, Public Health Surveillance Program Office, in the Office of Epidemiology, Surveillance, and Laboratory Services. Information from the BRFSS can be used to identify health risks to very young adults 18 and 19 years old and young adults ages 20 to 24. Survey topics include health risk behaviors, preventive health practices, and health care access. *Components of the needs assessment information addresses: Enabling, Population-based, and Infrastructure Building.*

Strengths: 1) BRFSS is a national survey with a state sample large enough for comparison with other states and national data. 2) Age graded health behaviors and risk factors can be assessed. 3) Its large sample size has enabled prevalence estimates for selected urban areas having at least 300 respondents, called SMART (Selected Metropolitan/Micropolitan Area Risk Trends) BRFSS. 4) BRFSS is/has incorporated other survey modalities (cell phone, mail, and internet) to reduce potential biases that may exist in utilizing a landline-only survey. 5) Timeliness of the data, with finalized data typically available three months after the end of the survey collection period and provisional quarterly estimates available throughout the data collection period.

Weaknesses: 1) The sample is not large enough to provide local level information for community planning for areas with fewer than 300 respondents. 2) Survey questions are predetermined, standard, and closed ended, which could result in a failure to identify new and emerging trends and the most important aspects of current problems and issues. 3) Administration of the survey still excludes some indigent or transient respondents.

Youth Tobacco Survey (YTS)

YTS was developed by the American Legacy Foundation and the CDC to evaluate tobacco use among middle and high school students nationwide. The survey provides information about Oklahoma teen tobacco use, and knowledge of and attitudes towards tobacco. The survey is representative of all middle and high school students in Oklahoma. The YTS is administered every odd numbered year. Data is available beginning in 1999. *Components of needs assessment information addresses: Enabling, Population-based, and Infrastructure Building.*

Strengths: 1) While other surveys provide information about high school students, this survey obtains information specifically about tobacco use, knowledge, and attitudes among middle school and high school students. 2) The results of the survey are generalizable to the middle and high school population of Oklahoma. 3) The survey has been conducted five times since 1999 (1999, 2002, 2005, 2007, 2009) providing trend data for tobacco use, knowledge, and attitudes of Oklahoma students in grades 6-12. 4) The data can be compared to other states that conduct the YTS and also to the national survey data.

Weaknesses: 1) School-based surveys fail to reach students who are ill, truant, or otherwise missing on the day the instrument was administered. 2) The results do not provide local level information about student tobacco use. 3) School-based surveys only include students who attend school in public school buildings. Teens who may have dropped out, or students who are home schooled, or students in private schools are not included in the sample.

OSDH Injury Surveillance

The OSDH Injury Surveillance was developed in 1987 by the OSDH Injury Prevention Service. By mandate from the State Board of Health, the Injury Prevention Service collects data from hospitals, burn centers, rehabilitation centers, Office of the Chief Medical Examiner, and other government agencies including fire departments, lake patrol, public safety, and law enforcement. Data is collected on four types of hospitalized or fatal injuries: burns; traumatic brain injuries; traumatic spinal cord injuries; and submersions (drowning and near drowning). Other conditions are mandated for time-limited special studies, such as firearm-related injury and fatal occupational-related injuries. *Components of needs assessment information addresses: Enabling, Population-based, and Infrastructure Building.*

Strengths: 1) The surveillance system is active, using documentation from official records. 2) More than 100 variables are collected for each type of reportable injury incident. 3) Multiple sources of information are used to provide an accurate, detailed account of the incident. 4) Emerging types of injury can be mandated for special study. 5) Clusters of injuries can be investigated and appropriate intervention implemented.

Weaknesses: 1) Only injuries that result in hospitalization and death are included in the surveillance. 2) Reporting is related to the accuracy of coding among hospitals. 3) Active surveillance is labor-intensive and expensive.

Public Health Oklahoma Client Information System (PHOCIS)

The PHOCIS was created by the OSDH. The PHOCIS is a centralized database running on a server at OSDH. This system ensures that no client information is stored on any of the computers that run the program. The PHOCIS enables OSDH staff to access real-time client information; when a new client's data is saved for the first time, that information is immediately available to any other site where the client may seek services.

The PHOCIS serves a number of purposes. Before its creation, county health department staff used a number of separate data systems, such as the Women, Infants and Children Supplemental Nutrition Program (WIC), the Oklahoma State Immunization Information System (OSIIS), or Family Planning, to capture and report client or service specific information, often requiring intensive staff time to record and report data. The PHOCIS links separate program data modules in one system that can be accessed easily and allows for more timely and accurate reporting of data. *Components of needs assessment information addresses: Direct Health Care, Enabling, and Population-based.*

Strengths: 1) The PHOCIS captures demographic and service related data on all clients seen at all county health departments (CHDs) and contract agencies. 2) The PHOCIS provides a historical record for each visit of every client. 3) The PHOCIS enables clinicians and analysts to monitor trends in client services and client behaviors (e.g., contraceptive use, pregnancy tests, and childhood immunizations). 4) Data captured in the PHOCIS are utilized in grant applications and trend reports.

Weaknesses: 1) While the PHOCIS captures data on all clients seen by county health departments and OSDH contractors, many clients are seen by providers outside the OSDH

system for other medical reasons. Since those records are not part of the PHOCIS database, a loss of continuity in service is possible. 2) Due to the few CHDs that provide maternity services, the majority of clients seen for family planning who become pregnant receive prenatal care from a provider outside of the OSDH; therefore, the timing of entry into prenatal care and the quality of care they receive are no longer able to be monitored. 3) Data entry errors are possible, requiring cleaning of data before analysis. 4) Training is necessary to pull more than basic reports on data.

National Survey of Children with Special Health Care Needs (NS-CSHCN)

The 2005-2006 NS-CSHCN provides the second and most recent national survey specifically targeting CSHCN. The survey was conducted as part of the State and Local Area Integrated Telephone Survey (SLAITS), which collects national, state, and local area data for the CDC National Center for Health Statistics. The SLAITS relies on telephone interviews of a large random sample of households. Of the 192,083 households screened for CSHCN, 40,840 completed interviews for children with special health care needs, approximately 750-850 interviews per state (Blumberg, S.J., et al, 2005). The interviews gathered information about child demographics, family structure, household income, child health and functional status, health insurance status and coverage, access to health care, and child care coordination (The Child and Adolescent Health Measurement Initiative (CAHMI), 2005-2006). *Components of needs assessment information addresses: Direct Health Care, Enabling, Population-based, and Infrastructure Building.*

Strengths: 1) This is a national survey that allows for statewide data to be compared to national data. 2) The survey methodology has undergone considerable research and is recognized as a reliable resource for information on CSHCN. 3) The survey items have been refined from previous versions of the survey. In addition there is an interest in utilizing the same items over time, to allow for trends or changes over time to be examined.

Weaknesses: 1) The survey is carried out using telephone interviews therefore limiting possible participants to those who can be reached by phone. 2) Some of the items included in the 2001 NS-CSHCN are not included in the 2005-2006 survey, making it difficult to track changes.

National Survey of Children's Health (NSCH)

The 2003 and 2007 NSCH utilizes the same data collection strategy as the NS-CSHCN. Data were collected through the SLAITS utilizing a nationwide random survey of households with one or more children below the age of 18. Telephone surveys were conducted in English and Spanish, resulting in the completion of a total of 102,353 surveys in 2003 and 91,642 surveys in 2007 (The Child and Adolescent Health Measurement Initiative, 2003, 2007). The surveys collected data on all children regardless of special needs status. However, two conditions facilitated the examination of CSHCN specific data. First, both the 2003 and the 2007 NSCH included an item asking about whether the target child needed or used more "medical care, mental health or educational services than is usual for most children of the same age." By selecting children that respondents identified as needing or using more care/services (229 children in Oklahoma for the 2003 NSCH, 199 for the 2007 NSCH), OKDHS was able to look for changes over time and report on children that fall under the broad definition of CSHCN. Secondly, one question was found only in the 2007 NSCH. That question asked whether the

target child was a “child with special health care needs.” This allowed for the examination of data for respondent-identified CSHCN separately, providing access to the most recent CSHCN data. Of the approximately 1800 surveys completed by Oklahoma residents, 440 respondents acknowledged a CSHCN as the target child. *Components of needs assessment information addresses: Direct Health Care, Enabling, Population-based, and Infrastructure Building.*

Strengths: 1) This is a national survey that allows for statewide data to be compared to national data. 2) The survey methodology has undergone considerable research and is recognized as a reliable resource for information on children. 3) The survey items have been refined from previous versions of the survey. There is an interest in utilizing the same items over time to allow for trends or changes to be examined.

Weaknesses: 1) The survey is intended for all children not just CSHCN. One item on the survey asks participants to indicate whether the target child is a “child with special health care needs.” It is highly likely that some parents do not realize that their child would fall under the category of CSHCN.

Sooner SUCCESS Community Needs Assessment (CNA)

The 2007-2008, Sooner SUCCESS CNA relied on paper and web-based survey instruments to gather data. The surveys were distributed to Oklahoma service providers and family members of CSHCN statewide by family advocacy groups, and community and state agencies. The CNA was completed by 1,384 respondents, of which 54% were providers. The survey asked respondents to identify areas of unmet service needs in the community for CSHCN and their families. *Components of needs assessment information addresses: Direct Health Care, Enabling, Population-based, and Infrastructure Building.*

Strengths: 1) Sooner SUCCESS CNA provides access to services information at the community level. This in turn provides data that better reflects the reality of life for CSHCN families in Oklahoma. 2) The survey methodology continues to be refined. 3). Reports thus far indicate it is a reliable source for information on Oklahoma CSHCN.

Weaknesses: 1) Some items included in the survey, e.g., study labs, are not clearly defined. 2) Participant interpretations of items are not clear.

Oklahoma Areawide Services Information System (OASIS)

The OASIS serves as a referral and information source for individuals, families, and providers statewide. The OASIS receives thousands of contacts for assistance each year. Of special interest to this needs assessment were the calls made requesting assistance for children under the age of 21 and their families. Most calls were made regarding the respite voucher program, allowing some data to be collected regarding respite and the families of children with special health care needs. While the children were not always explicitly identified as CSHCN, the need for health care not usually utilized by children of a similar age allows for the classification as CSHCN. *Components of needs assessment information addresses: Direct Health Care, Enabling, and Population-based.*

Strengths: 1) The only way for Oklahomans to access information and applications for the state-run respite voucher program is through the OASIS. The data reflects actual numbers of applications and actual numbers of inquiries regarding respite care. 2) Reports on the numbers of inquiries for respite care are prepared quarterly.

Weaknesses: 1) Publicly accessible data from the OASIS does not make any distinctions regarding the ages of the recipients. As a result there are challenges associated with gathering information regarding which care providers are providing care to children. 2) Applicants to the respite voucher program are not required to report on the types of conditions their care recipients are experiencing. This limits the amount of information available regarding what conditions CSHCN are experiencing or what kinds of other needs CSHCN and their caregivers may have.

Other Data Sources

Further contributions to this report were attained from program and services data from different OSDH programs (e.g., Family Planning Annual Report and The Third Grade Oral Health Survey) and state departments. The Oklahoma Hospital Association database, the Oklahoma Department of Mental Health and Substance Abuse (ODMHSAS), Child Death Review Board Annual Report, and the Fetal and Infant Mortality Review projects provided data via the internet or from annual reports on infant and maternal health issues. The Oklahoma Health Care Authority (OHCA) and provided data on perinatal and infant health care covered by SoonerCare/Medicaid and dental care for children receiving services from the Developmental Disabilities Services Division (DDSD). The OKDHS provided data on children receiving state supplemental payments and data on child abuse and neglect. The Oklahoma State Department of Education (OSDE) provided data on children receiving special education services from their annual performance reports and child counts. Information was also gathered from the 2008 Oklahoma Foster Children Study (Shropshire & Gillaspy, 2009). The study provided data specifically associated with a subset of Oklahoma CSHCN children in foster care. Study details are discussed in greater detail when the study is referenced. Many national data bases were also accessed to obtain needed data, such as: U.S. Census Bureau, Centers for Disease Control and Prevention (CDC), National Health Interview Survey (NHIS), and National Center for Health Statistics (NCHS). *Components of needs assessment information addresses: Direct Health Care, Enabling, Population-based, and Infrastructure Building.*

Strengths: 1) The use of program and services data provides real time information regarding actual use of services as opposed to estimates or extrapolations based on a small sample. 2) Program or services reports tend to gather the same information over time allowing for trends in use to be examined. 3) The foster care study provides information regarding a specific group of CSHCN who are known to have high levels of mental/behavioral health concerns. The inclusion of this study provides mental/behavioral health information regarding a group that would be most knowledgeable about the accessibility of mental/behavioral services to CSHCN.

Weaknesses: 1) Program or services data is available only for those who are receiving the services. Generally those who experience barriers to accessing services are not included. This means that the data may not provide insight regarding the neediest or those who are not receiving services. 2) State departments such as the OHCA and the OKDHS provide services to individuals who meet specific income eligibility requirements. The data provided is limited to

primarily low-income families. The trends in use and access to services may differ across income groups, but data from the OHCA and the OKDHS would not capture the differences.

G. Linkages Between Assessment, Capacity, and Priorities

The linkages between all data sources and capacity were used to establish current priorities. Research and survey development began with MCH, CSHCN, and OFN. Input was received via the online survey. Survey results were shared with the “expert” stakeholder groups, the PATF and CHATF. These results were combined with population and capacity data. The results and data were used to grade issues using a matrix (Appendix C) adapted from the work of Mary Peoples-Sheps to identify the top priorities facing each of the MCH population groups (Peoples-Sheps, 2005). These results were used to guide discussion at each task force meeting to further identify a more manageable list of three to five potential priorities for each of the three MCH population groups. From this list, MCH, CSHCN, and OFN identified the state Title V priorities found on page 194.

H. Dissemination

The Title V Needs Assessment document will be disseminated through existing partnership channels and will be available online at the OSDH website for the public to review and offer comments. This will allow the Title V Needs Assessment document to be accessed by all segments of Oklahoma’s population. The document can be utilized by programs, agencies, families, professionals, legislators, and others interested in reviewing a comprehensive overview of the health and well-being of the MCH population residing in Oklahoma. The range of topics and data provided, in various formats, narrative, tables, and figures allow for diverse audiences with varying levels of experience with data to review and comment on sections they find of interest. A brief anonymous online survey will accompany the needs assessment document posted on the OSDH website to enable feedback related to improving the process and structure of the current and future needs assessments.

I. Strengths and Weakness of Process

A strength of this particular process was its emphasis on family and community involvement via the SurveyMonkey tool and wide reaching efforts to disseminate the community survey in a multitude of ways. Strengths also included the planning process which began eighteen months prior to the actual compilation of the report. Staff also attended several trainings on the Title V Block Grant Needs Assessment provided by the MCHB. Another strength was the utilization of a variety of state data sources such as the newly developed linkage between OHCA and OSDH databases, PRAMS, TOTS, IGHS, YRBS, and YTS. Efforts to include all tribal health groups were maintained throughout the process through involvement of the PATF and CHATF.

One challenge to the needs assessment process was the reduction in staffing during key time periods for data evaluations. MCH lost four employees (Director, two epidemiologists, and the Medicaid linking analyst) during 2008-2009 and due to the economic climate some positions were not renewed. The loss of the former MCH Assessment Director after more than thirty years with MCH resulted in a significant interruption of both knowledge and expertise in the field.

The style of the online survey created an inherent bias due to the anonymous nature of the survey. This created issues with being able to accurately identify that all target entities and populations were represented.

The looming budget crisis in the state created a climate of uncertainty during the needs assessment and priority selection process. Unsure of what funds would be available and where programs might be decreased or eliminated, staff was reluctant to make wide-ranging change as funds may have to be redirected at a future date.

II. Partnership Building and Collaborative Efforts

The Oklahoma Title V Program engages families, consumers, public and private sector organizations, and other stakeholders at the state and community levels in continuous processes to assure the needs of the maternal and child health population are identified and addressed. It is through these partnerships that resources are maximized as needs cannot be met by one entity alone. The Five Year Needs Assessment provides Title V and its partners a specific point in time to assess more closely the health status of the State MCH population, examine the state's strengths and capacity to assure health status, and utilize the information toward assuring the most effective use and alignment of resources to address identified priority needs.

In Oklahoma, the Title V Program is administered by two separate state agencies. The OSDH and the OKDHS share the administration of the Oklahoma Title V Program. Administration of Part A (preventive and primary care services for pregnant women, mothers and infants) and Part B (preventive and primary care services for children) is provided by the OSDH through the Community and Family Health Services, MCH. Part C (services for children with special health care needs) is administered by the OKDHS through the Family Support Services Division, Health Related and Medical Services. The OSDH and the OKDHS collaborate to administer the CSHCN Program through a memorandum of agreement.

Over the past couple of years, the OFN has become a significant partner of the Title V Program. Through monthly meetings and communications via phone and e-mail in the interim, MCH, CSHCN, and OFN work closely together on planning, evaluating, and coordinating activities such as identifying the framework for accomplishment of the Five Year Needs Assessment.

Quarterly conference calls with the Healthy Start projects in Oklahoma provide input into Title V activities and the opportunity to collaborate on the mutual outcome of reducing infant mortality. In addition, quarterly conference calls facilitated by the federal Region VI Office with MCH, CSHCN, OFN and other Oklahoma funded HRSA programs generate engaging discussion and ideas for consideration by Title V.

A very strong relationship exists with the OHCA. Title V is a significant partner with the OHCA in the planning, administration, and evaluation of the Medicaid Family Planning Waiver. With the statewide Title X Family Planning Program being administered by MCH, this also contributes to the ability to look more fully at the health needs of females and males of reproductive age and the state's capacity to address those needs. Title V and the OFN work closely with the OHCA on perinatal and child health issues. This relationship has led to policy and benefits changes occurring in recent years, including increased diagnostic prenatal benefits;

changes in health care services models; coverage of lactation consultation, prenatal social work services, dental services for pregnant women, and specialized formulas for infants and children with special needs; and implementation of quality improvement activities. Through this partnership, the OHCA is also supporting Maternal Mortality Review, Fetal and Infant Mortality Review, and data linkage and analysis.

Another strong relationship is with the OSDE. Through this relationship, activities to improve the health of children and youth are facilitated through joint planning, development of policy, and provision of training and technical assistance to school personnel. A memorandum of agreement between the OSDE and OSDH facilitates this relationship with MCH taking the lead in these activities with the OSDE. In addition, the Chief of MCH and the Executive Director of the OFN are appointed to the Individuals with Disabilities Education Act (IDEA) Part B State Advisory Panel. This panel meets quarterly to review and provide input to the OSDE on IDEA Part B state policy and practice. The Executive Director of the OFN also serves as the co-lead for the Part C Family Advisory Council.

In May 2007, MCH initiated structured activities with other OSDH programs focused on reducing infant mortality. These activities received full support of the Commissioner of Health as an agency priority with the expectation of active participation of OSDH programs and collaboration across OSDH programs. Over the past three years, these initial efforts have expanded to a statewide initiative: “Preparing for a Lifetime, It’s Everyone’s Responsibility”, that is engaging public and private partners at the state, regional, and community levels. Through ten workgroups (Communications/Media, Preconception/Interconception Care and Education, Maternal Infections, Prematurity, Postpartum Depression, Breastfeeding, Tobacco Use Prevention, Infant Safe Sleep, Infant Injury Prevention, and Data), partners are engaged in the assessment of resources/capacity, planning, development of strategic actions steps to impact change, and evaluation of efforts. The energy around the initiative is drawing the interest and involvement of families, businesses, associations, organizations, and agencies.

Partners are also engaged in surveillance projects such as the PRAMS, TOTS, YRBS, and the 1GHS. These data sources are used daily in Title V’s work with partners and also as sources for the needs assessment and the MCH Title V Block Grant. Input was received regarding survey protocol/procedures, effective strategies for data sharing, survey question development, and focus areas for data analysis and report preparation.

Approximately eighteen months ago, in preparation for the needs assessment process, MCH and CSHCN began informing families, state and local MCH programs, other Oklahoma HRSA programs, other OSDH programs, other governmental agencies, local public and private organizations, and stakeholders of the upcoming Five Year Needs Assessment. The OFN was a key partner with MCH and CSHCN in assuring stronger family input in the process. Input was received regarding ideas on data sources and how to gather information from individuals on the health needs of the MCH population. A survey was developed and administered through SurveyMonkey as well as hard copies distributed to gather input on priority needs (Appendix A). An electronic version of the survey was sent out through the OSDH, local Turning Point coalitions, and tribal contacts. It was also shared through the following listservs: the OFN, other family-led support groups for CSHCN, other state agencies, and the PATF and CHATF members

(family representatives; medical, dental and nursing professional organizations; public and private medical providers; social services agencies; March of Dimes; HeadStart; Early Childhood; Healthy Start; Primary Care; Oklahoma State Department of Education; Oklahoma Department of Mental Health and Substance Abuse Services; Oklahoma Institute of Child Advocacy). The survey was posted on the OSDH website for the public to respond. Printed copies in English and Spanish were made available and distributed at meetings, conferences, and through the OFN. Information gained from the survey was posted on the OSDH website for further input and also presented to the PATF and CHATF. Discussions took place over several meetings related to strengths and needs of the MCH population, how information did or did not align with what data demonstrated, selecting priority needs, and examining the capacity to address the needs. For a copy of the presentations see Appendix F. A summary of survey results can be found in Appendix B. The flowchart detailing public, private, and families' involvement in the Needs Assessment process is available in Appendix D.

The strength of Title V's partnerships is evidenced by the information in the Five Year Needs Assessment and Title V MCH Block Grant being used to inform activities of the Oklahoma Health Improvement Plan (OHIP), a comprehensive plan to improve the health of all Oklahomans with involvement from business, labor, legislature, health care providers, tribes, academia, non-profit health organizations, state and local government agencies, professional affiliations, and families. There are three specific focus areas of the OHIP: tobacco use prevention, obesity reduction, and children's health. Within children's health, the focus areas are to improve perinatal and infant health, to accelerate rates in the reduction of infant mortality and morbidity, to develop a comprehensive plan for children's health, and to develop a comprehensive plan for pre-adolescent and adolescent health.

Additionally, the Five Year Needs Assessment and MCH Title V Block Grant are being used in strategic planning currently occurring within the OSDH. Infant mortality is identified as a priority within this planning process where information from the needs assessment and MCH Title V Block Grant is being used to inform OSDH Leadership and programs. An agency business plan is being developed that will provide direction for decision making. An electronic system has been developed to monitor and track key measures identified to impact priorities. The key measures MCH has placed in this system are national outcome and performance measures and state performance measures from the MCH Title V Block Grant.

MCH and CSHCN have worked diligently during this needs assessment process to engage partners, particularly families, more fully throughout the process as this has been a weakness in prior needs assessments. Another weakness from previous assessments has been the underutilization of needs assessment information by partners. This too has been an area of specific focus with input sought from partners on ways to assure the information is more readily accessible for use. The intent is that the Five Year Needs Assessment will provide a base for evaluating progress on identified health priorities and be used by others who make decisions about and/or develop, provide, and evaluate services to Oklahoma's MCH population groups.

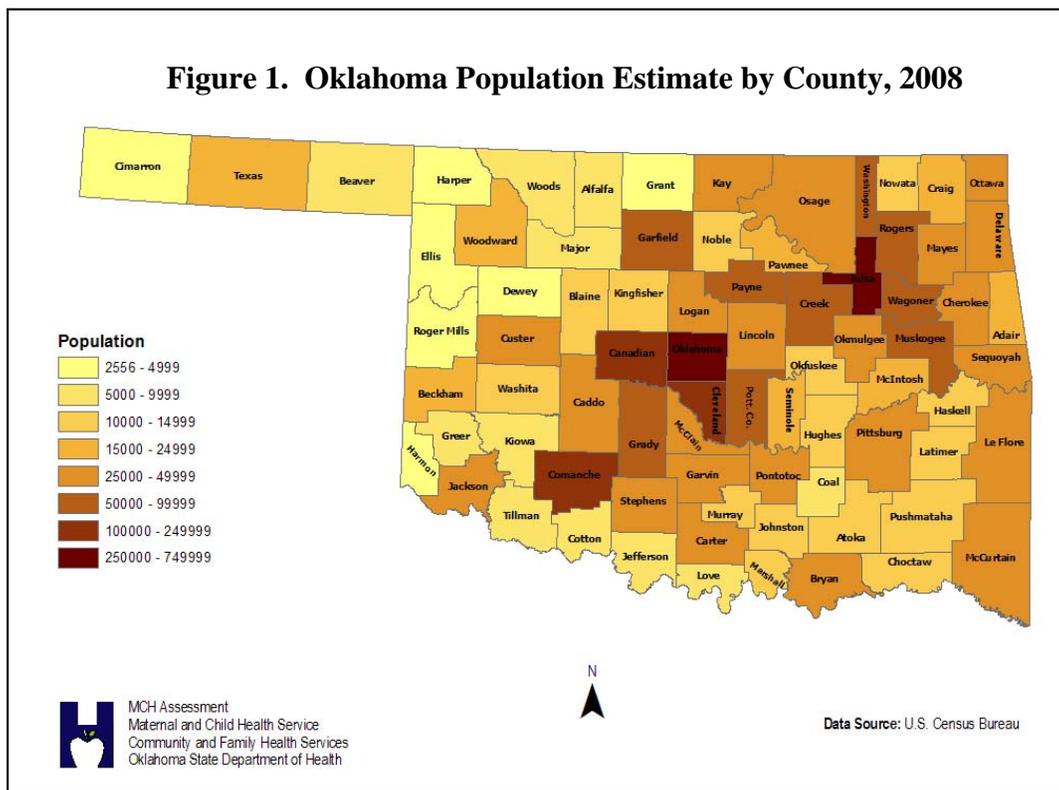
III. Strengths and Needs of the Maternal and Child Health Population Groups and Desired Outcomes

To provide a background from which to better understand the health status of Oklahoma's MCH population, general population characteristics are provided.

Oklahoma Demographics

- **Population**

According to the U.S. Census Bureau, Oklahoma's population was estimated to be 3,642,361 in 2008, yielding a population density of 50.3 persons per square mile. Oklahoma is predominately a rural state; however, nearly two-thirds (61.3%) of the people live in the three metropolitan statistical areas (MSAs) of Oklahoma City, Lawton, and Tulsa (Figure 1). These three MSAs capture 15 of the state's 77 counties.



Although the population grew by nearly 200,000 from 2000-2008, the 5.6% growth rate was 30% less than that of the nation as a whole (Table 1). Of the adjoining states, only Kansas (4.2%) grew at a slower rate than Oklahoma. While Oklahoma City and Tulsa MSAs captured the vast majority of the state's growth, Canadian County, a mostly suburban area, experienced the highest growth rate at 21%. Thirty-two counties experienced a loss in population since 2000.

**Table 1. Annual Estimates of the Population for Oklahoma Counties,
July 1, 2005-July 1, 2008 and U.S. Census, April 1, 2000**

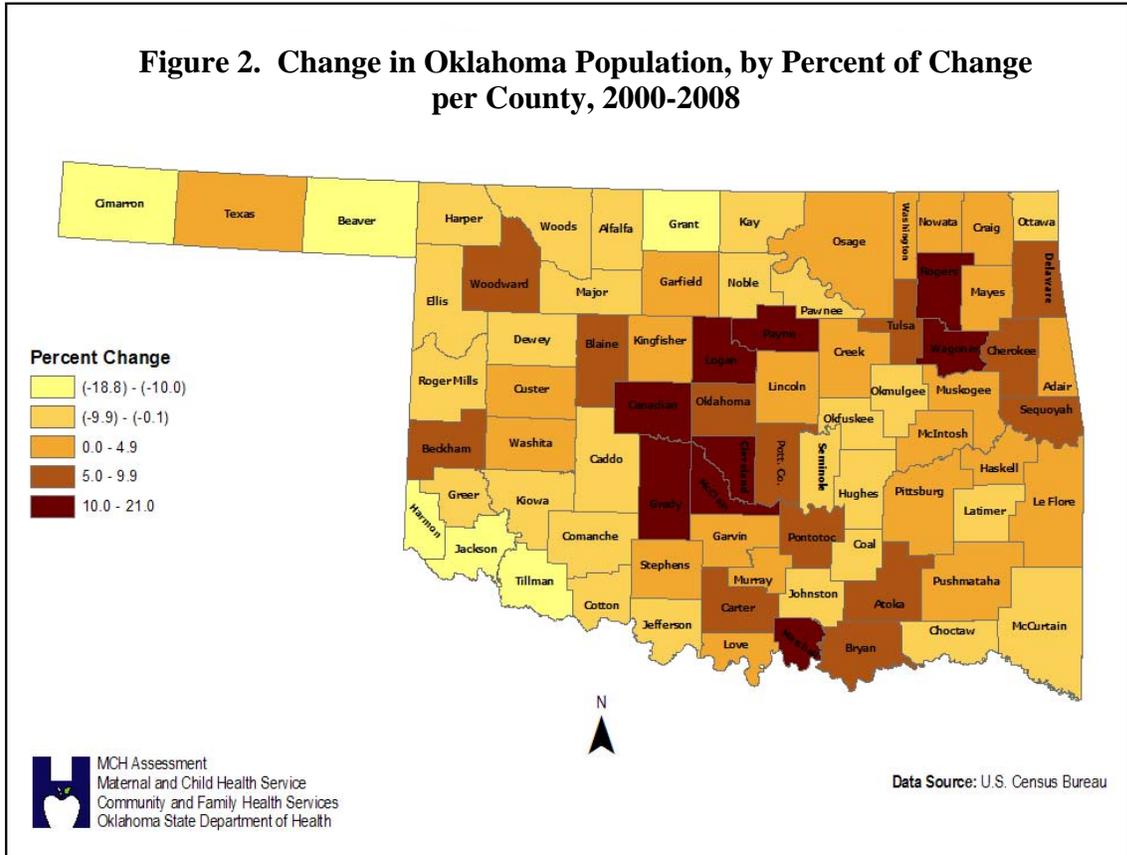
	Population Estimates				U.S. Census	Percent Change	Percent Change
	July 2008	July 2007	July 2006	July 2005	April 2000	2000-2008	Rank
Oklahoma	3,642,361	3,608,123	3,568,132	3,530,087	3,450,654	5.56	-
ADAIR	21,811	21,852	21,828	21,631	21,038	3.67	24
ALFALFA	5,637	5,623	5,625	5,660	6,105	-7.67	69
ATOKA	14,655	14,479	14,320	14,297	13,879	5.59	18
BEAVER	5,248	5,333	5,304	5,402	5,857	-10.40	72
BECKHAM	21,136	20,793	19,311	18,625	19,799	6.75	15
BLAINE	12,659	12,596	12,465	12,736	11,976	5.70	17
BRYAN	40,109	39,298	38,780	37,647	36,534	9.79	10
CADDO	29,024	29,112	29,579	29,668	30,150	-3.73	57
CANADIAN	106,079	103,331	99,956	97,069	87,697	20.96	1
CARTER	47,979	47,484	47,046	46,642	45,621	5.17	21
CHEROKEE	45,733	45,088	44,982	44,415	42,521	7.55	12
CHOCTAW	14,890	14,991	15,089	15,089	15,342	-2.95	56
CIMARRON	2,556	2,630	2,660	2,689	3,148	-18.81	77
CLEVELAND	239,760	235,241	231,848	225,552	208,016	15.26	5
COAL	5,721	5,698	5,606	5,686	6,031	-5.14	61
COMANCHE	111,772	113,931	112,256	111,860	114,996	-2.80	55
COTTON	6,191	6,277	6,343	6,431	6,614	-6.40	65
CRAIG	15,132	15,149	15,012	15,001	14,950	1.22	38
CREEK	69,822	68,940	68,206	68,092	67,367	3.64	26
CUSTER	26,412	26,020	25,805	25,517	26,142	1.03	39
DELAWARE	40,425	40,329	39,692	38,968	37,077	9.03	11
DEWEY	4,389	4,330	4,357	4,402	4,743	-7.46	67
ELLIS	3,971	3,893	3,803	3,872	4,075	-2.55	53
GARFIELD	58,167	57,504	57,199	56,961	57,813	0.61	42
GARVIN	27,247	27,102	26,960	26,874	27,210	0.14	45
GRADY	51,066	50,446	50,037	48,967	45,516	12.19	9
GRANT	4,450	4,485	4,520	4,663	5,144	-13.49	75
GREER	5,713	5,694	5,750	5,802	6,061	-5.74	64
HARMON	2,843	2,831	2,901	2,937	3,283	-13.40	74
HARPER	3,290	3,240	3,286	3,263	3,562	-7.64	68
HASKELL	12,152	12,041	12,027	11,958	11,792	3.05	28
HUGHES	13,625	13,576	13,635	13,722	14,154	-3.74	58
JACKSON	25,236	25,686	26,194	26,443	28,439	-11.26	73
JEFFERSON	6,219	6,246	6,318	6,376	6,818	-8.79	71
JOHNSTON	10,286	10,402	10,367	10,215	10,513	-2.16	51
KAY	45,632	45,711	45,616	46,042	48,080	-5.09	60

**Table 1. (Cont'd) Annual Estimates of the Population for Oklahoma Counties,
July 1, 2005-July 1, 2008 and U.S. Census, April 1, 2000**

	Population Estimates				U.S. Census	Percent Change	Percent Change
	July 2008	July 2007	July 2006	July 2005	April 2000	2000-2008	Rank
Oklahoma	3,642,361	3,608,123	3,568,132	3,530,087	3,450,654	5.56	-
KINGFISHER	14,300	14,304	14,093	14,067	13,926	2.69	30
KIOWA	9,399	9,428	9,590	9,777	10,227	-8.10	70
LATIMER	10,561	10,427	10,466	10,472	10,692	-1.23	48
LE FLORE	49,802	49,510	49,120	48,806	48,109	3.52	27
LINCOLN	32,153	32,211	32,240	32,006	32,080	0.23	44
LOGAN	38,102	37,123	35,763	35,406	33,924	12.32	8
LOVE	9,155	9,096	9,068	9,034	8,831	3.67	25
MCCLAIN	32,365	31,779	30,771	29,892	27,740	16.67	4
MCCURTAIN	33,532	33,409	33,446	33,460	34,402	-2.53	52
MCINTOSH	19,698	19,650	19,450	19,396	19,456	1.24	37
MAJOR	7,112	7,167	7,173	7,177	7,545	-5.74	63
MARSHALL	14,919	14,766	14,528	14,336	13,184	13.16	7
MAYES	39,912	39,588	39,269	39,024	38,369	4.02	23
MURRAY	12,784	12,661	12,720	12,580	12,623	1.28	36
MUSKOGEE	71,278	71,012	70,611	70,211	69,451	2.63	32
NOBLE	11,169	11,100	11,074	11,119	11,411	-2.12	50
NOWATA	10,729	10,688	10,623	10,627	10,569	1.51	35
OKFUSKEE	11,172	11,197	11,212	11,274	11,814	-5.43	62
OKLAHOMA	706,617	699,027	692,677	685,595	660,448	6.99	14
OKMULGEE	39,219	39,344	39,119	39,332	39,685	-1.17	47
OSAGE	45,489	45,433	45,047	44,940	44,437	2.37	33
OTTAWA	31,849	32,325	32,797	32,480	33,194	-4.05	59
PAWNEE	16,307	16,421	16,427	16,473	16,612	-1.84	49
PAYNE	78,280	77,724	77,281	75,042	68,190	14.80	6
PITTSBURG	45,115	44,636	44,328	43,940	43,953	2.64	31
PONTOTOC	36,999	36,512	35,762	35,461	35,143	5.28	20
POTTAWATOMIE	69,616	69,226	68,163	67,723	65,521	6.25	16
PUSHMATAHA	11,710	11,640	11,495	11,474	11,667	0.37	43
ROGER MILLS	3,404	3,296	3,255	3,260	3,436	-0.93	46
ROGERS	84,300	82,931	81,212	79,614	70,641	19.34	3
SEMINOLE	24,200	24,103	24,135	24,127	24,894	-2.79	54
SEQUOYAH	41,034	40,926	40,686	40,242	38,972	5.29	19
STEPHENS	43,498	43,255	42,764	42,560	43,182	0.73	41
TEXAS	20,283	19,890	19,850	19,829	20,107	0.88	40
TILLMAN	7,899	8,117	8,249	8,347	9,287	-14.95	76
TULSA	591,982	584,141	576,166	569,407	563,299	5.09	22
WAGONER	68,960	67,135	65,008	63,141	57,491	19.95	2
WASHINGTON	50,452	49,770	48,899	48,598	48,996	2.97	29
WASHITA	11,709	11,651	11,450	11,257	11,508	1.75	34
WOODS	8,422	8,448	8,383	8,543	9,089	-7.34	66
WOODWARD	19,838	19,674	19,079	18,864	18,486	7.31	13

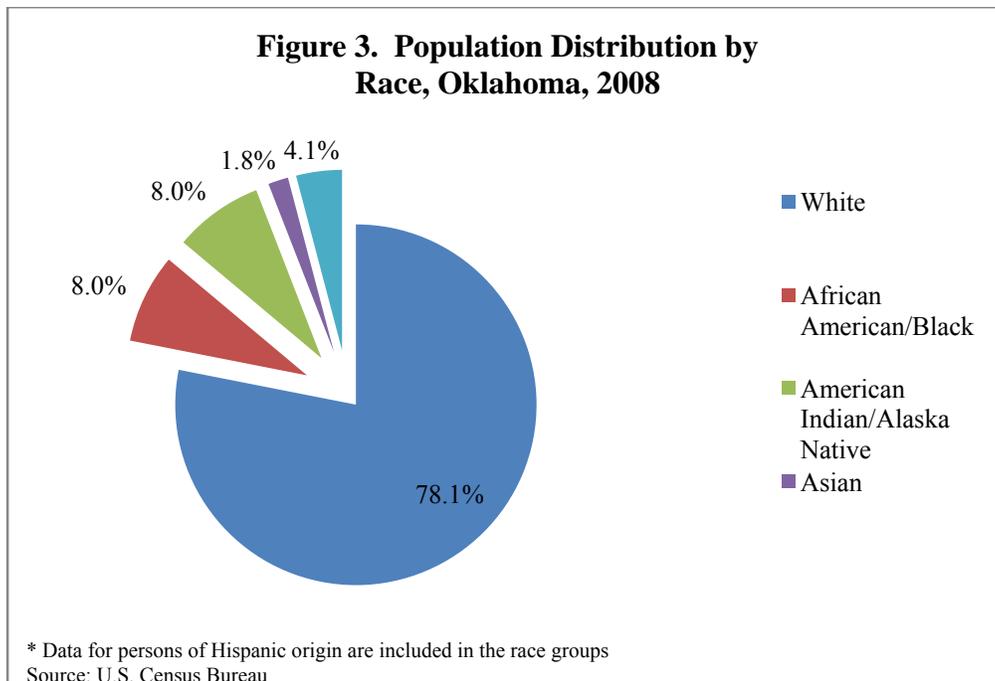
Source: U.S. Census Bureau

Other counties in the central region of the state had net growth, but the numerical population change for those counties was not large (Figure 2). Eighteen counties have populations below 10,000, and seven of those are below 5,000 in total population. Only five counties outside of the three metro areas have populations exceeding 50,000.

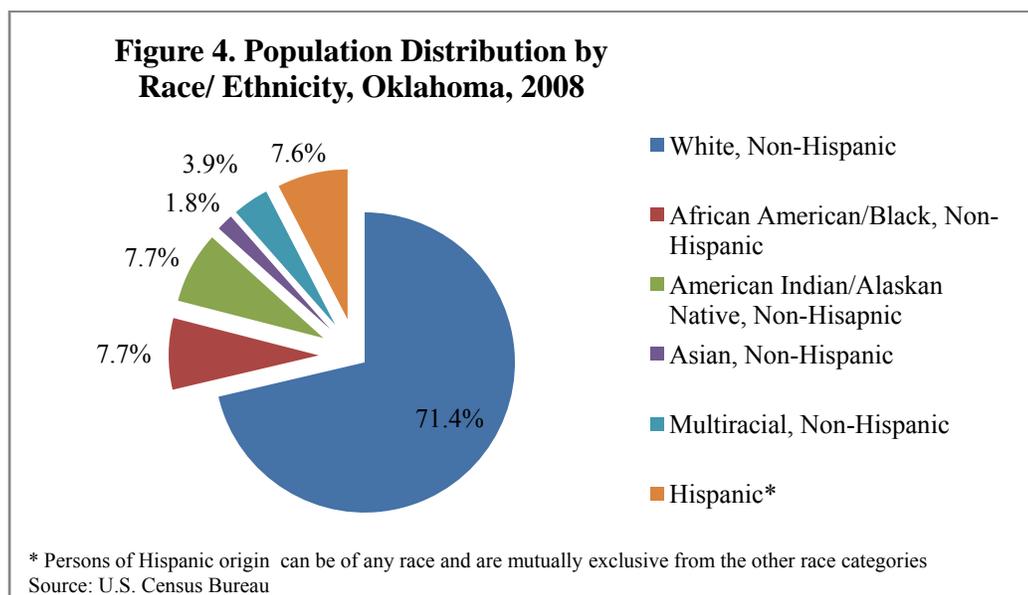


- **Race and Ethnicity**

Unlike previous decennial census estimates where individuals had to select a primary race, the 2000 Census gave individuals the option to select more than one race. Slightly more than three-fourths (78.1%) of the population was identified as white only for the 2008 annual census population estimate (Figure 3). Using the one race only classification, the two largest minority groups in the state are American Indian/Alaska Native and African American/Black, both at 8.0%. Asian/Pacific Islanders comprise 1.8% of the population while those with two or more races selected comprise 4.1% of the population.

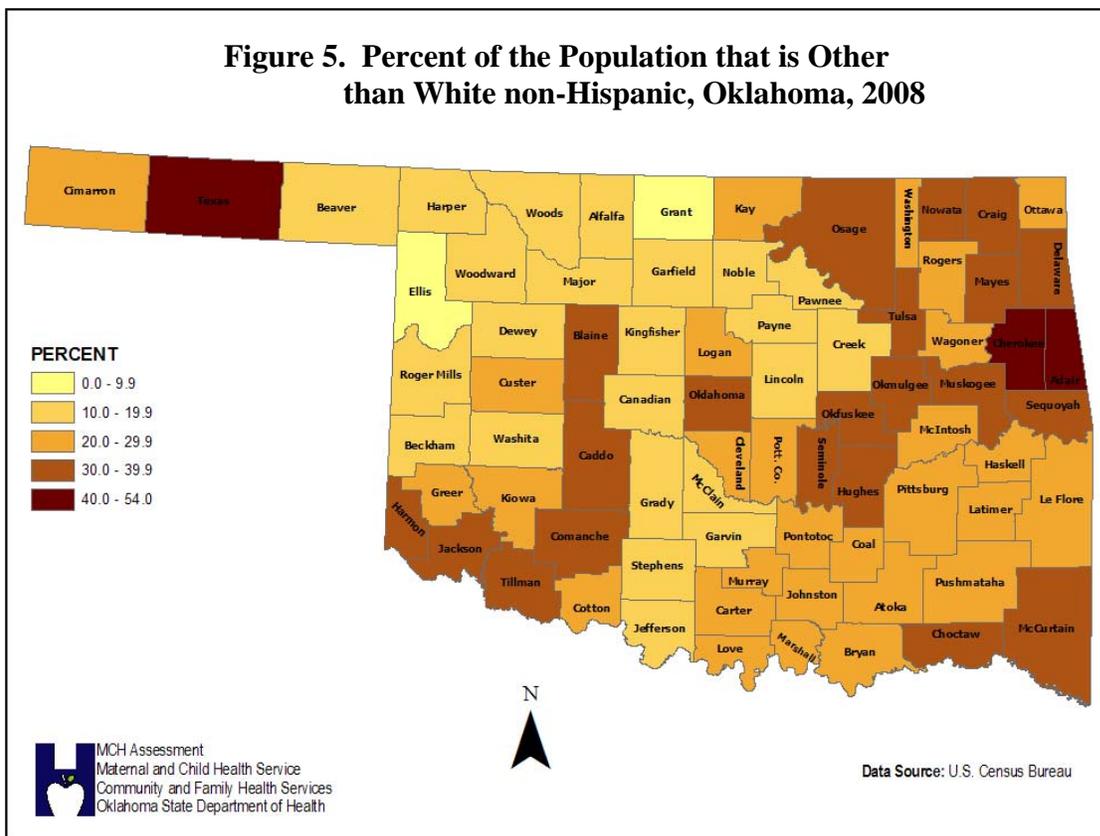


The vast majority of persons of Hispanic origin are of the white race classification; however, due to the differences among racial and ethnic groups in culture, access to health care, and other important health indicators, persons of Hispanic origin are often presented as a separate and mutually exclusive racial/ethnic group. Using this classification, non-Hispanic whites make up less than three-fourths of the population at 71.4%, followed by American Indian/Alaska Native and African American/Black at 7.7% each (Figure 4). The growth of the Hispanic population in Oklahoma over the past ten years has been significant as Hispanics (of any race) were the third largest minority population in the state at 7.6% and, at their current growth rate, will be the second largest minority population in a matter of years.



Assessing trends among other minority populations is more difficult due to the multi-race coding implemented in 2000. For example, when comparing race alone or in combination, 11.2% of the population selected American Indian/Alaska Native in the 2008 population estimates, making American Indian/Alaska Native the largest minority group in Oklahoma (data not shown). This percentage is much more consistent with the two previous national decennial census reports, than the 7.7%, because the majority of individuals reporting two or more races selected American Indian/Alaska Native in addition to another race.

Like many other states in the union the percent of the population that is non-white (including Hispanics) is increasing. The presence of culturally diverse populations impacts many public health issues such as access to health care, the quality of care received, eligibility for public programs, and the need for culturally appropriate products and services. Only two Oklahoma counties, Ellis and Grant, have less than 10% of their population comprised of non-whites. Fifty-one counties in Oklahoma have between 10% and 29.9% of their population comprised of non-whites. The remaining 24 counties have more than 30% of their population comprised of non-whites with three of those counties, Texas, Cherokee, and Adair with non-white populations of 45.7%, 46.1%, and 53.6%, respectively (Figure 5).



- **Age**

There were a total of 1,275,951 children ages 0-24 in 2008 representing 35% of the state's population (Table 2). The number of females of reproductive age (ages 15-44) was 722,027 representing 19.8% of the overall population and 39.2% of the state's female population. Payne

County, which has the largest proportion of children, also has the largest proportion of females of reproductive age at 43.1% and 24.3%, respectively. Conversely, Alfalfa County has the smallest proportion of children and smallest proportion of females of childbearing age at 24.5% and 13.1%, respectively. While neither county lies within any of the three MSA's in Oklahoma, Payne County has a population of nearly 80,000 and houses a major university in Stillwater. Children ages 0-24 make up at least one-third of the population in thirty-eight counties in Oklahoma.

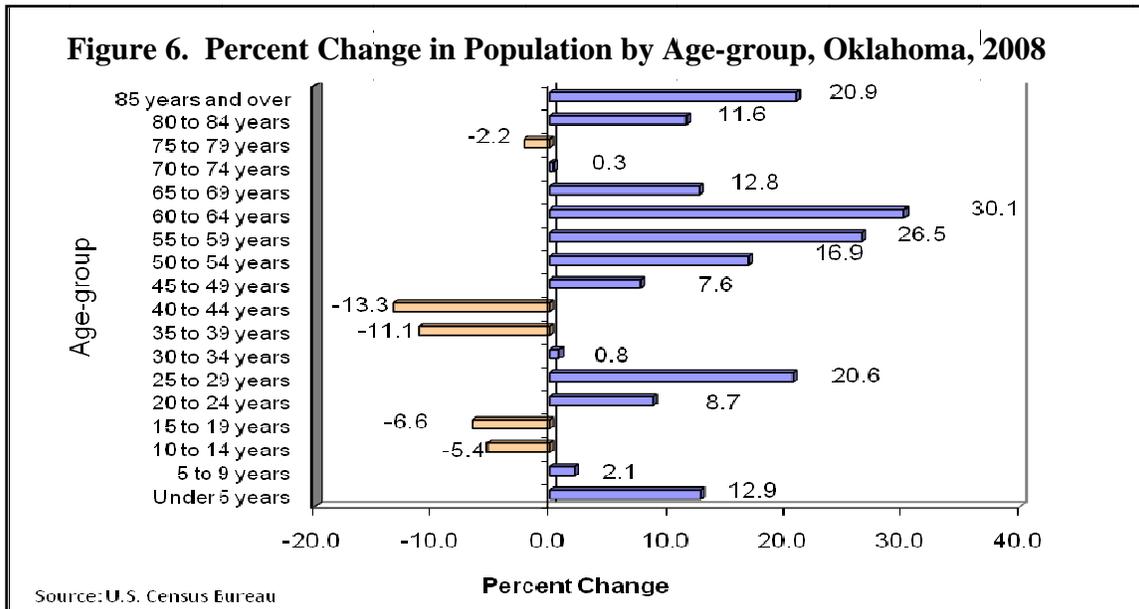
Table 2. Population of Children and Females of Childbearing Age, Oklahoma, 2008

	Total Population	Children 5 and Under	Children Ages 5-13	Children Ages 14-17	Children Ages 18-24	Females Age 15-44
Oklahoma	3,642,361	266,547	438,926	200,562	369,916	722,027
ADAIR	21,811	1,867	2,983	1,497	1,980	4,415
ALFALFA	5,637	243	426	218	494	739
ATOKA	14,655	852	1,583	771	1,314	2,535
BEAVER	5,248	355	584	355	420	890
BECKHAM	21,136	1,691	2,480	1,094	2,080	3,822
BLAINE	12,659	784	1,146	626	1,449	1,745
BRYAN	40,109	2,831	4,756	2,196	4,553	8,219
CADDO	29,024	2,003	3,560	2,003	2,807	5,457
CANADIAN	106,079	7,602	12,992	6,144	10,486	21,743
CARTER	47,979	3,434	5,897	2,738	3,722	9,079
CHEROKEE	45,733	3,159	5,466	2,530	6,842	10,076
CHOCTAW	14,890	1,093	1,770	818	1,288	2,784
CIMARRON	2,556	132	272	146	239	406
CLEVELAND	239,760	14,741	26,554	12,259	35,202	54,697
COAL	5,721	352	692	364	500	1,059
COMANCHE	111,772	9,279	15,112	6,878	14,732	21,559
COTTON	6,191	370	756	408	494	1,162
CRAIG	15,132	918	1,628	773	1,246	2,652
CREEK	69,822	4,488	8,209	4,162	5,965	13,243
CUSTER	26,412	1,995	2,820	1,241	4,502	5,733
DELAWARE	40,425	2,351	4,470	2,241	3,152	7,329
DEWEY	4,389	294	438	214	370	682
ELLIS	3,971	273	390	179	266	558
GARFIELD	58,167	4,661	6,959	3,115	4,626	10,691
GARVIN	27,247	1,860	3,201	1,423	2,091	5,042
GRADY	51,066	3,461	6,270	2,855	4,997	10,621
GRANT	4,450	210	417	277	392	731
GREER	5,713	324	513	241	639	838
HARMON	2,843	194	294	183	255	474
HARPER	3,290	241	321	157	278	505
HASKELL	12,152	845	1,506	711	1,006	2,288
HUGHES	13,625	864	1,460	731	1,189	2,206
JACKSON	25,236	2,078	3,578	1,646	2,509	4,891

Table 2. (Cont'd) Population of Children and Females of Childbearing Age, Oklahoma, 2008						
	Total Population	Children 5 and Under	Children Ages 5-13	Children Ages 14-17	Children Ages 18-24	Females Age 15-44
Oklahoma	3,642,361	266,547	438,926	200,562	369,916	722,027
JEFFERSON	6,219	416	678	356	486	1,074
JOHNSTON	10,286	766	1,162	590	1,062	1,922
KAY	45,632	3,391	5,538	2,692	4,044	8,045
KINGFISHER	14,300	1,003	1,646	825	1,254	2,646
KIOWA	9,399	548	989	509	810	1,481
LATIMER	10,561	579	1,223	637	1,316	2,236
LE FLORE	49,802	3,675	6,084	2,817	4,361	9,391
LINCOLN	32,153	2,032	3,705	2,034	2,699	6,050
LOGAN	38,102	2,444	4,311	2,166	4,952	8,157
LOVE	9,155	612	1,021	537	752	1,607
MCCLAIN	32,365	2,273	3,957	1,715	3,087	6,367
MCCURTAIN	33,532	2,382	4,231	2,060	2,845	6,531
MCINTOSH	19,698	1,113	2,095	981	1,590	3,513
MAJOR	7,112	443	713	373	581	1,210
MARSHALL	14,919	1,083	1,719	796	1,178	2,694
MAYES	39,912	2,770	4,773	2,345	3,242	7,574
MURRAY	12,784	832	1,454	647	1,011	2,412
MUSKOGEE	71,278	5,050	8,445	3,841	6,257	13,689
NOBLE	11,169	705	1,268	627	910	1,944
NOWATA	10,729	633	1,239	633	911	1,968
OKFUSKEE	11,172	696	1,176	571	975	1,897
OKLAHOMA	706,617	59,672	89,634	36,943	65,655	142,188
OKMULGEE	39,219	2,696	4,654	2,268	3,903	7,467
OSAGE	45,489	2,371	4,988	2,677	4,155	8,477
OTTAWA	31,849	2,150	3,642	1,895	3,024	5,947
PAWNEE	16,307	1,016	1,804	1,003	1,386	2,967
PAYNE	78,280	4,537	7,198	3,083	18,913	19,035
PITTSBURG	45,115	2,815	4,706	2,376	3,926	7,762
PONTOTOC	36,999	2,641	4,237	1,961	4,580	7,628
POTTAWATOMIE	69,616	4,673	8,247	3,920	7,666	14,788
PUSHMATAHA	11,710	746	1,279	653	1,034	2,181
ROGER MILLS	3,404	262	369	159	294	521
ROGERS	84,300	5,193	10,528	5,126	7,668	17,556
SEMINOLE	24,200	1,754	2,899	1,343	2,253	4,557
SEQUOYAH	41,034	2,773	5,156	2,428	3,385	7,970
STEPHENS	43,498	2,898	5,021	2,287	3,677	7,758
TEXAS	20,283	1,923	2,914	1,171	2,248	3,975
TILLMAN	7,899	530	877	548	629	1,309
TULSA	591,982	48,035	75,303	32,723	53,773	117,583
WAGONER	68,960	4,589	8,872	4,189	6,394	14,546
WASHINGTON	50,452	3,180	5,403	2,841	4,475	9,266
WASHITA	11,709	868	1,284	630	1,057	2,139
WOODS	8,422	451	718	379	1,526	1,608
WOODWARD	19,838	1,483	2,263	1,013	1,887	3,520

Source: U.S. Census Bureau

While persons 0-44 years of age make up more than three-fifths (61.3%) of the state's population, those 45 years and older saw the greatest percent increase from 2000 to 2008, with the greatest increase observed among 60-64 year olds at 30.1%, 55-59 year olds at 26.5%, and 85 years and older at 20.9% (Figure 6). There was also substantial growth for the under five age-group at 12.9% and the 25-29 year age-group at 20.6%.



- **Economy**

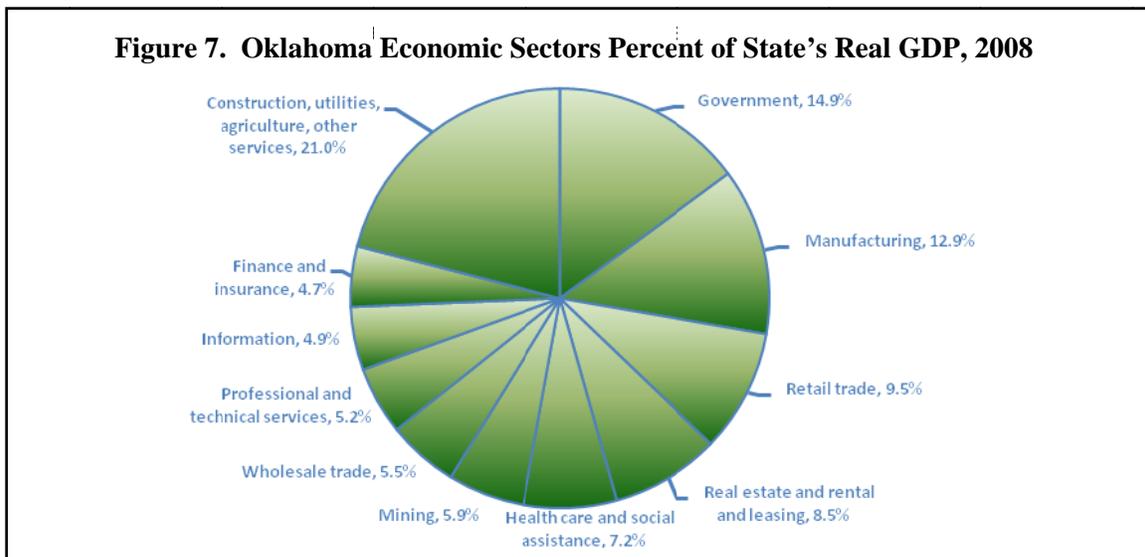
Oklahoma supports a diverse and growing economy, with a Real Gross Domestic Product (GDP) of over \$106 billion in inflation adjusted dollars in 2008, an increase of 2.7% from 2007 (Oklahoma State Department of Commerce, 2008). Nearly 15% of the State's economy is claimed by the government sector, followed by manufacturing (12.9%), retail trade (9.5%), real estate (8.5%), health care (7.2%), and mining (5.9%), according to the Oklahoma State Department of Commerce, 2008 (Figure 7). The agriculture, mining, and manufacturing sectors have remained the backbone of Oklahoma's economy, consistently making up 20-21% of the State GDP during 1998-2008. Meanwhile, the construction and retail sectors have waned relative to other economic sectors, declining from 4.1% and 9.4% in 1998 to 2.9% and 8.6% in 2008, respectively. In addition, the sector employing federal, state, and local government workers has seen a reduction from 16.9% in 1998 to 15.1% in 2008. Contrast this with the booming retail trade, health care, and professional, scientific, and information technology sectors, which have increased their slice of Oklahoma's economic pie by 23%, 11%, and 41%, respectively, over the past eleven years (Figures 8a and 8b). Gaming (lotteries and casinos) has become a major contributor to the state's economy; Oklahoma is now the second largest state for gaming revenue from American Indian gaming facilities behind California. Oklahoma was one of two states nationwide that made the largest contribution to American Indian gaming growth, and is considered a large revenue-generating state that continues to grow (Gaming News, 2009).

The state and federal government, public universities, aircraft, and retail sectors are all major employers in Oklahoma. The top six employers in Oklahoma in 2008 were the State of

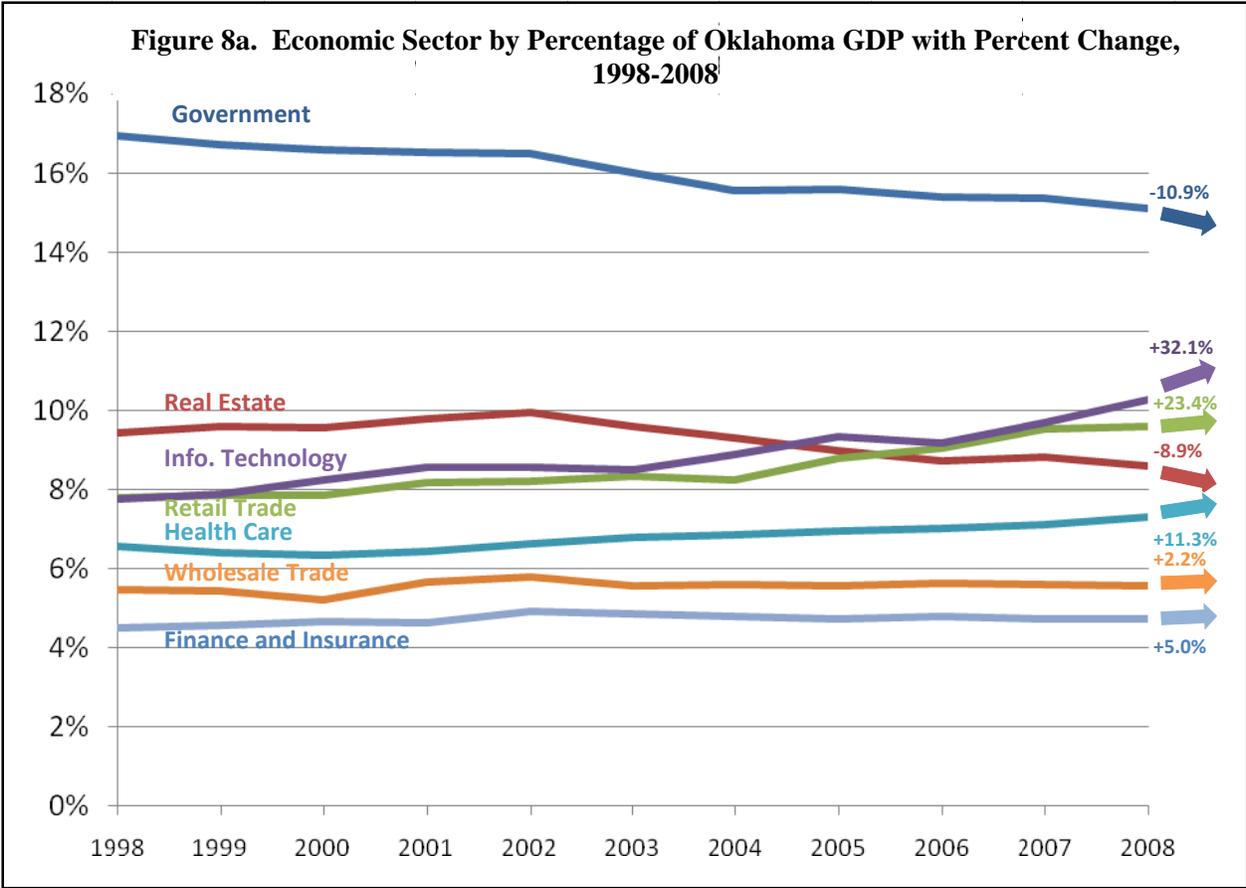
Oklahoma (36,000-37,000); Wal-Mart and Sam’s Club (29,000-33,000); Tinker Air Force Base, the U.S. Army Field Artillery Center at Fort Sill (47,400-48,400); the U.S. Postal Service (16,500); University of Oklahoma in Norman and Oklahoma State University in Stillwater (24,000-25,000); and American Airlines and American Airlines Maintenance and Engineering Center in Tulsa (7,000-7,500).

Nearly all of the Fortune 500 companies form an integral part of Oklahoma’s economy. Exxon Mobil, Chevron, ConocoPhillips, and Halliburton Energy Services have maintained a steady presence in the State, collectively employing nearly 6,000 Oklahoma residents, a testament to Oklahoma’s vast oil and natural gas deposits. IBM employs some 1,200-1,400 Oklahomans in its Tulsa offices, while Sprint-Nextel employs nearly 1,000 people in Oklahoma City.

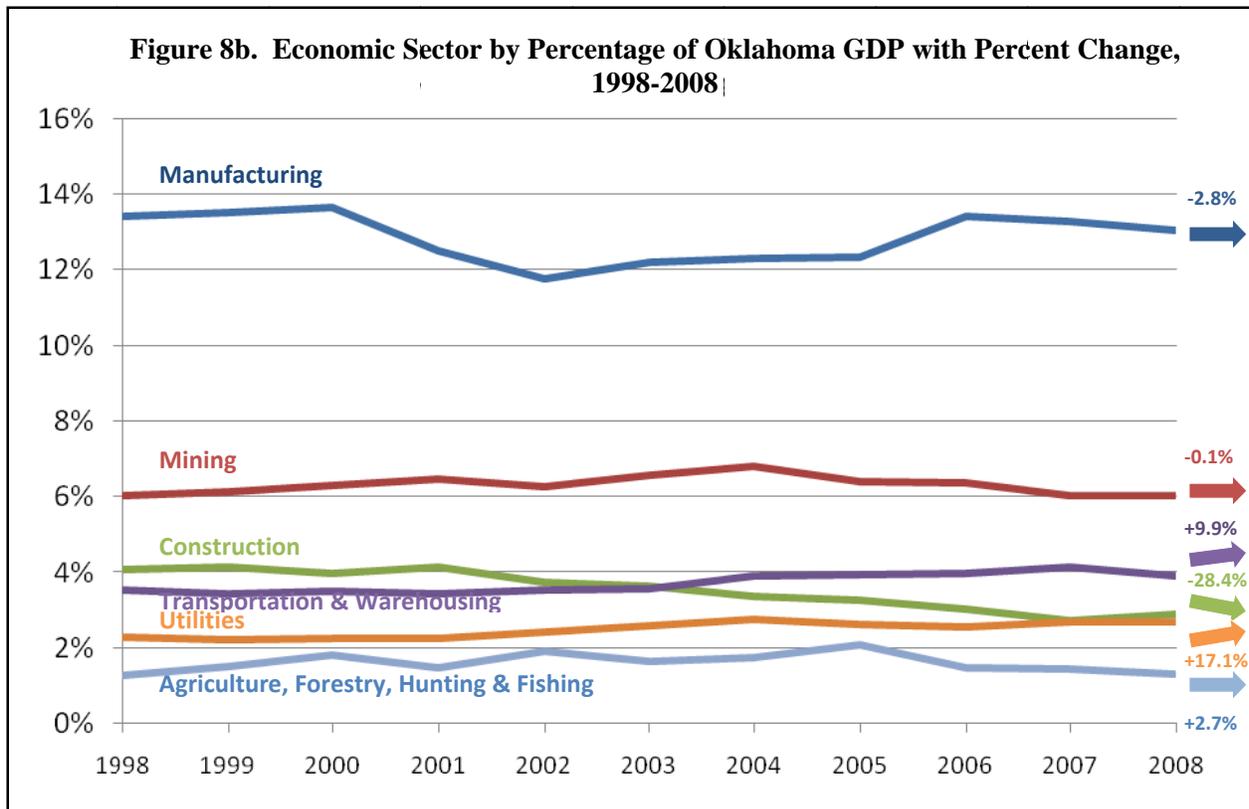
In addition to the aforementioned businesses, Oklahoma’s green economy has seen a surge in the past ten years. Oklahoma boasts ideal real estate for wind-powered energy in the open expanses of the western counties. As of December 2009, there were 557 turbines generating nearly 700 megawatts of wind power in Oklahoma, and 132 turbines currently under construction. The Oklahoma Wind Power Initiative expects Oklahoma to be the second-largest generator of wind power in the nation by 2030.



Source: Oklahoma State Department of Commerce, 2008



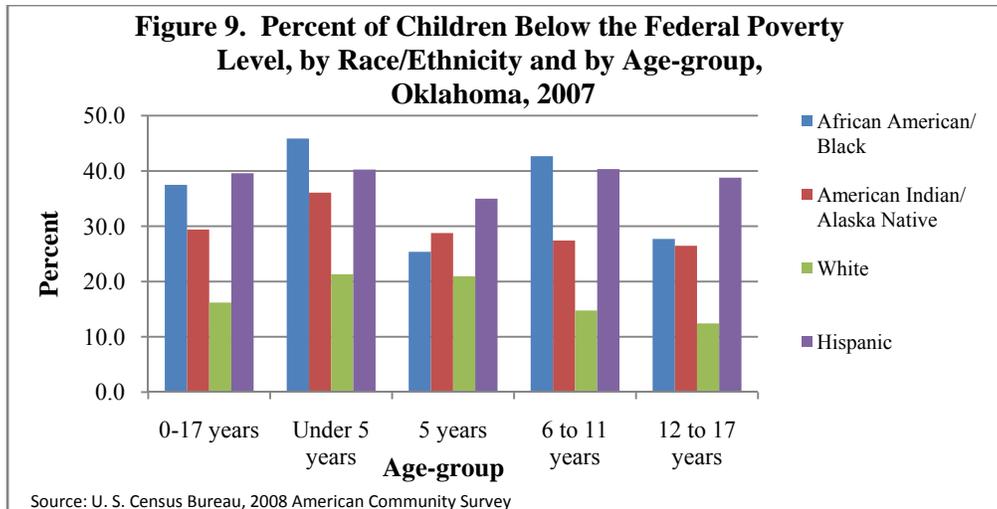
Source: Oklahoma State Department of Commerce, 2008



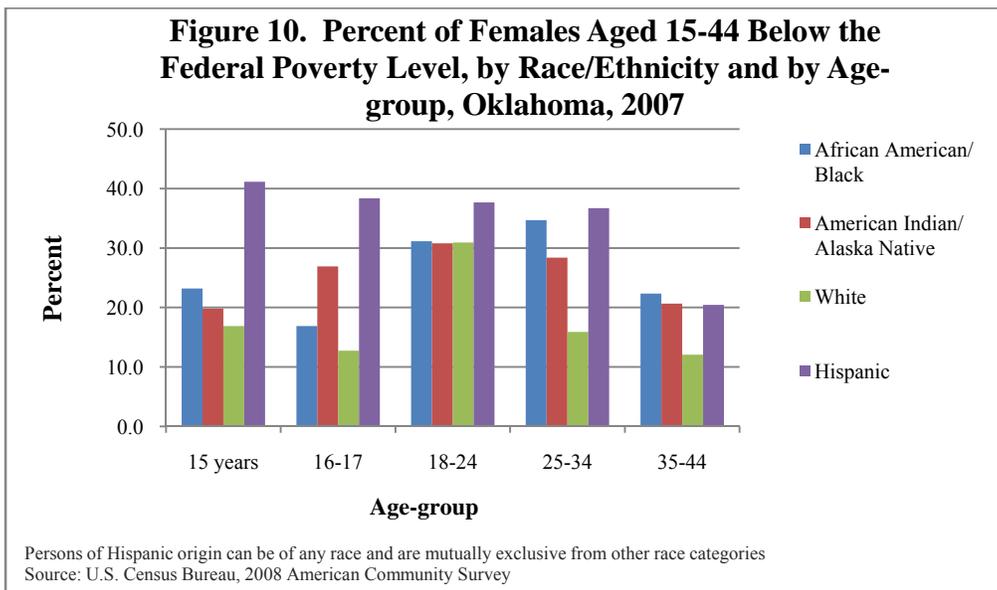
Source: Oklahoma State Department of Commerce, 2008

The recent financial crisis in the banking and housing industries has had a devastating toll on the nation. Oklahoma, however, experienced the effects of the current recession later than many other states with issues of state revenue failures beginning late state fiscal year (SFY) 2009 and carrying forward through present SFY 2010. Oklahoma also has a relatively low unemployment rate, 6.6% as of April 2010, giving it a ranking of 6th lowest in the nation, according to the Department of Labor and Statistics. However, Oklahoma is still a poor state economically. The two-year average annual household income for the state was \$41,578 from 2006-2007. This figure is 16.7% lower than the national average of \$49,901 with only four other states reporting lower household incomes.

Data from the 2008 American Community Survey show that the percent of persons below poverty was 21% higher in Oklahoma compared to the national average, at 15.8% and 13.0%, respectively. Poverty was not uniformly distributed among age groups or racial and ethnic groups. On average a higher proportion of Hispanic and African American/Black children were below the poverty level, followed by American Indian/Alaska Native then whites (Figure 9). Except for Hispanics ages 6-11 years, children under 5 years of age for all racial groups had the highest proportion below the poverty level. Almost one-half (45%) of African American/Black children under the age of five were living in poverty in Oklahoma. This rate was 2.6 times that of the white, non-Hispanic children in the same age group. Hispanic and American Indian/Alaska Native children fared only slightly better than African American/Black in this age group (Oklahoma State Department of Commerce, 2008).



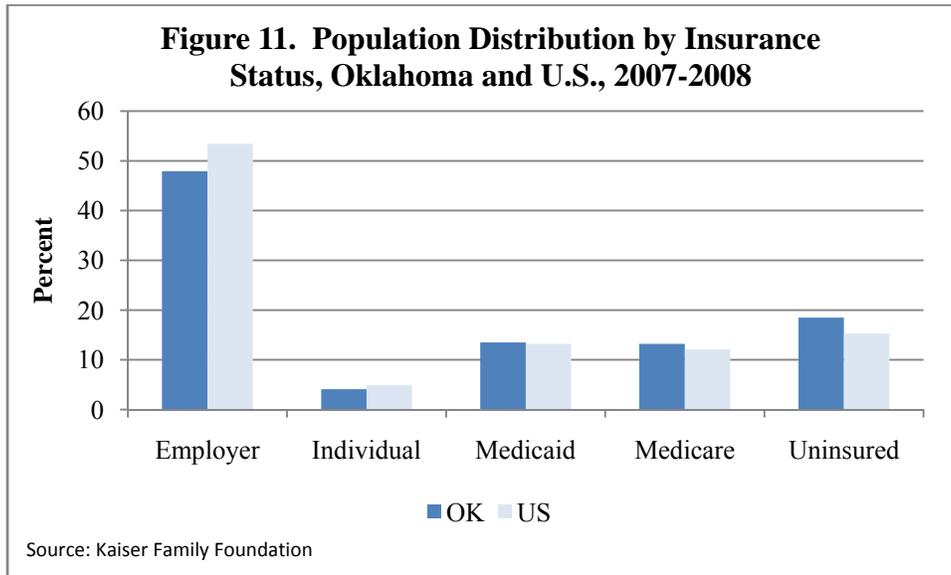
Among females of childbearing age (15-44), poverty was again not uniformly distributed by race/ethnicity or by age (Figure 10). Females most likely to live in poverty were those in the 18-24 year old age group. Two potential contributors to this age group's higher rate could be the establishment of new households apart from their families of origin as well as a greater likelihood of attending school which tends to decrease the possibility of full-time employment.



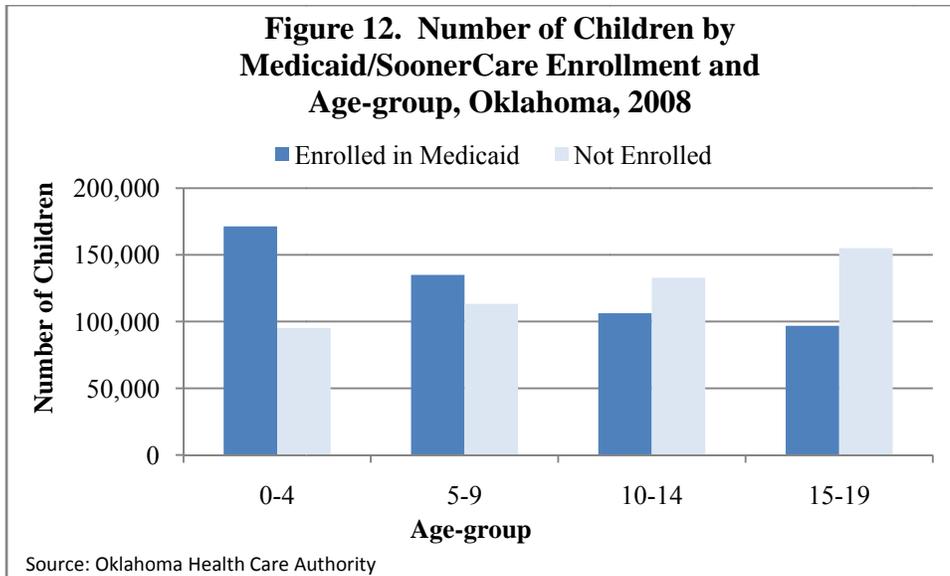
- **Insurance coverage**

According to the Kaiser Family Foundation, nearly one in five Oklahomans (18.5%) were uninsured in the 2006-2007 period; this compares to 15.3% for the national rate for 2007 (Figure 11). Of children 18 years and under, 13.3% were uninsured compared to 11.3% nationally. Employer sponsored insurance covers an estimated 47.9% of Oklahomans compared to 53.4% for the national average. Medicaid and Medicare cover 13.5% and 13.2% of Oklahomans,

respectively, both slightly higher than the national average. Only 4.1% of Oklahomans are covered through individual plans (Kaiser Family Foundation, 2007).

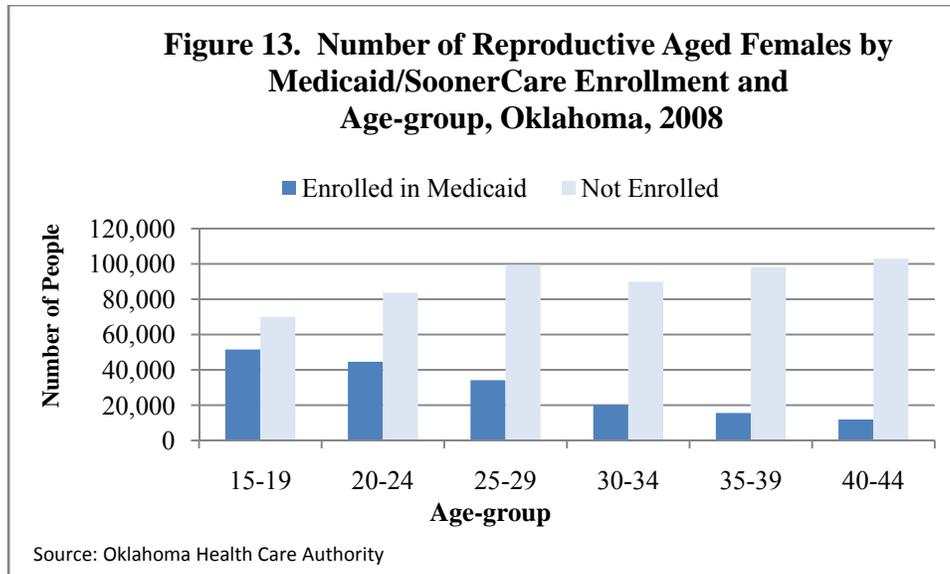


The OHCA is the state agency responsible for overseeing the Medicaid program in Oklahoma. The Medicaid Program in Oklahoma is known as SoonerCare and will subsequently be referred to as such throughout the remainder of the Title V Needs Assessment. SoonerCare shows that 509,354 children and adolescents ages 0-19 were enrolled to receive SoonerCare services in 2008 (Figure 12). This represents 50.6% of the estimated 1,005,750 individuals aged 0-19 in the state; however, it does not include those individuals who are potentially eligible but have not been certified to receive assistance. Sixty-four percent of children aged 0-4 were enrolled in SoonerCare. Children up to age 18 qualify for SoonerCare with family incomes up to 185% of the Federal Poverty Level (FPL). Individuals aged 18-20 qualify with incomes up to 100% of the FPL. Oklahoma has utilized the State Children’s Health Insurance Program (SCHIP) to expand SoonerCare eligibility up to 185% for all children up to age 18.



Among females of childbearing age, 177,920 were enrolled in SoonerCare in 2008 (Figure 13). This represented 24.6% of the estimated 722,027 women ages 15-44. Similar to the SoonerCare enrollment numbers for children, the proportion of enrollment for women 15-44 declined with each increase in age-group. SoonerCare eligibility required a non-pregnant woman to be roughly at 37% of the FPL in order to qualify for SoonerCare eligibility. Pregnant females qualified up to 185% of the FPL. However; prior to 2008, women who were non-citizens were ineligible, irrespective of income. As a result, this group of mothers represented a major portion of the uncompensated prenatal care provided in Oklahoma. In 2008, 42.4% of females age 15-19 were enrolled in SoonerCare. During the same time period, SoonerCare enrollment of women age 40-44 was 10.3%

In April 2008, Oklahoma implemented “Soon-To-Be-Sooners” to provide limited benefits for pregnancy-related care for females who are non-citizens. Unfortunately, dental care was not a covered service for this program. Although benefits for the mother end at delivery, this program provides prenatal care and related services for mothers who may not otherwise receive care due to their undocumented status.



A. Pregnant Women, Mothers and Infants

1. Women/Mothers

Access to Care

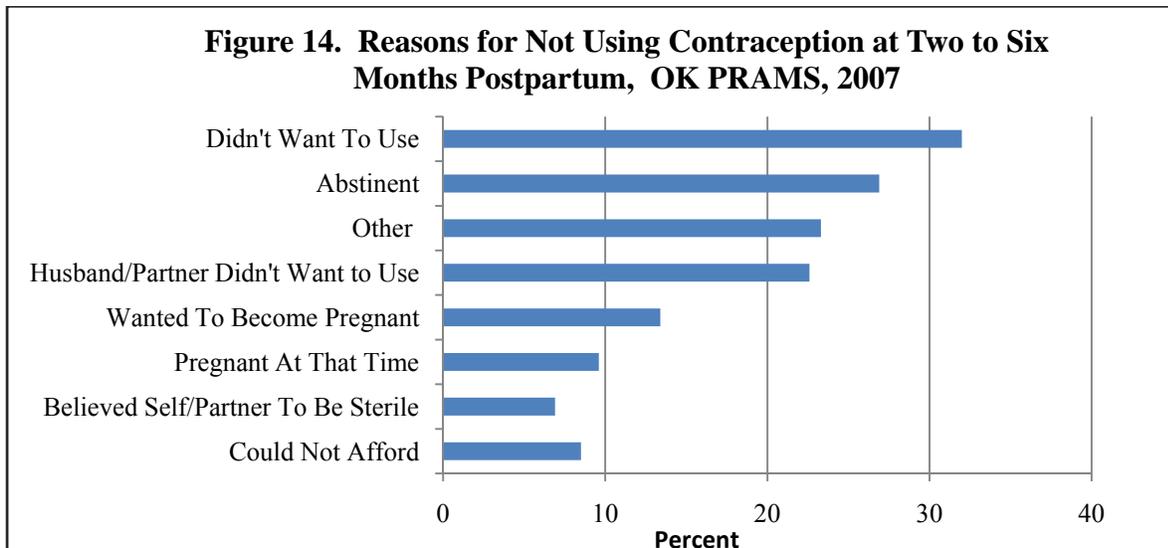
According to 2007 OK PRAMS data, 47.1% of females had non-SoonerCare health insurance prior to their most recent pregnancy resulting in a live birth. This has declined since 2000, when 56.2% of females indicated non-SoonerCare health insurance before pregnancy. American Indian/Alaska Native females were the least likely to have insurance prior to pregnancy (26.5%), compared to 42.7% of African American/Black females and 50.8% of white females. In 2000, 34.5% of American Indian/Alaska Native females, 50.8% of African American/Black females and 59.5% of white females had non-SoonerCare coverage.

Data from the 2008 BRFSS indicate that over one-fourth (26.7%) of females aged 18-44 needed a doctor during the previous year, but the cost was too high. Of those females who reported that they needed a doctor, but the cost was too high, 75.2% reported they were in excellent, very good, or good health compared to 92.2% of those females for whom cost was not a barrier. In addition, over one-fourth (26.7%) of females aged 18-44 did not have any health care coverage. Of those females who reported to have some form of health care coverage, 91.2% stated they were in excellent, very good, or good health compared to 82.2% of those with no health care coverage.

African American/Black females were more likely to report SoonerCare coverage prior to pregnancy than other females (22.3% vs. 8.9% white and 10.7% American Indian/Alaska Native). The number of females reporting SoonerCare coverage prior to pregnancy has not changed significantly since 2000.

One important aspect for females of childbearing age is planning for pregnancy, and using preventative measures to delay an unwanted or mistimed pregnancy until the female and her partner are ready. Contraceptives and other methods of birth control play an important role in delaying unplanned pregnancies for many females.

In 2007, 87.1% of females with a recent live birth delivery indicated they were using some method of birth control from two to six months postpartum. This has not significantly changed since 2000. Among females not using a current method of birth control, the majority stated it was because they did not want to use birth control (32.0%). The least common response was “I don’t think I can get pregnant (sterile)” at 6.9% (Figure 14). Almost one in four females not using birth control postpartum in Oklahoma were either pregnant or wanting to become pregnant, again two to six months postpartum. Of those females who had recently lost their baby, this number increased to 69%.



- **Reproductive Health**

- **Women in Need of Contraceptive Services and Supplies**

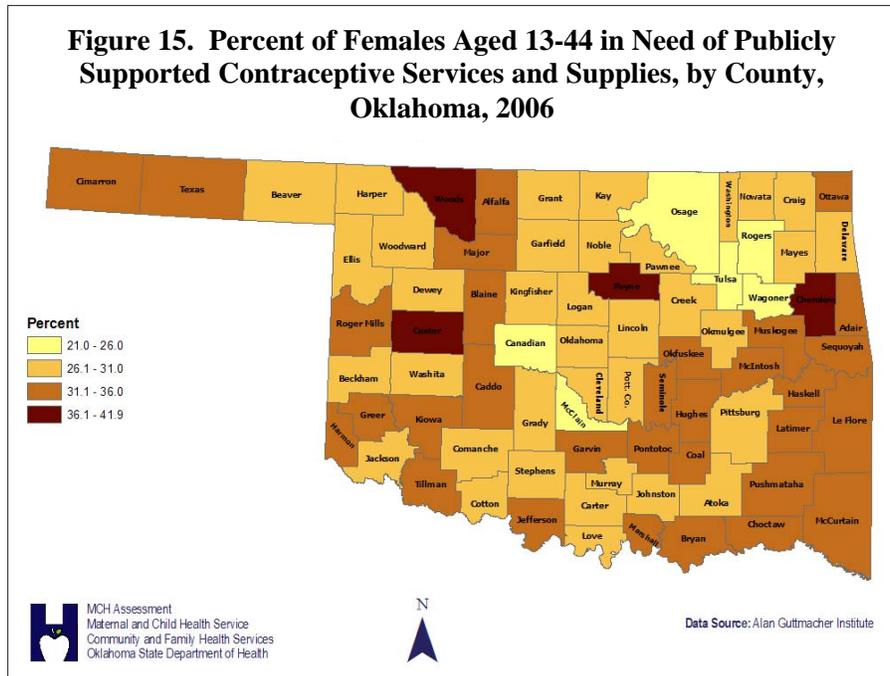
As defined by the Alan Guttmacher Institute (AGI), females are “in need of contraceptive services and supplies” during a given year if they are age 13-44 and meet the following criteria:

- a. They are sexually active, meaning, they have ever had intercourse;
- b. They are fecund, meaning that neither they nor their partner have been contraceptively sterilized, and they do not believe that they are infecund for any other reason; and,
- c. During at least part of the year, they are neither intentionally pregnant nor trying to become pregnant. (Guttmacher Institute, 2009-2010)

Additionally, females are defined as in need of publicly funded contraceptive services and supplies if they meet the above criteria and have a family income under 250% of the FPL. Due to either their personal incomes meeting this level or because of their heightened need of confidentiality, all females less than 20 years of age who need contraceptive services are assumed to be in need of publicly supported care.

In 2006, estimates for Oklahoma indicated that more than half (52.4%) of females age 13-44 were in need of contraceptive services and supplies, a 9.6% increase from 2002. Of those

females in need of contraceptive services and supplies in 2006, more than half (54.7%, n=221,210) were in need of publicly supported contraceptive services and supplies. Figure 15 shows the percent of females aged 13-44 who were in need of publicly supported contraceptive services and supplies by county. Seventy-one of 77 counties indicate that more than 26% of their female population aged 13-44 was in need of publicly supported contraceptive supplies. The four counties with the highest percentage of females in need of publicly supported contraceptive services and supplies were Cherokee, Custer, Woods, and Payne at 36.4%, 37.3%, 37.4%, and 41.9%, respectively.



When assessing females in need by race, minor differences were observed. The percent of white and African American females aged 13-44 in need of contraceptive services and supplies were 46.4% and 48.1%, respectively (data not shown). More than half (50.4%) of females of Hispanic origin were in need of contraceptive services and supplies. Of the 404,670 females in need, 38.3% were 30-44 years of age, 46.9% were 20-29 years of age, 8.3% were 18-19 years of age, and 6.5% were 18 and under. Of those females aged 20-44 in need of contraceptive services and supplies, 53.2% were at or above 250% of the FPL, 13.0% were between 185-249% of the FPL, and 33.8% were below 185% FPL.

o **Family Planning**

The Title X Family Planning Program was enacted in 1970 as Title X of the Public Health Service Act. Title X is the only federal grant program dedicated solely to providing individuals with comprehensive family planning and related preventive health services. Family planning is a service offered to males and females of reproductive age to assist them in making informed decisions about pregnancy planning, appropriate spacing of births, prevention of unintended pregnancy, being healthy, and making good lifestyle choices. The Oklahoma Family Planning Program (OFPP) is offered at 90 county health department service sites and 10 contractor sites. The OFPP provides family planning services in 70 of the 77 counties in Oklahoma. In 2008, the

OFPP served 75,623 family planning clients. Estimates indicated between 26,000 and 27,000 additional family planning clients were served by other providers in the state.

- **Oral Health**

BRFSS data for 2008, indicate that 39.7% of females aged 18-44 did not have a dental visit within the past twelve months.

Table 3. Receipt of a Dental Visit at Least One Year Prior to Pregnancy by Maternal Demographics, OK PRAMS, 2006-2007				
Maternal Characteristics	Yes		No	
	Prevalence (%)	95%CI	Prevalence (%)	95%CI
Race				
White	39.74	36.89, 42.66	60.26	57.34, 63.11
African American/Black	36.67	28.33, 45.91	63.33	54.09, 71.67
American Indian/Alaska Native	33.96	26.92, 41.80	66.04	58.20, 73.08
Other	42.43	22.27, 65.47	57.57	34.53, 77.73
Ethnicity				
Non-Hispanic	41.85	39.14, 44.61	58.15	55.39, 60.86
Hispanic	16.37	11.46, 22.83	83.63	77.17, 88.54
Age				
<20	40.77	33.28, 48.72	59.23	51.28, 66.72
20-24	30.93	26.76, 35.44	69.07	64.56, 73.24
25-29	36.51	32.07, 41.18	63.49	58.82, 67.93
30-34	50.34	44.33, 56.33	49.66	43.67, 55.67
35+	49.13	40.81, 57.49	50.87	42.51, 59.19
Education				
<High School	13.00	5.94, 26.13	87.00	73.87, 94.06
High School	21.18	15.11, 28.86	78.82	71.14, 84.89
>High School	42.64	39.84, 45.50	57.36	54.50, 60.16
Marital Status				
Married	45.09	41.90, 48.33	54.91	51.67, 58.10
Other	29.09	25.25, 33.27	70.91	66.73, 74.75
Medicaid				
Yes	28.52	25.46, 31.80	71.48	68.20, 74.54
No	54.01	50.04, 57.94	45.99	42.06, 49.96
Previous Live Birth				
Yes	35.74	32.61, 38.99	64.26	61.01, 67.39
No	42.93	38.83, 47.14	57.07	52.86, 61.17

Oral health can impact the health of a pregnancy and infant. Preterm birth has been linked in research studies to gum disease. Routine dental care has the potential to prevent and reduce that risk (Offenbacher, et al., 2006). However, only 40% of females saw a dentist during the 12 months before pregnancy in Oklahoma (Table 3). No differences existed between racial groups; however, Hispanic females (16.4%) were far less likely to have dental care prior to pregnancy than non-Hispanic females (41.9%). Females over the age of 30 were more likely to have had a

dental visit prior to pregnancy compared to females ages 20-29. Having a high school education or less was also associated with lack of dental care. Only one in five females (21.1%) with a high school education and one in eight females (13.0%) with less than a high school education received a dental checkup or visit, compared to almost half of females with more than a high school education (42.6%). Marital status, SoonerCare status during pregnancy, and parity also impacted the likelihood of getting dental care prior to pregnancy.

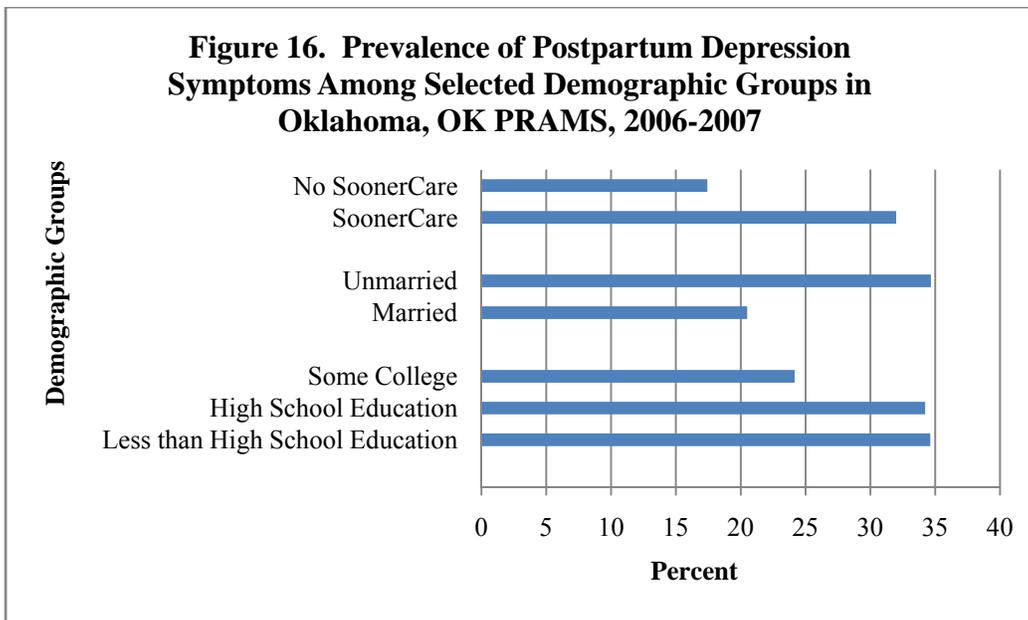
- **Mental Health**

BRFFS data for 2008, showed that nearly half (44.6%) of females aged 18-44 in Oklahoma experienced poor mental health within the last month of pregnancy. More specifically, 30.9% reported to have had 15 or less mentally unhealthy days, while 13.7% reported to have had more than 15 mentally unhealthy days in the last month.

Postpartum depression (PPD) can be disabling for a new mother. PPD is a moderate to severe level of depression that a females experiences after giving birth. The symptoms of PPD may occur at any time after delivery up to one year postpartum; however, most new mothers experiencing PPD, will show symptoms within the first four weeks after delivery. PPD has the potential to negatively impact a mother's health and her ability to care and nurture her infant (Horwitz, Briggs-Gowan, Storfer-Isser, & Carter, 2007). Data from OK PRAMS 2006-2007, showed that approximately one in four Oklahoma mothers suffered from key symptoms of postpartum depression between two and six months postpartum. The presence of maternal depression symptoms after delivery was assessed by asking "In the months after your delivery did you ever feel sad or hopeless almost every day for at least 2 weeks in a row that you stopped doing some usual activities?" Several demographic groups in Oklahoma were at an elevated risk for reporting symptoms of PPD (Figure 16). These included mothers under the age of 20 (34.4%), mothers with a high school education (34.2%) or less (34.6%), unmarried mothers (34.7%) and mothers with SoonerCare coverage (32.0%).

This finding was reinforced by other reports that have found high rates of mental illness in Oklahoma. According to the Oklahoma Governor's and Attorney General's Blue Ribbon Task Force, Oklahoma has the highest rate of severe mental illness in the nation at 10.4% (Oklahoma Governor's and Attorney General's Blue Ribbon Task Force: Mental Health, Substance Abuse and Domestic Violence., 2006).

Figure 16. Prevalence of Postpartum Depression Symptoms Among Selected Demographic Groups in Oklahoma, OK PRAMS, 2006-2007



Physical Activity

Physical activity, which aids in weight maintenance and reduction, is an important part of overall health and well-being for women across the lifespan. However, many women in Oklahoma do not meet the recommended Healthy People 2010 guidelines of 30 minutes of moderate activity five or more days per week or 20 minutes of vigorous activity three or more days a week (U.S. Department of Health and Human Services, 2000). Physical activity levels for women of reproductive age are measured by BRFSS. In Oklahoma, females of childbearing age were more likely to meet the Healthy People 2010 objectives for physical activity if they were aged 18-24, almost 60% of women in this age group reported participating in the recommended levels for moderate or vigorous activities in a usual week. The women in the older reproductive age group, those 35-44, were least likely (45.6%) to participate at recommended levels (data not shown).

Multivitamin Consumption

Consumption of folic acid, prior to pregnancy is important for the prevention of certain birth defects, such as neural tube defects, and may positively impact other areas of health and wellness for females. Because a female may be pregnant several weeks before she is aware of the pregnancy, particularly if the pregnancy is unintended, folic acid supplement consumption is recommended for all females of child-bearing age who may become pregnant (March of Dimes, 2010). Although state data are not available on how many females consume folic acid supplements prior to and during pregnancy, OK PRAMS does collect information on the consumption of a multivitamin or prenatal vitamin prior to pregnancy, most of which are fortified with the recommended 400 mcg of folic acid.

OK PRAMS 2007 data show that only 27.3% of pre-pregnant females consumed a multivitamin prior to pregnancy. No differences were found between females of different racial or ethnic groups; however, age and education were significantly associated with preconception vitamin use (Table 4). The association with age and education may be artifacts of pregnancy planning, as females who were older and had higher levels of education were also more likely to have been

trying to get pregnant, a factor significantly associated with increased consumption of a multivitamin prior to pregnancy. Among females trying to get pregnant, 43.8% took a vitamin prior to pregnancy. For those females not trying to get pregnant (but who had a live birth) only 16.4% consumed a multivitamin preconceptionally. Parity was also not found to be significant.

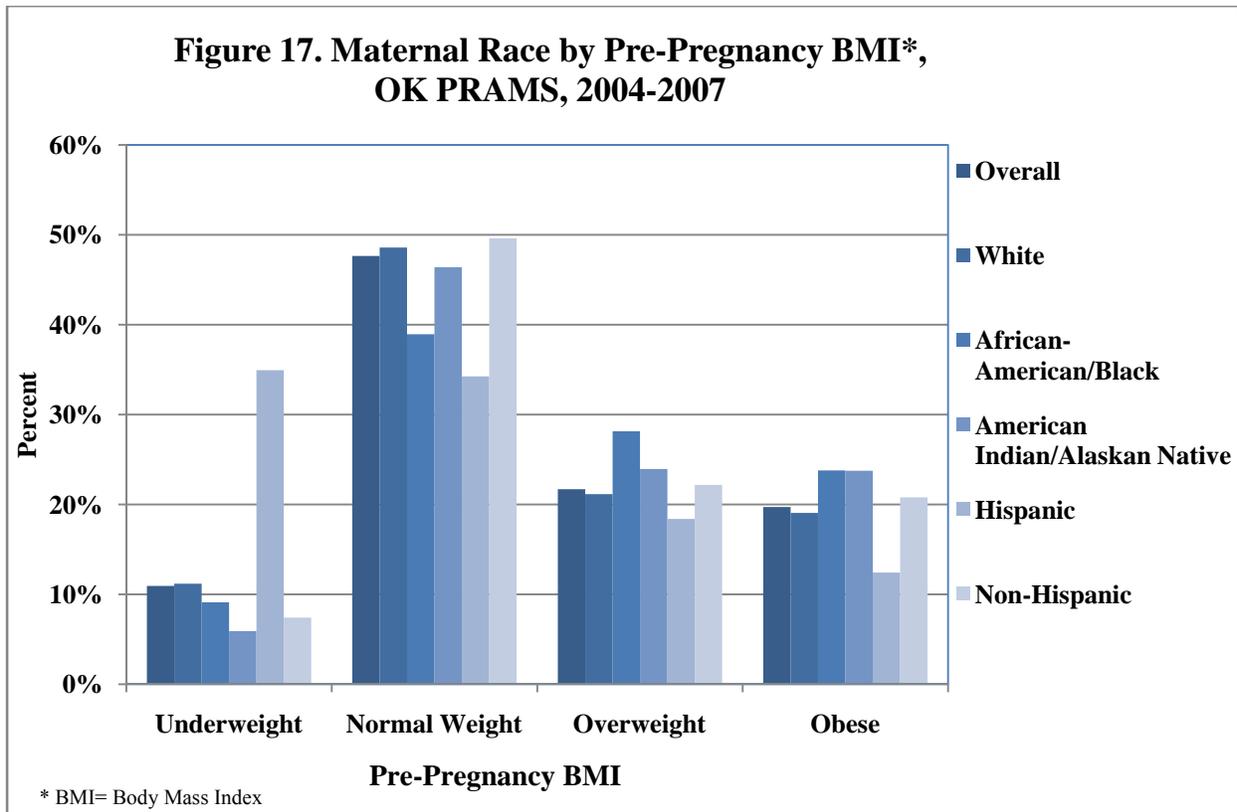
Table 4. Percent of Females Regularly Consuming Multivitamins Preconceptionally by Maternal Demographics, OK PRAMS, 2007		
Characteristic	Consumed Multivitamin	
	%	95% CI
Age		
< 20	9.4	4.8-17.8
20-24	18.2	13.6-23.8
25-34	35.9	30.9-41.2
35 or older	45.6	33.9-57.8
Race		
White	28.2	24.6-32.1
Black	19.3	10.6-32.4
AI/AN	22.3	14.5-32.8
Ethnicity		
Hispanic	26.1	16.9-37.9
Non-Hispanic	27.6	24.3-31.2
Education		
< 12 years	11.7	7.3-18.2
12 years	21.7	17.0-27.2
> 12 years	40.8	35.4-46.3
Previous Live Birth		
No	25.0	20.3 – 30.3
Yes	28.9	24.7 – 33.4
WIC During Pregnancy		
No	38.9	33.8-44.3
Yes	18.2	14.6-22.5
Trying to get Pregnant		
No	16.4	13.0-20.4
Yes	43.8	38.2-49.5

Morbidity

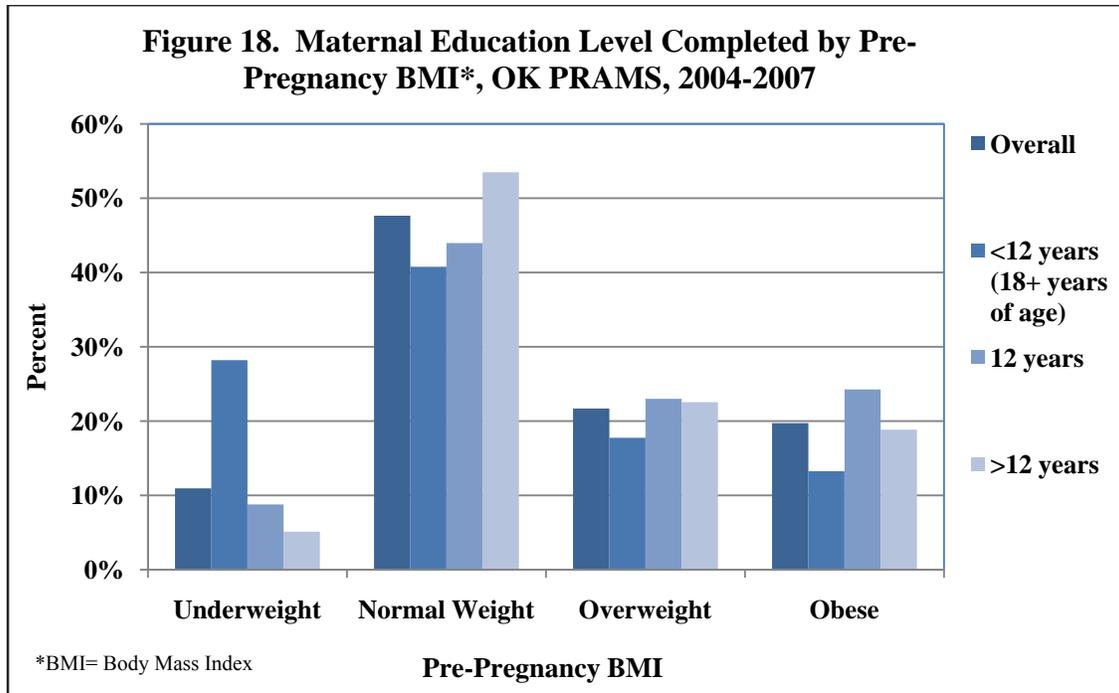
BRFSS data for 2008, show that 11.9% of females aged 18-44 reported their general health to be fair or poor. Stratified by race, African American/Black females and females of multiple races had the highest prevalence of fair or poor health at 21.5% and 21.9%, respectively. Hispanics fared only slightly better with 19.9% of females indicating fair or poor health. Whites had the lowest percent with fair or poor health at 9.1% followed by American Indian/Alaska Native at 12.2% (Oklahoma State Department of Health Center for Health Statistics, Vital Records Division, 2009).

- **Obesity**

Less than half of females in Oklahoma were at a normal weight (Body Mass Index [BMI] between 18.5 and 24.9) before pregnancy according to OK PRAMS data. Being overweight (BMI between 25 and 29.9) and being obese (BMI between 30 and above) are risk factors for a variety of unhealthy outcomes for mother and infant (e.g., preterm birth, placenta problems, high blood pressure, and diabetes). Disparities existed between maternal groups in BMI categories. Among white, African American/Black, and American Indian/Alaska Native mothers all BMI categories were disparate (Figure 17). Hispanic mothers also exhibited a higher risk of having an underweight pre-pregnancy BMI compared with non-Hispanic mothers.



Disparities also exist, as depicted in Figure 18, between education levels. Females with lower levels of education were more likely to be underweight and less likely to be at a normal weight. Females with 12 or more years of education were more likely to be overweight or obese.



- **Sexually Transmitted Diseases (STDs)**

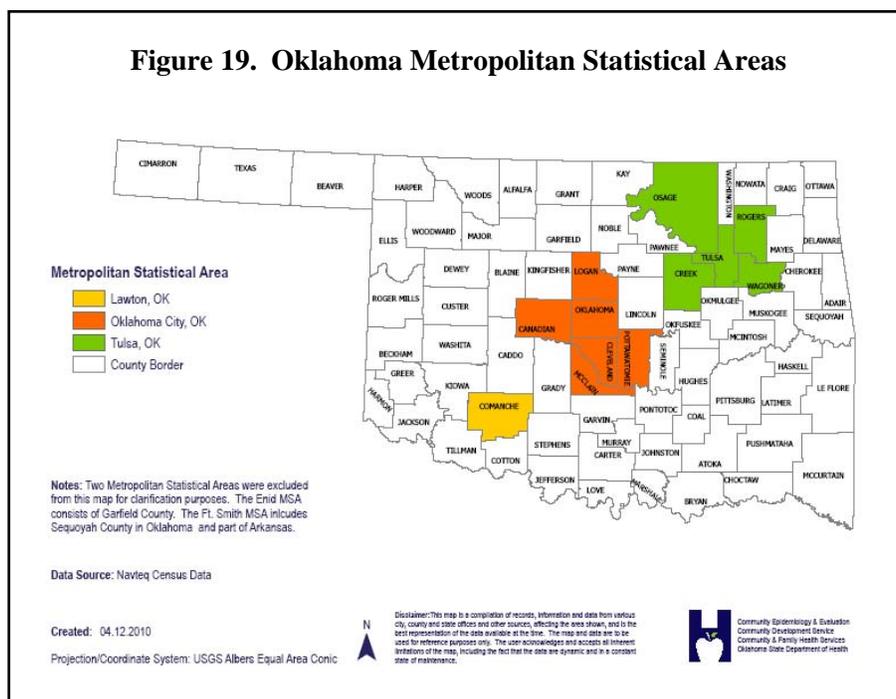
STDs are infections that can be spread from person to person through sexual contact. Prevention of STDs is especially important for pregnant females or females who might become pregnant. For females who are not pregnant, untreated STDs can develop into pelvic inflammatory disease (PID) which in turn can cause infertility. PID can increase the risk of having a tubal or ectopic pregnancy which is fatal for the fetus and at times life-threatening to the mother. Chlamydia and gonorrhea are the STDs most commonly associated with PID. In addition, untreated infections can pass from the mother to the baby before, during, and even after the baby's birth. Infections in pregnant females can cause premature rupture of membranes (PROM), premature labor, low birth weight of the infant, and numerous other complications. Fortunately, chlamydia and gonorrhea are preventable and easily treatable.

The following table (Table 5) shows 2008 STD rates for females aged 15-44 in Oklahoma. The overall chlamydia infection rate for this age group was 1,510 cases per 100,000 females aged 15-44. Females aged 15-19 had the highest rate at 3,649 cases per 100,000 females, followed by females aged 20-24 at 3,261 cases per 100,000 females. As age increases, chlamydia rates appear to decrease; females age 25-29 have half the rate of females aged 15-24.

Table 5. Chlamydia and Gonorrhea Infection Rates* by Age-group, Females Aged 15-44, Oklahoma, 2008		
Age Group	Chlamydia Rate	Gonorrhea Rate
15 to 19 years	3649	881
20 to 24 years	3261	853
25 to 29 years	1169	348
30 to 34 years	412	158
35 to 39 years	181	74
40 to 44 years	51	29
Total	1510	405

*Rates are number of cases per 100,000 females aged 15-44
Source: Oklahoma State Department of Health, HIV/STD Service

Oklahoma has three MSA's which are defined as communities, suburbs, and/or commuter towns with a population of at least 1,000 persons (Figure 19). The Oklahoma City MSA is currently ranked 45th in the U.S. with a total 2008 estimated population of 1,275,758 persons. The Oklahoma City MSA is comprised of eight counties; Canadian, Cleveland, Grady, Lincoln, Logan, McClain, Oklahoma, and Pottawatomie, and is situated in the central part of the state. In comparison, the Tulsa MSA shows a 2008 estimated population of 1,035,755 persons within roughly 6,240 square miles. Tulsa MSA consists of Tulsa, Rogers, Wagner, Okmulgee, Creek Pawnee, and Osage counties, all primarily located in North, Northeast Oklahoma. Oklahoma's third MSA consists of one county, Comanche, whose principal city is Lawton reporting a 2008 estimated population of 111,772 throughout the county.



The following table (Table 6) presents chlamydia and gonorrhea infection rates for each MSA compared to the statewide rate. Comanche county had the highest rate of the three MSA's for chlamydia at 2,551 cases per 100,000 females aged 15-44. Oklahoma county had the highest gonorrhea infection rate of the three MSA's at 777 cases per 100,000 females aged 15-44.

Table 6. Chlamydia and Gonorrhea Infection Rates* by Metropolitan Statistical Areas, Females Aged 15-44, Oklahoma, 2008		
	Chlamydia Rate	Gonorrhea Rate
Oklahoma County	2200	777
Tulsa County	2086	745
Comanche County	2551	635
State Total	1510	405
*Rates are number of cases per 100,000 females aged 15-44 Source: Oklahoma State Department of Health, HIV/STD Service		

Racial disparities exist for STDs in Oklahoma. Although African American/Black females aged 15-44 comprise only 8% of the overall population of females aged 15-44, they account for 28.9% of reported chlamydia cases and nearly half (48.8%) of all reported gonorrhea cases. In 2008, African American/Black females reported chlamydia infections rates at more than eight times that of Asian/Pacific Islanders, five times the rate of white females, and more than twice the rate of the next closest racial group, American Indian/Alaska Native (Table 7). Similar racial disparities exist for gonorrhea rates. In 2008, African American/Black females in Oklahoma had reported gonorrhea infection rates several times that of all other race groups at 2,083 per 100,000 females aged 15-44, compared to American Indian/Alaska Natives at 310, whites at 169, and Asian/Pacific Islanders at 39 per 100,000 females aged 15-44.

Table 7. Chlamydia and Gonorrhea Infection Rates* by Race, Females Aged 15-44, Oklahoma, 2008				
	Chlamydia		Gonorrhea	
	Cases	Rate	Cases	Rate
White	4672	830	4672	830
African American/Black	3152	4571	3152	4571
American Indian/Alaska Native	1280	1763	1280	1763
Asian/Pacific Islander	102	570	102	570
*Rates are number of cases per 100,000 females aged 15-44 Source: Oklahoma State Department of Health, HIV/STD Service				

- **Cancer**

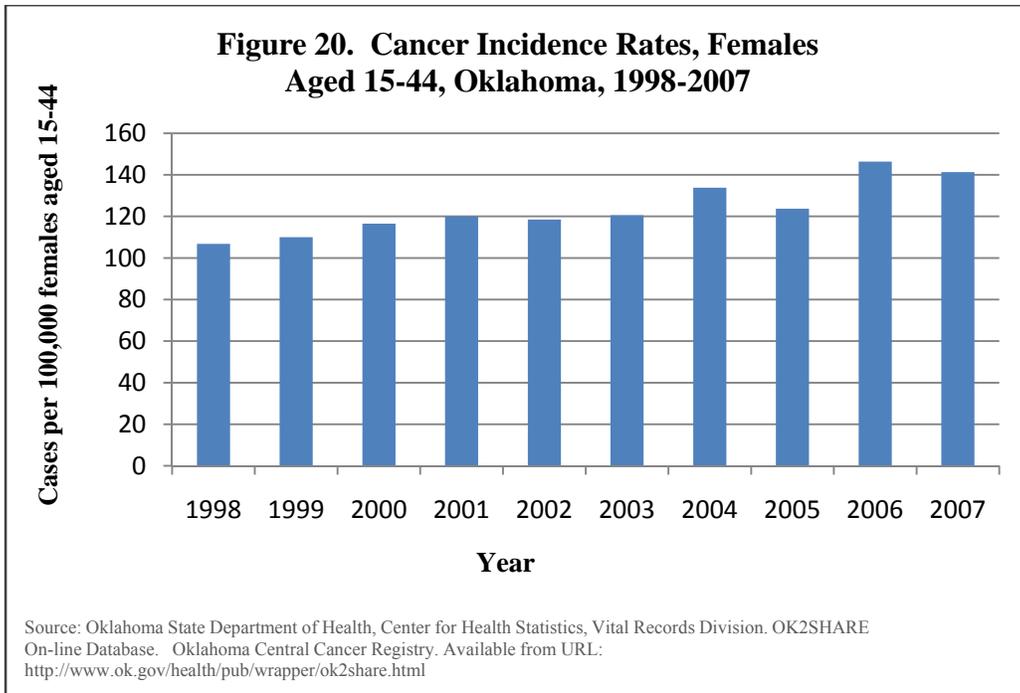
Cancer is a major health burden on the state of Oklahoma due to its lengthy and chronic nature; it is the second leading cause of death for Oklahomans and claims more than 7,000 lives each year. The Oklahoma Central Cancer Registry was implemented on January 1, 1997, and is the central database for information on all cancers diagnosed or treated in Oklahoma. Since the implementation of the cancer registry, the number of new cancer cases diagnosed each year has increased from 16,227 in 1997 to 18,969 in 2007 (Oklahoma State Department of Health, 2009).

While advances in medical technology have significantly improved the early detection, treatment, and survival rates for persons with cancer, prevention still proves to be the greatest challenge in the battle against cancer. In 2006, the most recent year national data are available, Oklahoma was higher than the national average in eight of the top 10 cancer sites for females of all ages; however, only three are statistically significant (Table 8).

Comparing overall incidence rates among females to the U.S. and surrounding states, Oklahoma’s 2006 rate of 430.8 cases per 100,000 females was higher than the U.S. (407.9), Kansas (420.2), Missouri (413.7), Arkansas (385.1), Texas (381.6), Colorado (376.7), and New Mexico (353.8) (data not shown).

Table 8. Top 10 Cancer Incidence Rate Comparison, Females of All Ages, Oklahoma and U.S., 2006			
Rank	Primary Site	Oklahoma Rate (C.I)	U.S. Rate (C.I)
1	Female Breast	120.1 (115.4-125.1)	119.3 (118.7-119.8)
2	Lung and Bronchus	67 (63.6-70.7)	55 (54.7-55.4)
3	Colon and Rectum	42.1 (39.3-45.0)	41.1 (40.8-41.4)
4	Corpus and Uterus, NOS	21.4 (19.4-23.5)	23.7 (23.4-23.9)
5	Non-Hodgkin Lymphoma	19 (17.1-21.0)	15.7 (15.5-15.9)
6	Melanomas of the Skin	15.3 (13.6-17.2)	15 (14.8-15.2)
7	Thyroid	14.6 (12.9-16.5)	16 (15.8-16.2)
8	Ovary	13.6 (12.0-15.3)	12.3 (12.1-12.5)
9	Leukemias	11.5 (10.1-13.1)	9.2 (9.0-9.3)
10	Kidney and Renal Pelvis	11.1 (9.7-12.7)	10.8 (10.6-10.9)

*Rates are number of cases per 100,000 females and are age-adjusted to the 2000 U.S. standard population.
C.I.- Confidence Interval
Source: U.S. Cancer Statistics Working Group. United States Cancer Statistics: 1999–2006 Incidence and Mortality Web-based Report. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute; 2010. Available at: www.cdc.gov/uscs.



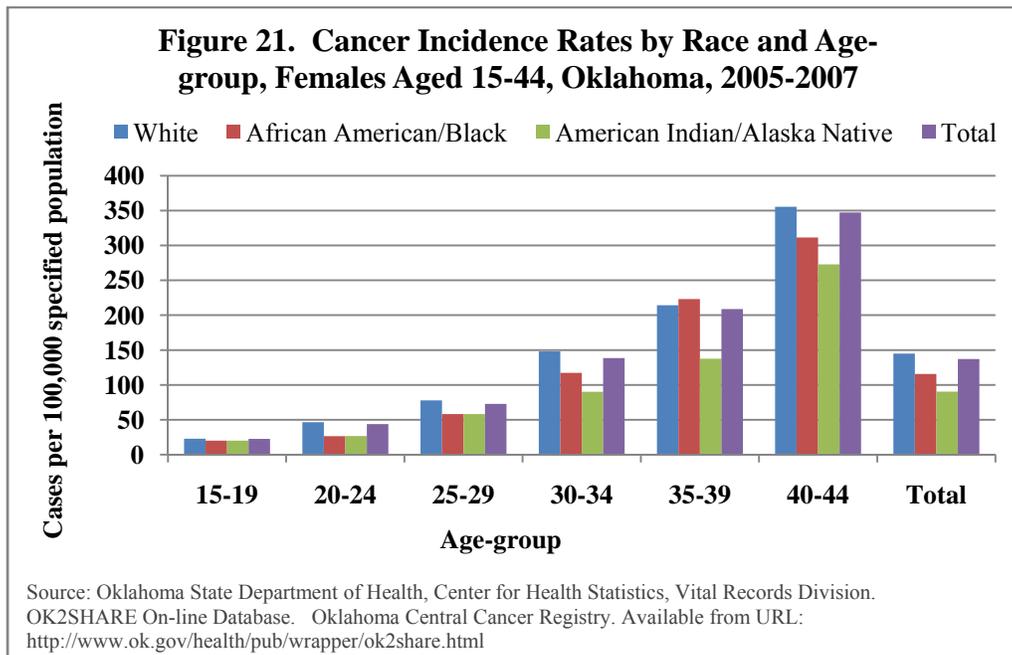
Oklahoma has seen a significant increase in cancer incidence rates from 1997-2006 for females aged 15-44 (Figure 20). Over the last ten years rates increased 32.3% from 106.8 per 100,000 females aged 15-44 in 1997 to 141.3 in 2007.

When examining by primary site of cancer (Table 9), breast cancer (excluding in situ) was the number one primary site with a rate of 35.0 cases per 100,000 females aged 15-44, which was more than twice as high as the second highest primary site of melanomas of the skin at 15.1 cases per 100,000 females aged 15-44. Breast cancers (excluding in situ) comprise 26.8% of all state cancer reported sites. When broken down by age-group, the most common site for females aged 15-29 is melanomas of the skin, while the most common site for females aged 30-44 is breast (excluding in situ).

Table 9. Top 10 Cancer Sites for Females Aged 15-44, Oklahoma, 2005-2007		
Rank	Primary Site	Rate*
1	Breast (Excluding In Situ)	35.0
2	Melanomas of the skin	15.1
3	Thyroid	12.4
4	Cervix uteri	9.3
5	Breast (In Situ only)	6.0
6	Corpus uteri	5.0
7	Colon excluding rectum	4.4
7	Non-Hodgkin Lymphoma	4.4
9	Brain	3.9
10	Lung and bronchus	3.7

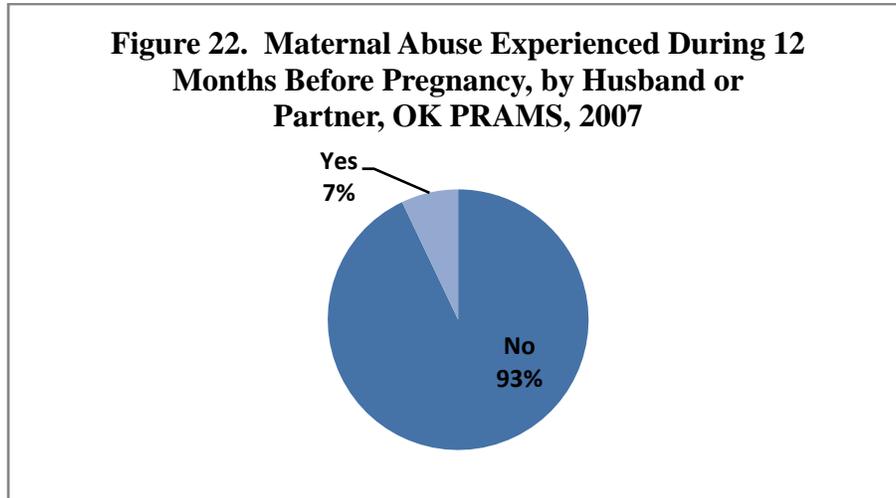
*Rates are number of cases per 100,000 females aged 15-44
Source: Oklahoma State Department of Health, Center for Health Statistics, Vital Records Division. OK2SHARE On-line Database. Oklahoma Central Cancer Registry. Available from URL:
<http://www.ok.gov/health/pub/wrapper/ok2share.html>

Racial disparities for incidence of cancer do exist as rates for white females aged 15-44 were 25% higher than the African American/Black and 60% higher than the American Indian/Alaska Native rate, at 145.0, 115.7, and 90.4 per 100,000 specified population, respectively. Disparities also exist among age-groups with significantly increasing risks for cancer as age increases. Females aged 15-19 had the lowest cancer incidence rate at 23.7 per 100,000 population while females aged 40-44 had the highest rate at 331.7 per 100,000 population (Figure 21).



Domestic Abuse/Intimate Partner Violence (IPV)

Domestic abuse according to the Oklahoma State Bureau of Investigation is defined by law enforcement as “threatening, causing, or attempting to cause serious physical harm between family or household members.” (Oklahoma State Bureau of Investigation, 2008). Offenses such as assault, assault and battery, sex crimes, and murder are included in domestic abuse. Domestic abuse continues to be a serious problem in Oklahoma as 23,853 cases of domestic abuse were reported in 2008. This is a 12.5% increase from the number of reported abuse cases in 1999. From 2007-2008, there was an overall increase (1.9%) in reported domestic abuse.



Seven percent of females reported physical abuse by their husbands or partners during the 12 months prior to pregnancy in Oklahoma according to PRAMS data (Figure 22). The PRAMS question asked mothers if their husband or partner pushed, hit, slapped, kicked, choked, or physically hurt them in any other way. Physical abuse during pregnancy has been linked to miscarriage and an increased risk for low birth weight (March of Dimes, 2008).

Mortality

From 2004-2006 the leading cause of death for females aged 15-44 was accidents or unintentional injuries, comprising nearly one-third (32.8%) of all deaths for this age group. The mortality rate for this cause was 31.9 deaths per 100,000 females aged 15-44. According to Oklahoma Vital Records, the most frequent causes of death due to accidents were: motor vehicle accidents; accidental poisoning and exposure to noxious substances; accidental exposure to smoke, fire, and flames; falls; and accidental drowning and submersion. The second leading cause of death for females aged 15-44 was malignant neoplasm (cancer) at 19.3 deaths per 100,000 females aged 15-44, followed by diseases of the heart at 11.8 per 100,000 females aged 15-44 (Table 10). When broken down by age-group the top ten causes of death vary considerably.

While accidents remain the leading cause of death for 15-24 year olds and 25-34 year-olds, accidents become the second leading cause of death for 35-44 year olds. The number one cause of death for 35-44 year olds was malignant neoplasm at 45.3 deaths per 100,000 females aged 15-44. However, the mortality rate due to accidents for 35-44 year-olds as the second leading

cause of death is still higher than 15-24 and 25-34 year olds. Of particular concern for 15-24 year olds is intentional self-harm (suicide) and assault (homicide) which was the second and third leading causes of death, respectively, for this age-group.

As expected, deaths due to unnatural causes was highest for the youngest age-group, while deaths due to natural causes such as chronic disease and infections were highest for the older age-groups.

Age-group	15-44		15-24		25-34		35-44	
	<u>Rank</u>	<u>Rate</u>	<u>Rank</u>	<u>Rate</u>	<u>Rank</u>	<u>Rate</u>	<u>Rank</u>	<u>Rate</u>
Cause of death								
Accidents (unintentional injuries) (V01-X59,Y85-Y86)	1	31.9	1	28.8	1	27.1	2	39.9
Malignant neoplasms (C00-C97)	2	19.3	4	3.3	2	10	1	45.3
Diseases of heart (I00-I09,I11,I13,I20-I51)	3	11.8	6	2.4	4	5.9	3	27.6
Intentional self-harm (suicide) (X60-X84,Y87.0)	4	7.5	2	4.9	3	7.4	4	10.4
Assault (homicide) (X85-Y09,Y87.1)	5	4.2	3	3.5	5	4.9	8	4.3
Cerebrovascular diseases (I60-I69)	6	3.2	7	0.9	8	1.4	5	7.4
Diabetes mellitus (E10-E14)	7	3	8	0.8	6	2.5	7	5.7
Chronic liver disease and cirrhosis (K70,K73-K74)	8	2.4	-	-	-	-	6	6.6
Influenza and pneumonia (J10-J18)	9	1.8	-	-	9	1.4	10	3.8
Chronic lower respiratory diseases (J40-J47)	10	1.8	-	-	-	-	9	3.9
*Rates are number of deaths per 100,000 females aged 15-44								
Source: Oklahoma State Department of Health, Health Care Information, Vital Records Division								

2. Pregnant Women

Access to Care

- **Prenatal Care**

Figure 23 displays the percent of live births with late (third trimester) or no prenatal care, by county. Of the Oklahoma's 77 counties, 66 were at or below the 2006 national average of 7.9% for late or no prenatal care. Seven counties had between 8.0% and 15.0%, and two counties had between 15.1% and 25.0% of mothers who had a live birth enter into late prenatal care or had no prenatal care at all. Finally, two counties had more than one-fourth of their mothers who had a live birth enter into late or no prenatal care: Beckham at 38.4% and Roger Mills at 37.2%.

In 2006, 75.6% of mothers began prenatal care in the first trimester in Oklahoma, compared to 83.2% reported for the U.S. For this time period significant disparities existed between racial and ethnic groups, both in Oklahoma and in the U.S. Those least likely to have received first trimester prenatal care were Hispanic women in Oklahoma at 64.5%. With the introduction of "Soon-To-Be-Sooners", this disparity is anticipated to decrease for some Hispanic females in Oklahoma.

Figure 23. Percent of Live Births with Late or No Prenatal Care, by County, Oklahoma, 2005-2007

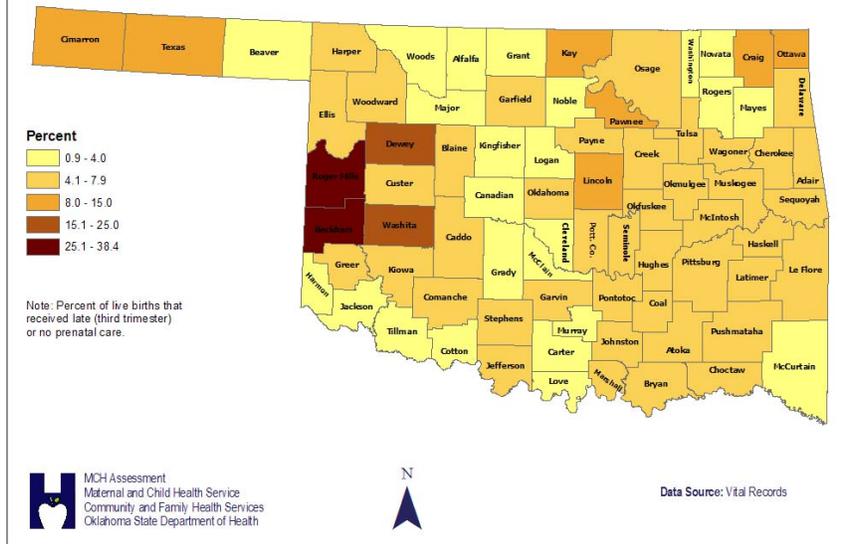
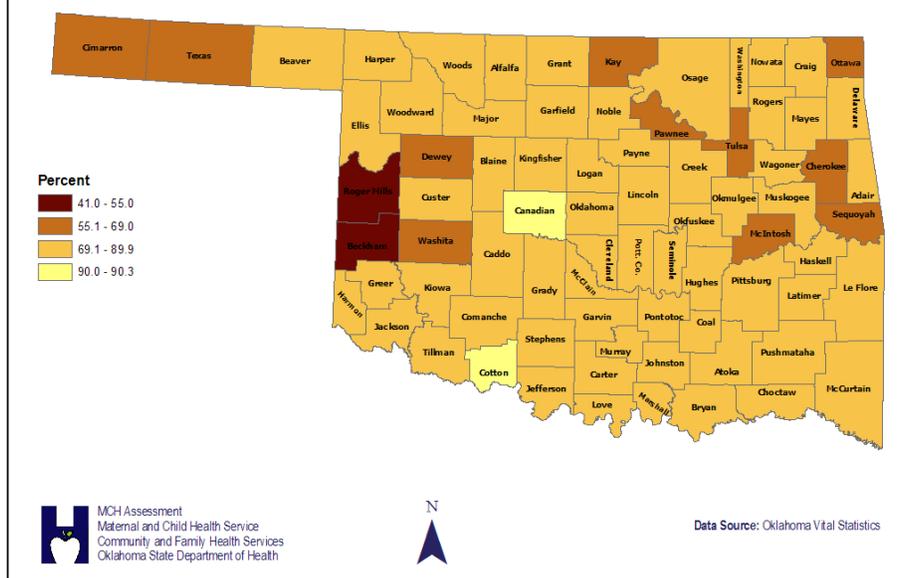


Figure 24 shows the percent of live births whose prenatal care began in the first trimester, by county. Seventy-five of Oklahoma's 77 counties fell short of the Healthy People 2010 goal of 90.0% of live births entering first trimester prenatal care, with two of those counties, Beckham and Roger Mills, reporting less than half of their live births entering first trimester prenatal care, at 42.3% and 48.1%, respectively. Only Canadian County and Cotton County had a higher percent of mothers entering prenatal care during the first trimester than the Healthy People 2010 goal of 90.0%, at 90.2% and 90.3%, respectively.

Figure 24. Percent of Live Births Whose Prenatal Care Began in the First Trimester, by County, Oklahoma, 2005-2007



Figures 25 and 26 show prenatal and delivery insurance coverage by maternal race or Hispanic origin based on 2005-2008 OK PRAMS data. Among all resident live births during this period, 50% of the mothers received prenatal care coverage through Medicaid/SoonerCare and 36% from private insurance or a Health Maintenance Organization (HMO). Racial disparities are apparent in prenatal insurance: 73% of African American/Black females received prenatal insurance coverage through Medicaid/SoonerCare, compared to 45% for white females. Nearly 18% of American Indian/Alaska Native mothers received prenatal care via the Indian Health Service. Ten percent of Hispanic females paid for their prenatal coverage with personal income (cash, check, or credit card) compared with only 2% for non-Hispanic females. Fifty-five percent of deliveries in Oklahoma were covered by Medicaid/SoonerCare during 2005-2008, while 35% were covered by private insurance or HMOs. Racial and ethnic disparities exist for delivery insurance, with 76% of African American/Black deliveries covered by Medicaid/SoonerCare contrasted with 52% for white mothers, and 72% of Hispanic deliveries covered by Medicaid/SoonerCare compared with 53% of non-Hispanic deliveries.

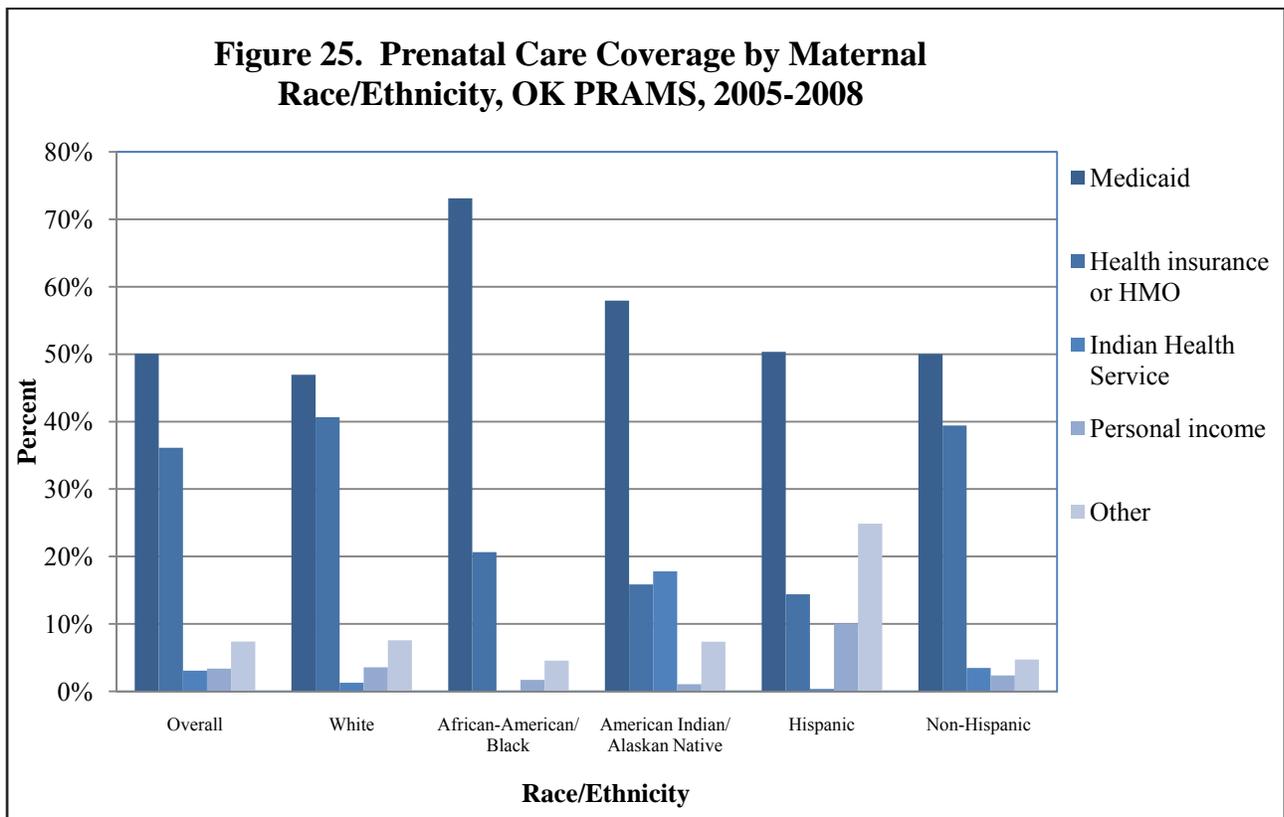
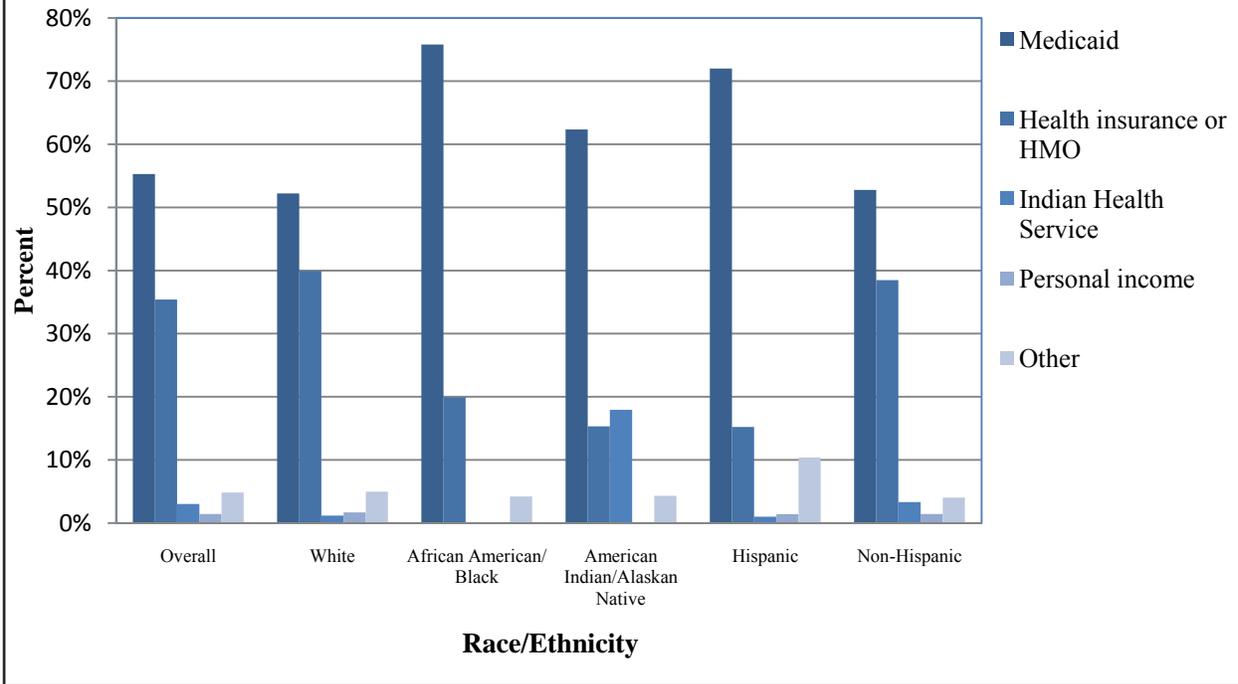
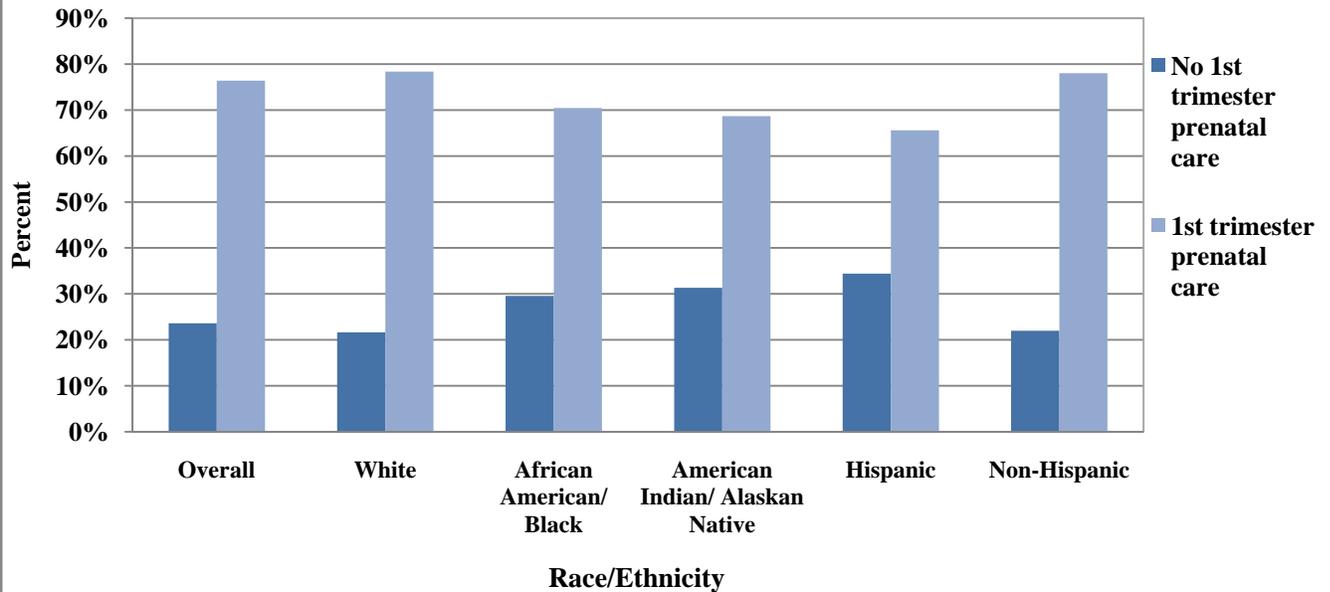


Figure 26. Delivery Insurance by Maternal Race/Ethnicity, OK PRAMS, 2005-2008



Overall rates for receipt of first trimester prenatal care mask underlying racial and ethnic disparities. White females in Oklahoma are more likely to access their prenatal care in the first trimester, when compared to African American/Black, American Indian/Alaska Native, and Hispanic females (Figure 27). No racial or ethnic group meets the Healthy People 2010 goal for 90% of females to enter into prenatal care during the first trimester.

Figure 27. Percent of Oklahoma Females with a Live Birth During 2007 Who Received Prenatal Care During the First Trimester



Source: OSDH 2007 Birth Records

○ Adequacy of Prenatal Care

Adequacy of prenatal care (PNC) as defined by traditional indices of PNC, the Kotelchuck and Kessner models, is measured using the number of prenatal health care visits a female has had and the timing of those visits, although differences do exist between both methods (Krueger & Scholl, 2000). However, the quality of the care or the guidance provided during these visits is not factored into either index. Without knowledge about the quality and content of PNC, the true effectiveness of the provided care may not be captured for all females, and subsequent impact on birth outcomes may be difficult to measure. Research has shown a reduction in low birth weight, preterm births, and fetal deaths that can be linked to early and adequate prenatal care. However, adequate prenatal care, as traditionally measured, does not reduce the disparities in these areas between African American/Black and white females (Healy, Malone, Sullivan, & Porter, 2006; Conway & Kutinova, May 2006; Vintzileos, Ananth, Smulian, & Scorza, 2002).

The American College of Obstetrics and Gynecology (ACOG) recommends 33 topics be discussed by PNC providers. The following 16 topics were analyzed by OK PRAMS about new mothers' PNC experiences during their pregnancy (only those that can be measured by OK PRAMS are listed): Smoking During Pregnancy, Breastfeeding, Using Seat Belts, Alcohol Use During Pregnancy, Postpartum Family Planning, Nutrition and Weight Gain Counseling, Exercise, Use of Medications, Illegal/Illicit Drug Use, Risk Factors for Birth Defects and Diseases that Run in Families, Signs and Symptoms of Preterm Labor, HIV Testing, Intimate Partner Violence, and Postpartum Depression. There are 18 additional topics on the ACOG Antepartum Record Form E that are not measured by OK PRAMS (The American College of Obstetrics and Gynecology (ACOG), 2002). To determine if a difference existed between groups of females receiving information on all of the educational PNC topics inquired about in the

PRAMS survey, the 16 topics were grouped together. Overall, 15% of new mothers in Oklahoma received all 16 of the topics discussed in this study, irrespective of race.

When controlling for demographic variables such as marital status, age, race, education, SoonerCare status, and rural/urban status, African American/Black mothers were more likely to receive a discussion on physical abuse when compared with white mothers and less likely to receive a discussion on weight gain. Discussions about illegal drug use did not vary between different racial categories; however, those females who were under 20 years of age, less educated, living in rural areas, and/or had SoonerCare coverage were more likely to report this topic (data not shown).

The prenatal care received by African American/Black females and white females in Oklahoma varied on a few key topics, but overall the conversations between both maternal groups and their prenatal health care providers were similar. Only 15.3% of African American/Black mothers and 14.0% of white mothers reported receiving prenatal counseling on all 16 topics asked in the OK PRAMS survey (data not shown), a difference that was not statistically significant. Although the ACOG standards are not followed by every obstetric practice or by every prenatal health care provider in Oklahoma, the 16 measured topics are important and necessary for good pregnancy and postpartum health.

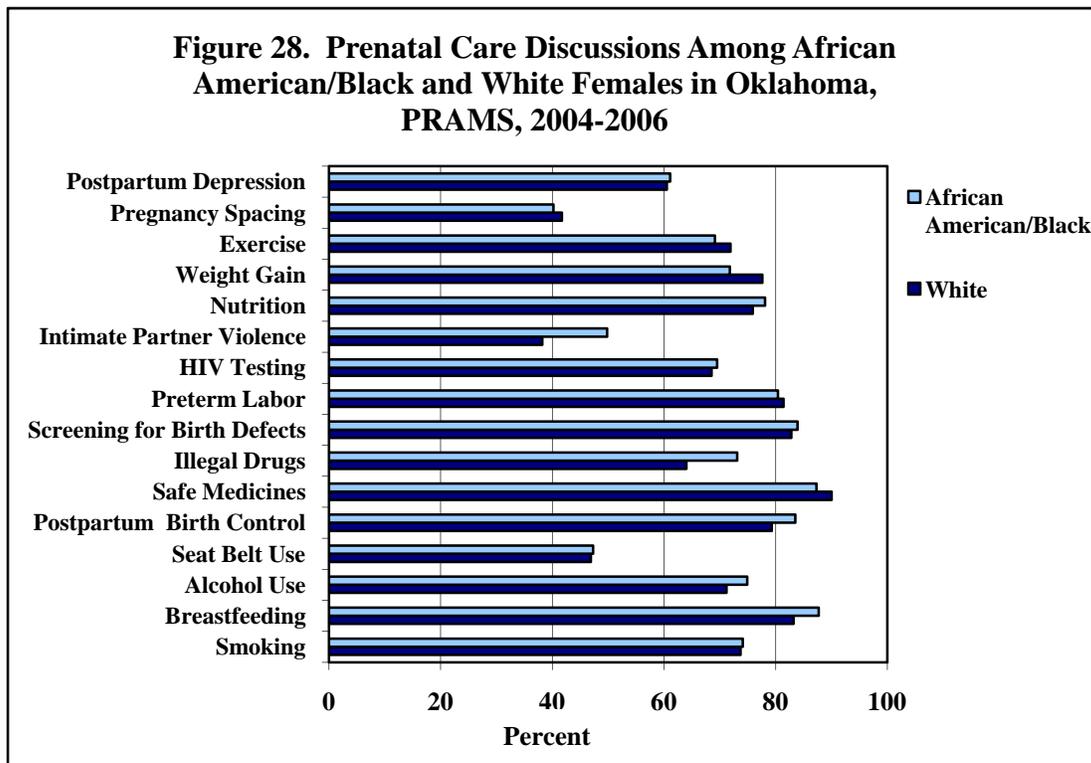
Four topics, seat belt use, intimate partner violence, pregnancy spacing, and postpartum depression, were each individually reported by fewer than 65% of the total maternal population (Figure 28). Due to their importance on the health of the current pregnancy, the health of the mother and her future pregnancies, or their impact on the bonding between a mother and her infant, these are significant and necessary topics for all females.

Maternal report of risk appropriate care shows that few females receive information on topics that were pertinent to their reported health behaviors or risks. While maternal smokers were very likely (over 80%) to receive discussions about the effects of smoking during pregnancy, less than 15% were then referred to the state cessation telephone quit line and fewer than 10% were prescribed an aid to help with quitting, for instance an inhaler, pill, spray or patch, both evidence-based methods to deter smoking in pregnant and parenting females.

Females who needed counseling about intimate partner violence (those who reported physical abuse before or during pregnancy) were marginally more likely to receive it if they were white. However, fewer than 45% of females in both groups recalled discussing this issue with their providers. Violence before and during a pregnancy can have harmful impacts on the pregnancy, including increasing the risk for delivering a low birth weight infant and increasing the likelihood of stillbirth or infant death (NP Yost, et al., 2005).

For those females classified as either overweight or underweight, slightly more than half, irrespective of race, received the necessary counseling on weight gain, nutrition, and exercise. However, for females who reported a previous low birth weight infant, African American/Black females were significantly more likely to receive the necessary counseling on weight gain and instructions if labor begins early. This is important because appropriate weight gain during pregnancy has the potential to increase the birth weight of the infant, and recognizing early labor

and knowing what to do may enable a pregnant female to arrive at the most appropriate facility for delivery, if labor cannot be delayed.



- **Interconception care**

The issue of unintended pregnancy has a large research base, both in Oklahoma and nationwide. Less is known, however, about the frequency of multiple unintended pregnancies and the factors associated with avoiding subsequent unintended pregnancies.

An analysis of TOTS data and the intention of subsequent pregnancies revealed that pregnancy intention in a previous pregnancy resulting in a live birth was a strong predictor of pregnancy intention in the subsequent pregnancy. More than one in four females, 27.6% (95% CI: 25.7, 29.6), had a subsequent pregnancy by two years postpartum. A significant positive association was found between prior unintended pregnancies and subsequent unintended pregnancies (Table 11).

Table 11. Prevalence of Subsequent Unintended Pregnancies According to Intention of Prior Pregnancy, TOTS, 2004-2007				
	Percent (%) subsequent unintended pregnancy	95% Confidence Interval (CI)	Percent (%) subsequent intended pregnancy	95% Confidence Interval (CI)
Prior unintended pregnancy	81.9	75.2, 87.1	18.1	12.9, 24.8
Prior intended pregnancy	34.1	28.0, 40.8	65.9	59.2, 72.0

The role that postpartum health checkup and postpartum birth control played in mitigating the risk for a second unintended pregnancy highlighted the importance of interconception care for Oklahoma’s new mothers, particularly in the first 2-6 months postpartum. Only 84.3% of Oklahoma’s new mothers received a health checkup after pregnancy, regardless of intention status.

Among females with two consecutive unintended pregnancies, age, SoonerCare status, and marital status were highly significant factors (Table 12). In addition, not using birth control in the two through six months after the first unintended pregnancy and not having a health checkup increased the risk for a second unintended pregnancy by two years postpartum.

Table 12. Logistic Regression of Factors Influencing Two Consecutive Unintended Pregnancies, TOTS, 2004-2007		
Factors	Adjusted Odds Ratio (AOR)	95% CI
Age*		
< 20	3.2	1.6, 6.2
20 + (Reference)	1.0	1.0, 1.0
Medicaid*		
Yes	2.7	1.4, 5.2
No (Reference)	1.0	1.0, 1.0
Marital Status*		
Married (Reference)	1.0	1.0, 1.0
Unmarried	2.5	1.3, 4.8
Birth Control Use**		
Yes	1.0	1.0, 1.0
No	4.3	2.2, 8.2
Postpartum checkup		
Yes (Reference)	1.0	1.0, 1.0
No	2.0	1.0, 3.7

- **Oral Health**

Access to dental health care and programs for uninsured pregnant females in the state is difficult to ascertain. In 2006, SoonerCare began allowing pregnant females to receive dental care visits as part of the services offered through their pregnancy benefits. However, data on how many females receive dental care during pregnancy are not currently collected and are therefore not readily available from any state data sources.

- **Mental Health**

A gap exists on the collection, reporting, analyzing, and evaluation of mental health issues associated with females of childbearing age. For pregnant females this gap widens as data are not readily available to address mental health issues at this time. Treatment of diagnoses such as substance abuse remains deficient among this population and the Oklahoma Department of Mental Health and Substance Abuse does not currently track this demographic and their service receipt.

Unintended Pregnancy

Females of all ages and races have unintended pregnancies, but particular groups such as teens, African American/Black females, and low-income females are at a higher risk. Unintended pregnancy is associated with certain adverse health outcomes such as higher rates of inadequate prenatal care, low birth weight, and infant mortality, as well as decreased life opportunities. (Centers for Disease Control and Prevention, 2009)

Intention of pregnancy is ascertained in Oklahoma by the core PRAMS question (Figure 29) that asks mothers to report their feelings about becoming pregnant in the time just before conception. Unintended pregnancies were defined as pregnancies for which the mother reported that she wanted to be pregnant later or did not want to be pregnant then or any time in the future.

Figure 29. PRAMS Question for Pregnancy Intendedness

Thinking back to *just before* you got pregnant with your new baby, how did you feel about becoming pregnant? Check one answer.

- 1) I wanted to be pregnant sooner
- 2) I wanted to be pregnant later
- 3) I wanted to be pregnant then
- 4) I didn't want to be pregnant then or at any time in the future

Overall, OK PRAMS data for 2007 show that 48% of pregnancies resulting in a live birth were unintended. Over one-third of mothers (36.5%) giving birth in 2007 stated that they wanted to be pregnant later, and the remaining 11.5% were mothers who reported they never wanted to be pregnant. In general, the data from 2007 suggests that approximately 19,000 pregnancies resulting in a live birth annually are the result of a mistimed pregnancy; and another 5,900 pregnancies were unwanted at the time the mother became pregnant. These numbers have not significantly changed over the past five years. Since 2000, the numbers have shifted between 48% to 52% without a clearly defined or predictable pattern.

Table 13. Percent of Births that were Unintended by Maternal Characteristics, OK PRAMS, 2007		
Characteristic	Unintended Pregnancy	
	%	95% CI
Age		
< 20	67.9	56.9-77.3
20-24	55.1	48.4-61.6
25-34	40.7	35.5-46.2
35 or older	26.2	17.0-38.1
Marital Status		
Married	32.7	28.6-37.2
Unmarried	69.0	62.9-74.5
Race		
White	44.3	40.1-48.6
AA/Black	66.8	53.1-78.2
AI/AN	59.2	48.3-69.3
Ethnicity		
Hispanic	50.1	38.3-61.9
Non-Hispanic	47.5	43.5-51.5
Education		
< 12 years	62.3	53.5-70.4
12 years	49.0	42.8-55.3
> 12 years	39.5	34.3-45.1
Previous Live Birth		
No	48.3	42.4-54.3
Yes	47.8	42.9-52.7
Medicaid/SoonerCare		
No	29.4	24.7-34.6
Yes	62.0	56.9-66.8

Table 13 shows that females with unintended pregnancies in Oklahoma were more likely to have been unmarried, less than 25 years old, have less than a high school education, African American/Black or American Indian/Alaska Native, and/or had pregnancy or postpartum care paid for by SoonerCare. Ethnicity and parity were not significant factors in pregnancy intention.

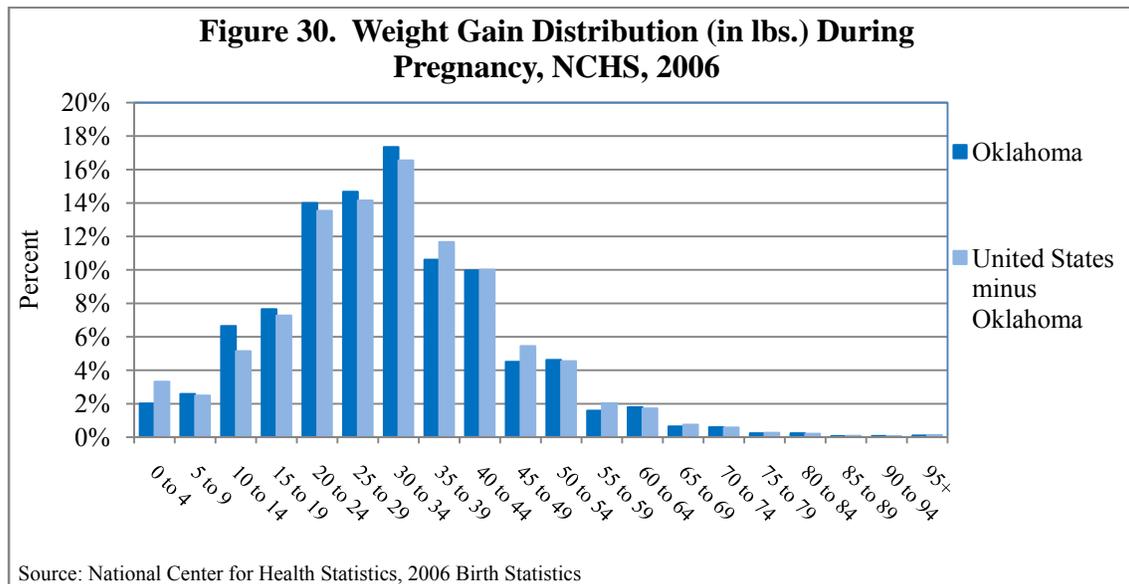
Reasons for unintended pregnancy are not readily collected by any state data sources. Structured focus groups were conducted in the Fall of 2009 and the Spring of 2010, in an attempt to achieve a better understanding of preconception and interconception health in the state. One area of the guided discussions asked females if their first pregnancy was or was not a planned event to probe some of those reasons for unintended and unplanned pregnancies in the state. The data from these groups represent females from Tulsa and Oklahoma City areas, and were mainly comprised of African American/Black, Hispanic and white females involved in social or health programs in those communities.

Among the females who responded that their first pregnancy was not planned, many said it was due to lifestyle changes (new job, hadn't gotten pregnant after trying for a long time), some reported they simply "didn't think about it. Never thought about it" or merely stated they were "young". For some females, a lack of birth control or a lack of understanding about how their method worked best were the main reasons they had an unplanned pregnancy. One female

reported thinking she could not get pregnant. These responses were consistent with other studies in the state that found adolescents were more likely to not use birth control because they thought they were not able to become pregnant (PRAMS Working Group, 2005).

Weight Gain

The average weight gained by pregnant females in Oklahoma during 2006 was 30.2 pounds, slightly lower than the national average (less Oklahoma) of 30.9 pounds, with 95% of Oklahoman mothers gaining between nine and 54 pounds (Figure 30). Average pregnancy weight gain varied little by race; however, non-Hispanic females gained three more pounds on average than Hispanic females (30.6 lbs vs. 27.3 lbs, respectively). Mothers with less than eight years education also gained less weight on average than mothers with eight or more years of education (27.0 lbs vs. 30.3 lbs, respectively). Maternal age was another important factor influencing pregnancy weight gain in Oklahoma. Mothers less than 15 years of age gained over eight pounds more pregnancy weight, on average, than mothers of ages 45 to 49 years (33.8 lbs vs. 25.6 lbs, respectively).



A majority of females in Oklahoma either do not gain sufficient weight or gain excess weight during their pregnancy. The American College of Medicine recommends underweight females gain 28-40 pounds during pregnancy, normal weight gain 25-35 pounds (37-54 pounds for twins), overweight females gain 15-25 pounds (31-50 pounds for twins), and obese females gain 11-20 pounds (25-42 pounds for twins).

According to data gathered from OK PRAMS during 2005-2007, 19.9% of females do not gain enough weight during their pregnancy, 44.8% gain too much weight, and only 35.8% gain the recommended amount. Table 14 displays the percentage of females in the OK PRAMS 2005-2007, categorized by pre-pregnancy body mass index, whose pregnancy weight gain fell within the recommended guidelines.

Table 14. Percentage of All Females by Pre-Pregnancy BMI Whose Pregnancy Weight Gain Fell Below, Met, or Exceeded ACOG Guidelines, OK PRAMS, 2005-2007			
Pre-pregnancy BMI	Weight gain with respect to ACOG guidelines	Percentage	95% CI
Underweight	Below	35.2	26.0, 44.5
	Within	47.8	37.9, 57.7
	Exceeded	17.0	9.7, 24.3
Normal	Below	24.9	22.2, 27.6
	Within	40.6	37.5, 43.6
	Exceeded	34.5	31.6, 37.5
Overweight	Below	8.5	6.1, 10.9
	Within	32.9	28.5, 37.1
	Exceeded	58.6	54.1, 63.1
Obese	Below	17.0	13.6, 20.5
	Within	23.1	19.2, 26.9
	Exceeded	59.9	55.4, 64.5
Total	Below	19.9	18.2, 21.6
	Within	35.4	33.3, 37.5
	Exceeded	44.7	42.6, 46.9

Tobacco Use

Tobacco use in Oklahoma is a serious public health concern. The high prevalence of tobacco users in our state contributes to a multitude of health problems, such as lung cancer and heart disease. Smoking among females of childbearing age brings additional complications and challenges, especially if they are using tobacco products before, during, and/or after pregnancy. Research has shown a very strong association between maternal smoking and low birth weight (U.S. Department of Health and Human Services, 2006).

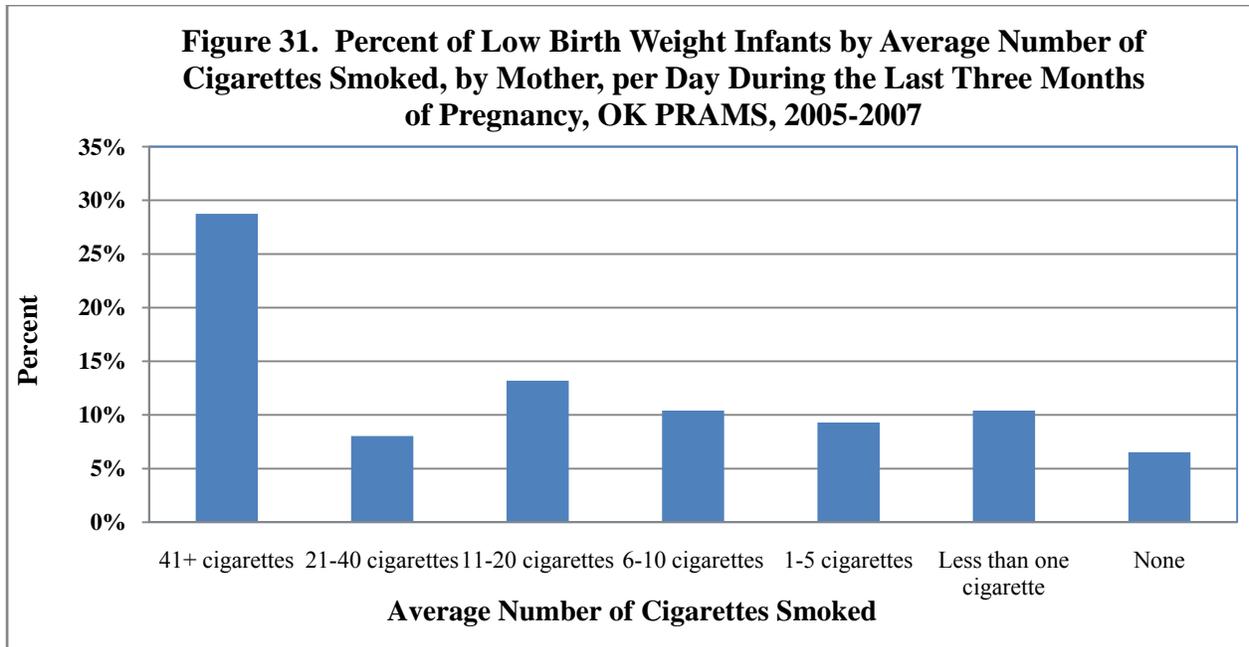
Maternal smoking rates are high in Oklahoma. Thirty-one percent of females, who recently gave birth in Oklahoma, smoked during the three months prior to their pregnancy. While pregnant, 19.1% of females smoked and 26.7% smoked postpartum, (Table 15). The prevalence for smoking before and during pregnancy in Oklahoma is not significantly different from prevalence rates from five or even ten years ago (data not shown). Females most at risk for smoking before pregnancy are those less than 20, with less than a high school education, females receiving SoonerCare assistance, and females who are American Indian/Alaska Native and non-Hispanic.

Although many females do abstain from smoking during their pregnancy, which research suggests can contribute favorably to birth outcomes; far too many continue to smoke during their third trimester (almost one in five pregnant Oklahomans). Those mothers at risk for smoking before their pregnancy are also those most likely to continue smoking during their third trimester and postpartum (Table 15).

Characteristic	Before		During		After	
	%	95% CI	%	95% CI	%	95% CI
Overall	35.0	32.5- 37.6	20.5	18.4-22.8	27.6	25.3- 30.1
Maternal Age						
<20	48.4	40.6- 56.3	28.5	21.8- 36.2	41.5	33.9- 49.5
20-24	42.6	37.9- 47.3	24.9	20.9- 29.3	34.0	29.6- 38.7
25-34	27.2	23.9- 30.6	15.7	13.1- 18.7	20.2	17.3- 23.5
35 or older	22.4	16.0- 30.4	15.0	9.8- 22.4	17.8	12.1- 25.4
Maternal Education						
< HS	45.1	38.9- 51.4	32.0	26.3- 38.1	39.7	33.7- 46.0
HS	45.3	41.0- 49.7	26.2	22.5- 30.3	35.9	31.8- 40.2
> HS	19.6	16.7- 22.7	9.2	7.2- 11.6	13.3	10.9- 16.0
Marital Status						
Married	23.2	20.6- 26.1	11.8	9.8- 14.2	16.8	14.4- 19.4
Other	51.4	47.0- 55.8	32.9	28.9- 37.2	42.9	38.6- 47.3
Maternal Race						
White	34.1	31.3- 37.0	20.1	17.7- 22.7	26.9	24.3- 29.7
African American/Black	25.9	18.8- 34.6	16.1	10.6- 23.7	20.6	14.3- 28.8
American Indian/Alaska Native	50.0	42.1- 57.9	27.9	21.1- 35.8	40.1	32.5- 48.3
Other	10.8	2.4- 37.3	9.9	1.9- 38.1	1.3	0.5- 3.5
Maternal Ethnicity						
Hispanic	8.6	5.1- 14.2	2.1	0.8- 5.6	7.1	3.9- 12.4
Non-Hispanic	38.2	35.5- 41.0	22.7	20.4- 25.3	30.0	27.5- 32.7

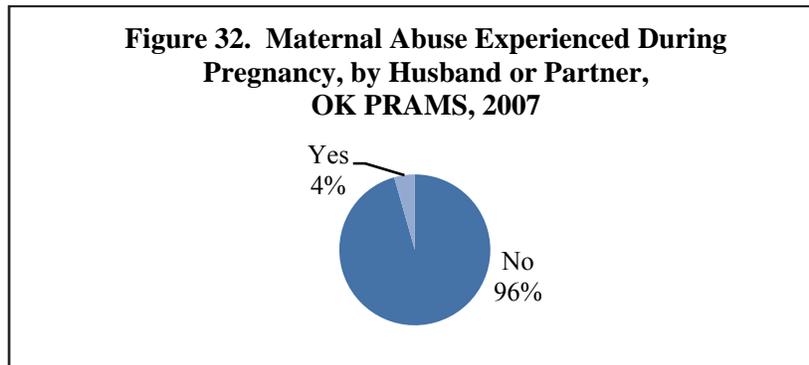
1 Smoking during the three months prior to conception.
2 Smoking during last three months of pregnancy.
3 Smoking at the time the PRAMS survey was administered.

OK PRAMS, 2005-2007, data showed that females who smoked were significantly more likely to give birth to a low birth weight infant than females who did not smoke (10.5% vs. 6.5%). Among females who reported smoking 41 or more cigarettes per day, on average, during the final three months of pregnancy, over 28% of live birth infants were low birth weight (Figure 31). Any amount of cigarette use during pregnancy increased the risk of low birth weight, even among females who reported less than one cigarette per day. Low birth weight infants are at higher risk for needing medical intervention at delivery and are more likely to have long-term health problems.



Intimate Partner Violence (IPV) During Pregnancy

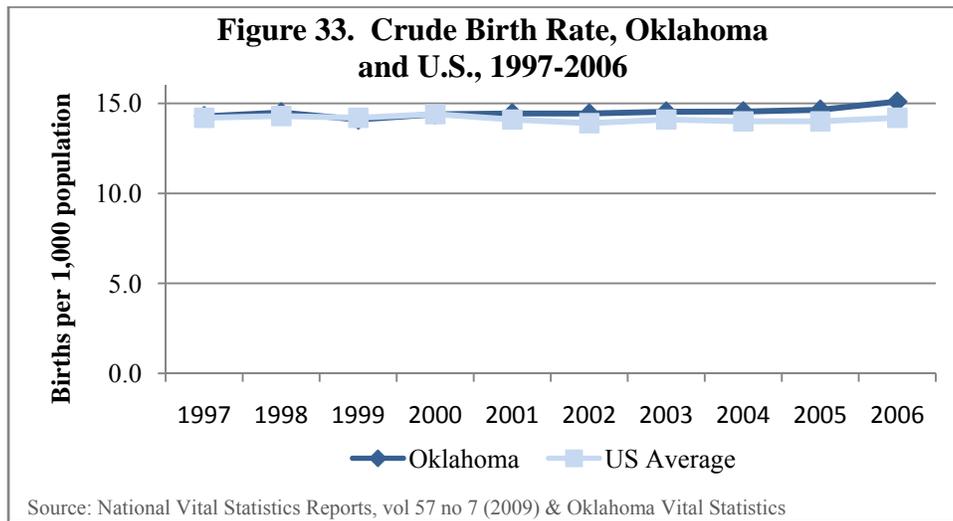
One in twenty females with a recent live birth, (4.4%) reported physical abuse during their most recent pregnancy (Figure 32). Due to the highly sensitive nature of this question, these results are generally considered to be conservative estimates, and the actual prevalence of violence before and during pregnancy is most likely higher. The National Coalition Against Domestic Violence estimates that one in every four women will experience domestic violence in their lifetime (National Coalition Against Domestic Violence, 2007).



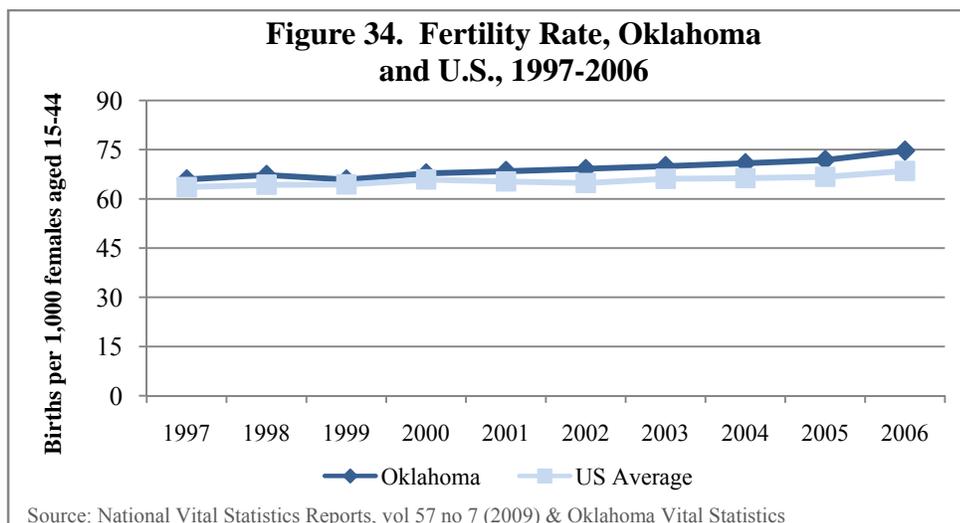
Births

The crude birth rate refers to the number of births per 1,000 population and uses the entire population, including men, women, and children, as the denominator. Trends in birth rates for Oklahoma have shown only a slight increase from 14.5 births per 1,000 population in 1998 to 15.2 births per 1,000 population in 2007, a 4.8% difference. The national birth rate has had only minor variation over the last ten years and remains virtually unchanged (Figure 33). In 2006, the latest year for which final natality data are available for the U.S., Oklahoma’s crude birth rate of

15.1 births per 1,000 population was 6.3% higher than the national average of 14.2 (National Center for Health Statistics, 2009).



A fertility rate, specifically the general fertility rate, is defined as the ratio of all births to the female population aged 15-44. Oklahoma fertility rates have seen a 15% increase over a ten-year period, from 65.9 births per 1,000 females in 1998 to 75.8 births per 1,000 females in 2007. In 2006, the latest year for which final natality data are available for the U.S., Oklahoma's fertility rate of 74.7 births per 1,000 females age 15-44 was 9.1% higher than the national average of 68.5 (Figure 34). Twenty-four counties in Oklahoma had a lower fertility rate than the U.S. average of 68.5 (National Center for Health Statistics, 2009). Two counties, Harper and Roger Mills, had fertility rates of 100 or more.



Although the 45 and older age-group saw the largest percent increase at 64.3%, this figure is based on small numbers and even at that level of growth, births to this age-group comprised less than 1% of all births in Oklahoma.

In 2007, 96% of Hispanic mothers in Oklahoma reported their race as white. When shown by race only whites present substantial growth in the number of births over the past ten years. However, when shown by race and Hispanic origin, it is apparent that the majority of the increase in white births is to mothers of Hispanic origin (Table 16). The number of births to Hispanic mothers has increased 98.3% in the past ten years from 3,615 births in 1998 to 7,167 births in 2007 and 25.3% over the past five years from 5,720 births in 2003 to 7,167 births in 2007. Conversely, births to non-Hispanic white mothers have only increased 0.1% over the same ten-year period and 2.9% during the past five years. All racial groups, except those in the “Other” category, have seen an increase in births from 2003 to 2007.

Maternal Characteristic	Oklahoma births by year										10-Year Percent Change	5-Year Percent Change
	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007		
Total Births ¹	49354	48470	49712	50029	50310	48470	49712	51775	54010	54946	11.3	13.4
Age Group												
10-14	120	131	120	105	113	95	104	113	96	93	-22.5	-2.1
15-17	2704	2514	2492	2322	2216	2118	2165	2020	2280	2293	-15.2	8.3
18-19	5174	5169	5219	5145	5086	4855	4740	4662	4944	5230	1.1	7.7
20-24	15771	15540	16065	16652	17038	17191	17312	17292	17998	17943	13.8	4.4
25-29	13566	13195	13471	13251	13324	13711	14173	14646	15428	15932	17.4	16.2
30-34	7816	7766	8182	8563	8487	8865	8929	8817	8707	8856	13.3	-0.1
35-39	3415	3394	3464	3246	3301	3276	3528	3493	3785	3809	11.5	16.3
40-44	621	622	651	700	707	719	691	696	724	741	19.3	3.1
45+	28	28	26	25	31	33	34	34	42	46	64.3	39.4
Race/Ethnicity												
White	35264	34332	34456	34291	34277	34288	34519	33966	35010	35295	0.1	2.9
African American/Black	4757	4564	4759	4581	4667	4545	4638	4715	4900	4901	3.0	7.8
American Indian/Alaska Native	4767	4700	5115	5183	5063	5199	5312	5640	5852	6272	31.6	20.6
Asian /Pacific Islander	834	832	942	966	1004	1064	1111	1050	1076	1228	47.2	15.4
Hispanic*	3615	3910	4352	4937	5251	5720	6046	6265	7065	7167	98.3	25.3
Other	5	4	34	36	21	17	8	79	14	12	140.0	-29.4

¹Includes Births with Unknown or Missing Maternal Characteristics
*Persons of Hispanic origin can be of any race and are mutually exclusive from the other race categories.
Source: Oklahoma Vital Statistics

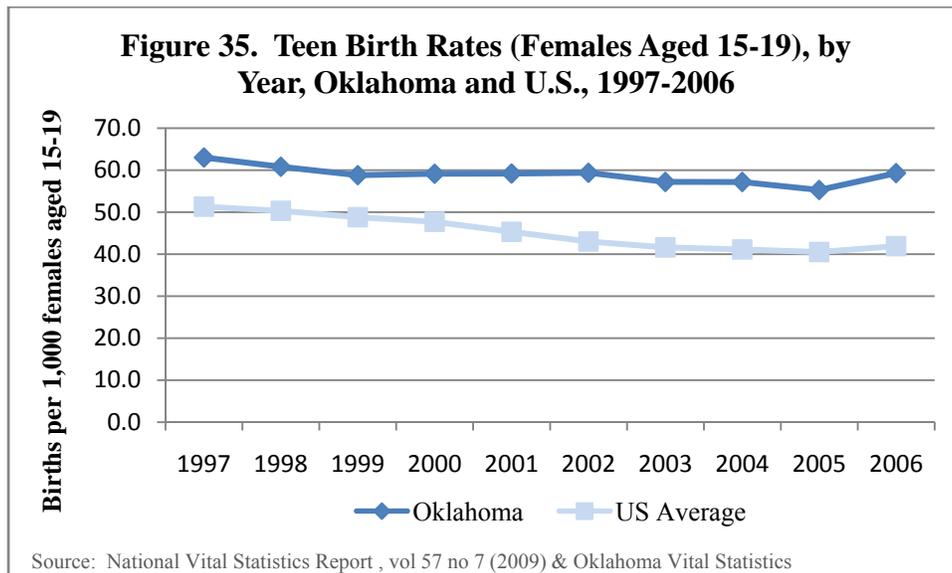
Table 17 displays the number of Oklahoma’s 2007 live births by age within racial and ethnic groups. African American/Blacks, American Indian/Alaska Natives, and Hispanics have the highest percentage of births in each of the two youngest age groups: Aged “< 15” and aged “15-17”. Nearly 20% of births for African American/Blacks and American Indian/Alaska Natives are to mothers 19 years-old and younger, compared to 11.8% of white mothers and 5.0% of Asian/Pacific Islander mothers. Asian/Pacific Islander mothers have the highest percentage of their births to mothers 30-34 and 35 and older at 28.8% and 17.3%, respectively, nearly twice that of any other ethnic group. As will be demonstrated throughout this needs assessment, maternal race, age, ethnicity, and behaviors are important factors in assessing adverse pregnancy outcomes.

	Births	Age-group						
		< 15	15-17	18-19	20-24	25-29	30-34	35+
White	35293	0.1	3.1	8.6	31.7	30.7	17.1	8.8
African American/Black	4901	0.6	7.0	12.2	36.3	25.6	11.7	6.7
American Indian/Alaska Native	6272	0.2	6.5	13.6	37.4	25.5	11.6	5.3
Asian/Pacific Islander	1228	0.0	1.2	3.8	17.9	31.0	28.8	17.3
Hispanic*	7167	0.3	6.0	9.8	33.3	25.8	16.2	8.7
Total	54946	0.2	4.2	9.5	32.7	29.0	16.1	8.4

*Persons of Hispanic origin can be of any race and are mutually exclusive from the other race categories.
Source: Oklahoma Vital Statistics

- **Adolescent Births**

Adolescent births are an important indicator for the state of Oklahoma. Adolescent births represent a myriad of social health issues as births to adolescents are more likely to: be unwanted; be unplanned; be preterm; be low birth weight; and die in their first year of life. The teen birth rate in the U.S. and Oklahoma has been steadily on the decline; however, in 2006 teen birth rates saw an increase for the first time since 1991 (National Center for Health Statistics, 2009). Whether in decline or not, Oklahoma’s teen birth rate continues to be higher than the national average as Oklahoma’s 2006 rate of 59.3 births per 1,000 females aged 15-19 was 41.5% higher than the national rate of 41.9 births per 1,000 females aged 15-19 (Figure 35). Worse yet, the rate increase continued as Oklahoma’s 2007 teen birth rate was 61.8, a 4.2% increase from 2006. Approximately 14% of all births in Oklahoma are born to adolescent mothers aged 15-19.



Significant variation exists among racial and ethnic groups for teen birth rates as Hispanic teens aged 15-19 had the highest birth rate in 2007 at 111.2 births per 1,000 females aged 15-19. This was significantly higher than the next two closest groups with a rate of 86.5 for American

Indian/Alaska Natives and 71.4 for African American/Blacks, and was more than twice as high as the white population at 50.1, and Asian/Pacific Islanders at 30.7 (Figure 36).

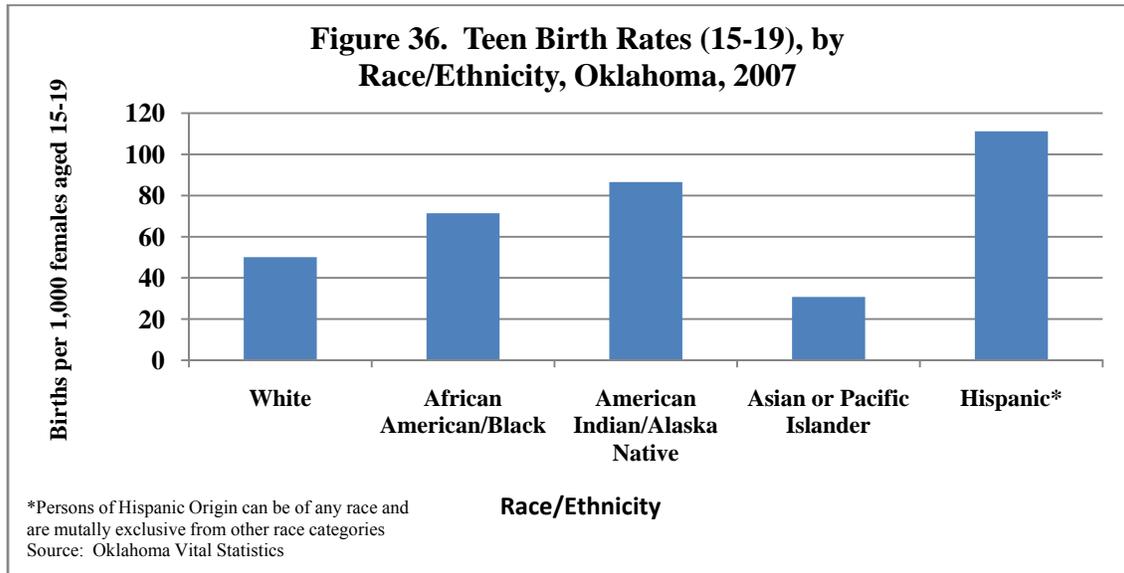
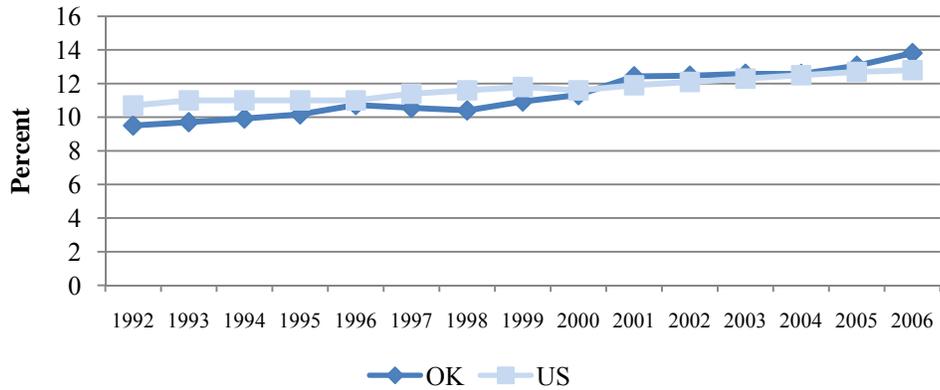


Figure 37 displays a map of teen birth rates by county. The ranges selected were based on the U.S. average of 41.9 (42.0) births per 1,000 females aged 15-19 and Oklahoma’s 2007 rate of 61.3 (61.0). For Oklahoma and Tulsa counties, the two most densely populated counties in the state, the birth rate was 69.9 and 61.9 births per 1,000 females aged 15-19, respectively.

All but 11 counties in Oklahoma were above the national average of 41.9 births per 1,000 females age 15-19. Four counties, Harmon, Murray, Haskell, and Beckham, had rates of 100 or more at 148.9, 113.5, 110.3, and 102.1 births per 1,000 females aged 15-19, respectively. The southeast region of the state continues to have some of the highest teen birth rates affirming the need for continued outreach and prevention efforts in this region.

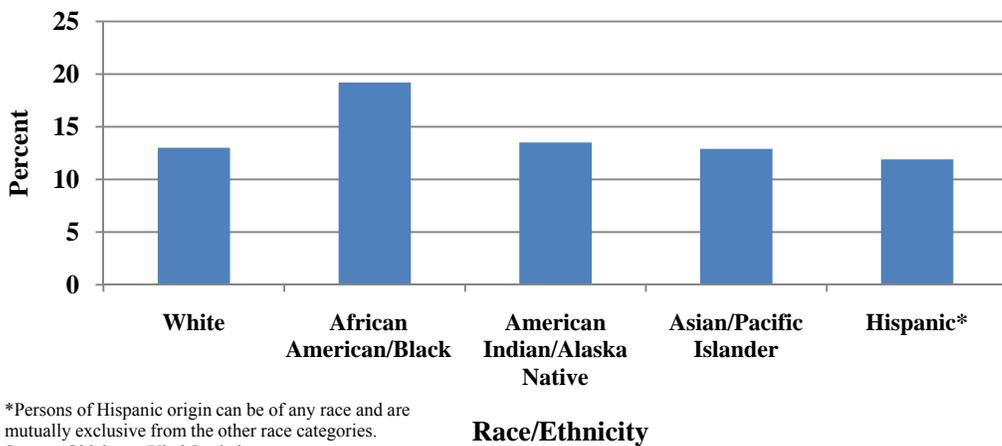
Figure 38. Percent of Live Births that are Preterm, Oklahoma and U.S., 1997-2006



Source: National Vital Statistics Report , vol 57 no 7 (2009) & Oklahoma Vital Statistics

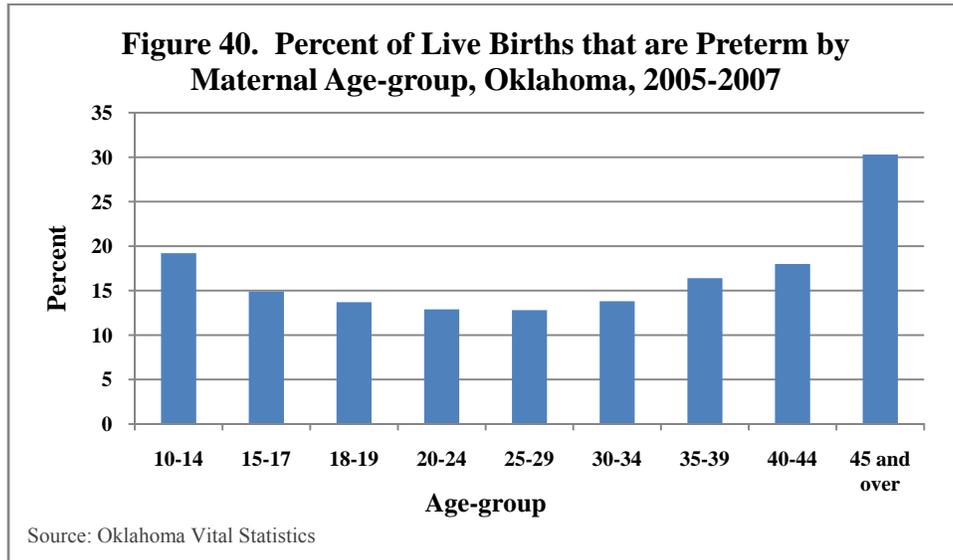
Racial disparities exist in the percent of infants that are born premature (less than 37 completed weeks gestation) as African American/Black mothers had the highest preterm birth rate at 19.2%, followed by American Indian/Alaska Natives at 13.5%, whites at 13.0%, Asian/Pacific Islanders at 12.9%, and Hispanics at 11.9% (Figure 39). While prematurity is an important concern for all racial groups, with disorders due to short gestation and low birth weight being the number one cause of infant death for African American/Blacks, addressing the high rate of prematurity is paramount for this racial group.

Figure 39. Percent of Live Births that are Preterm by Race/Ethnicity, Oklahoma, 2005-2007

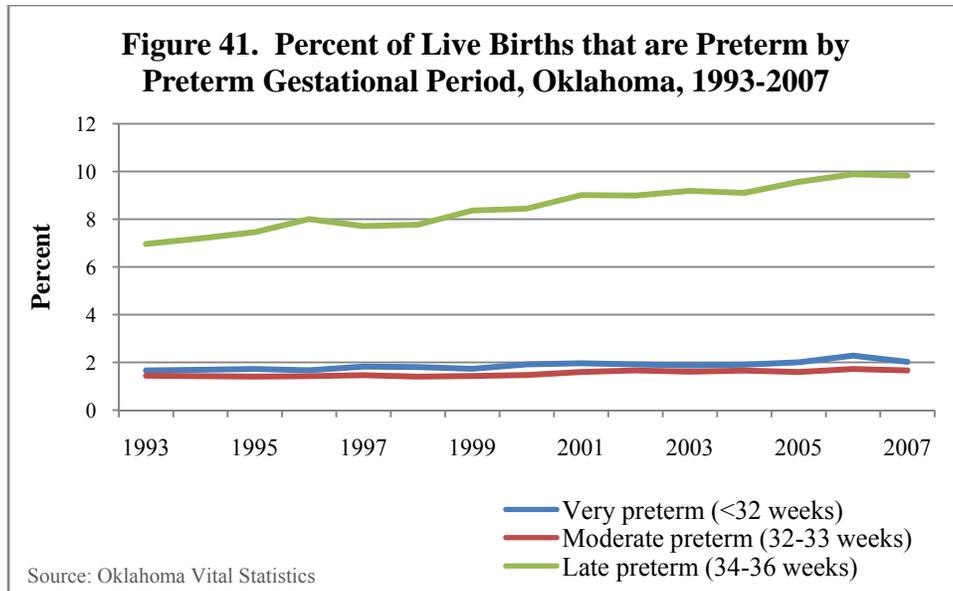


*Persons of Hispanic origin can be of any race and are mutually exclusive from the other race categories.
Source: Oklahoma Vital Statistics

Variation also exists among maternal age for preterm births. While many other indicators follow a bell curve which indicates a normal distribution, preterm births by maternal age follow a well curve, represented by higher frequencies at each end of the spectrum and lower frequencies toward the center. Mothers aged 25-29 have the lowest preterm birth rate at 12.8%, followed closely by mothers aged 20-24 at 12.9%. The oldest mothers, aged 45 and over, have the highest preterm birth rate at 30.3%, followed by the youngest mothers, aged 10-14, at 19.2% (Figure 40).

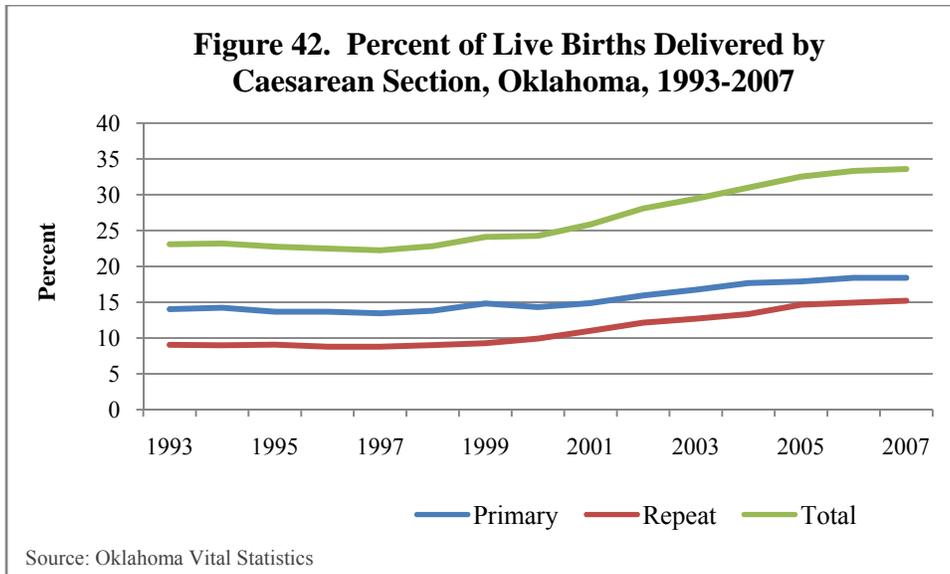


Of those births delivered preterm, the majority of increase has been in the later preterm category, which is considered 34-36 completed weeks of gestation. Over the past 15 years late preterm births increased 41.1% from 6.96% of all births in 1993 to 9.82% in 2007 (Figure 41). This compares to an increase in very preterm births by 29.5% and to moderate preterm births by 17.8% over the same time frame. Over the past five years the preterm birth rate increased 6.7% from 9.19% in 2003 to 9.82% in 2007.

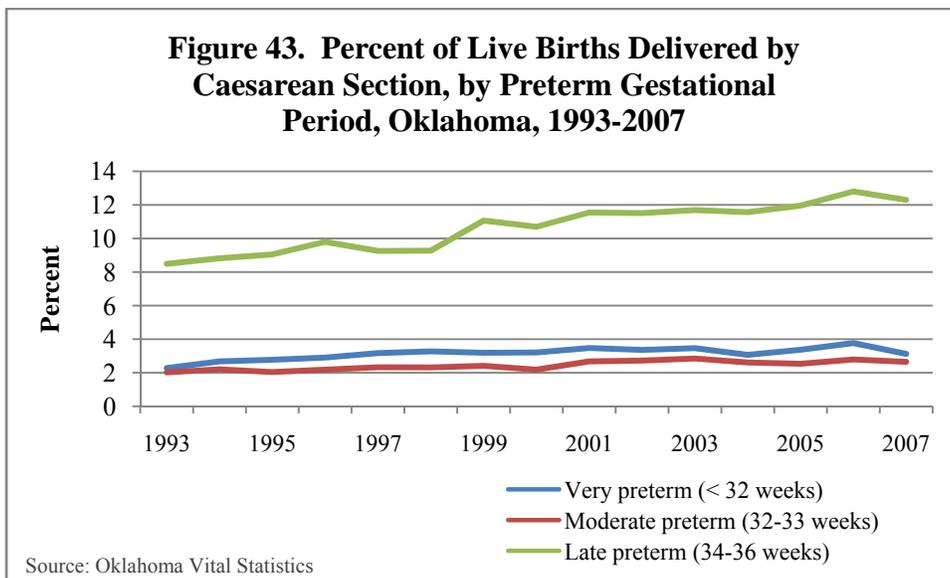


- **Caesarean Deliveries**

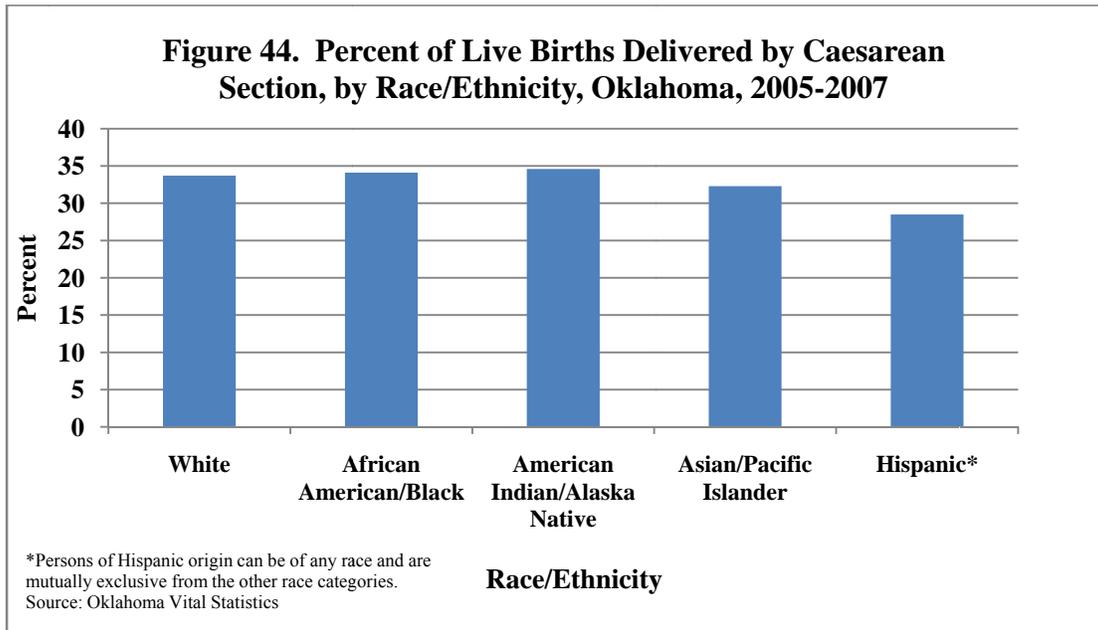
A caesarean delivery, or c-section, is a surgical procedure generally reserved as an alternative delivery method when health risks to the mother or fetus are present. However, concern is rising over elective caesarean deliveries, which are c-sections or inductions of labor that are done more out of convenience for the patient or doctor than from medical necessity. Of concern are the risks to the mother such as increased chances of infection, excessive bleeding, blood clots, and a longer hospital stay. Another concern is the financial burden that medically unnecessary procedures place on the health care system. Data from the Oklahoma Hospital Association show that the average charge for an uncomplicated c-section delivery in 2007 was \$11,002 with an average length of stay of 3 days. This compares to \$6,867 and 2 days for a vaginal delivery without complications. For c-sections with complications the costs were an average of \$13,854 and length of stay of 3.7 days. A vaginal delivery with complications was \$9,325 with a stay of 2.6 days, substantially lower than an uncomplicated c-section (Oklahoma Hospital Association, 2009). Oklahoma has seen a significant increase in the number of caesarean deliveries over the last 15 years, increasing 45.5% from 23.1% in 1993 to 33.6% in 2007 (Figure 42). While the majority of these deliveries are primary c-sections, the number and percent of deliveries that are repeat c-sections have seen the most growth with a 67.7% increase in the last 15 years and a 19.7% increase from 2003-2007. The growth in repeat c-section deliveries is likely due to the major insurer of physicians in Oklahoma, Physician Liability Insurance Company (PLICO), not providing coverage for vaginal birth after c-section (VBAC).



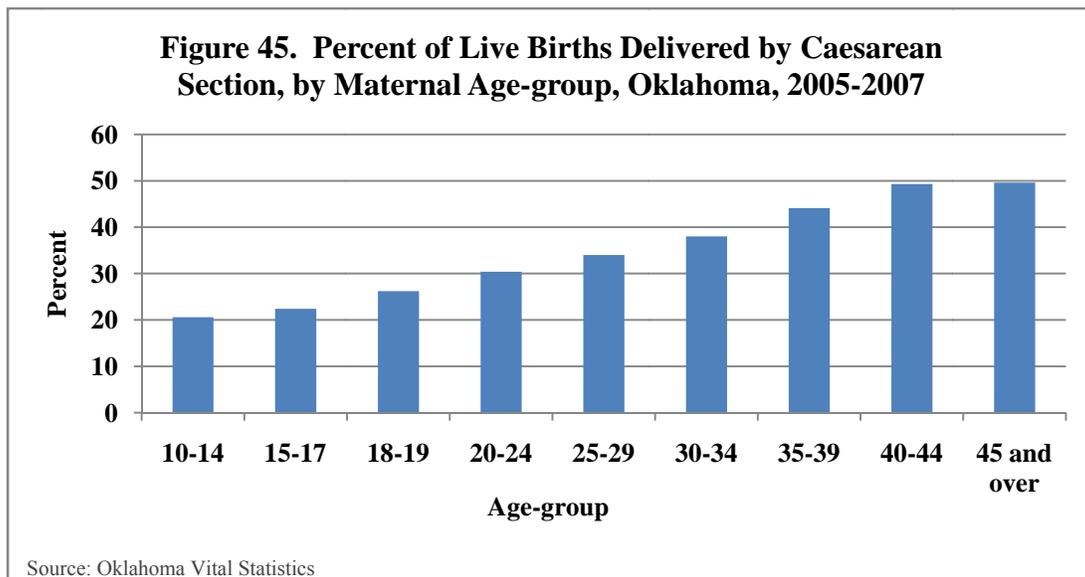
The last 15 years have seen a significant increase in the percent of c-sections that are performed prior to 37 weeks completed gestation. The percent of c-sections performed from 1993-2007, that were during the very preterm (less than 32 weeks) and moderate preterm (32-33 weeks) gestation periods have increased modestly. During this same time-frame the percent of c-sections that were performed during the late preterm gestation period (34-36 weeks) has increased 44.9% from 8.5% in 1993 to 12.3% in 2007 (Figure 43).



There was racial variation in the percentage of live births delivered by c-section in Oklahoma. At least a third of births to American Indian/Alaska Natives, African American/Blacks, and whites are delivered by c-section at 34.6%, 34.1%, and 33.7%, respectively (Figure 44). Only slightly lower are Asian/Pacific Islanders at 32.3% and Hispanics at 28.5%. All racial and ethnic groups have seen increases in c-section deliveries since 1993.

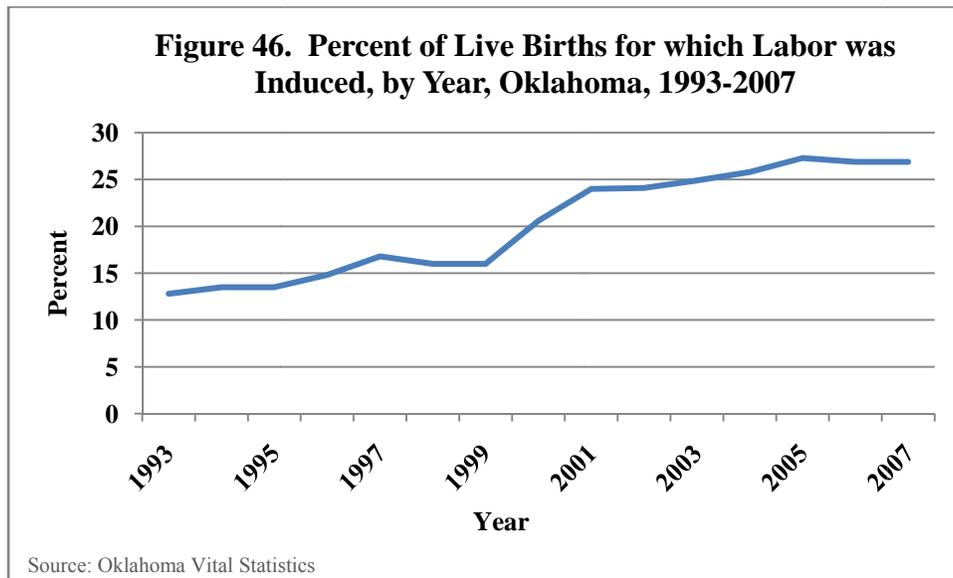


Significant variation is seen by maternal age for births delivered by c-section. There appears to be a strong correlation that as age increases so does the likelihood of having a c-section as evidenced by the rate of 49.6% for mothers aged 45 and over, indicating a 2.4 times higher rate than mothers aged 10-14 at 20.6% (Figure 45).



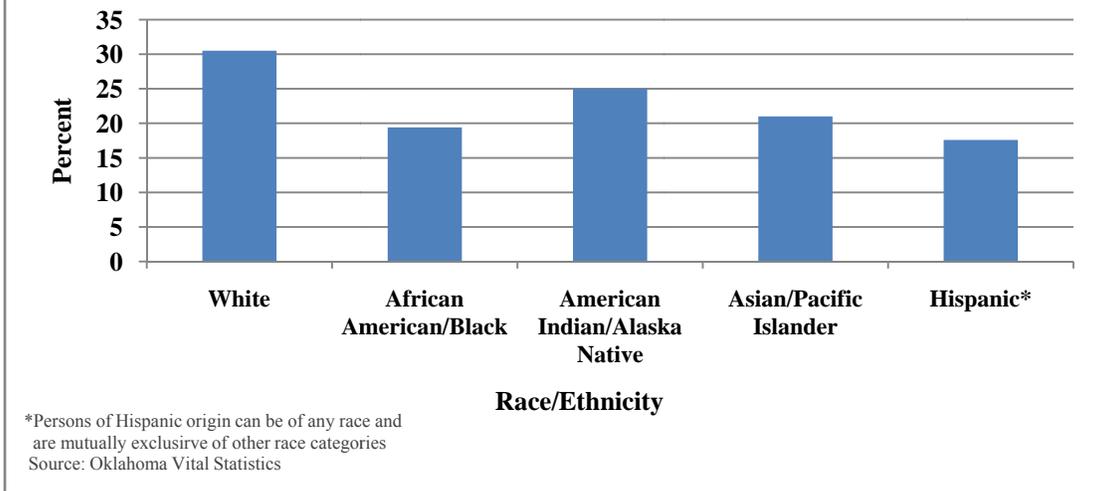
- **Inductions**

Induction of labor is the method of bringing on or inducing labor using medications or other methods versus allowing the labor to occur naturally. When maternal complications are present, such as diabetes or high blood pressure, induction of labor may be performed to avoid further complications with the delivery or to reduce potential harm to the mother or fetus. While there are risks involved with labor induction, when medically indicated the benefits of induction often outweigh the risks. Over the last 15 years Oklahoma has seen a significant increase in the percent of births where labor was induced, increasing from 12.8% of all births in 1993 to 26.9% of all births in 2007, representing a 110% increase. Oklahoma's induction rate of 270.5 per 1,000 live births from 2005-2007, was 20% higher than the national average of 225.3 per 1,000 live births (Figure 46).



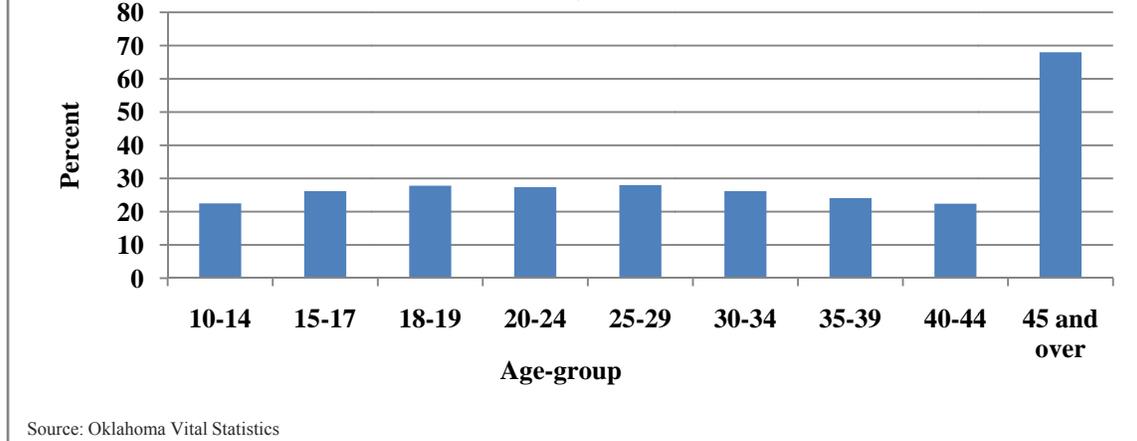
Significant differences were noted among race and ethnic groups for the percent of births that were induced (Figure 47). White mothers had the highest rate of inductions at 30.5%, followed by American Indian/Alaska Natives at 25%, and Asian/Pacific Islanders at 21%. African American/Black and Hispanic mothers had the lowest induction rates at 19.4% and 17.6%, respectively.

Figure 47. Percent of Live Births for which Labor was Induced, by Race/Ethnicity, Oklahoma, 2005-2007



Differences were also observed for inductions when examined by maternal age-groups. While less than six percentage points separated mothers aged 10-44, mothers aged 45 and over were more than twice as likely as younger mothers to have labor induced at 68% of all births compared to the high of 28% for mothers aged 25-29 (Figure 48).

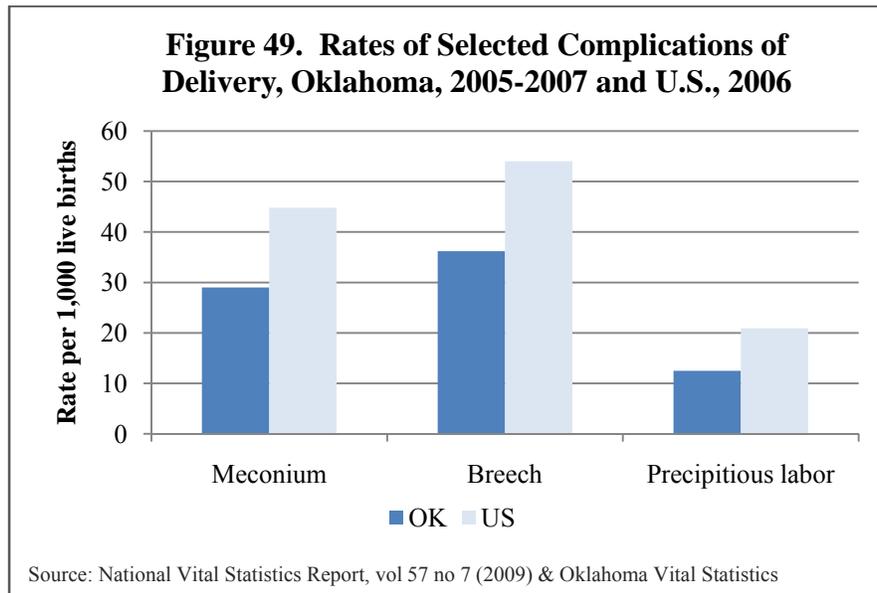
Figure 48. Percent of Live Births for which Labor was Induced, by Maternal Age-group, Oklahoma, 2005-2007



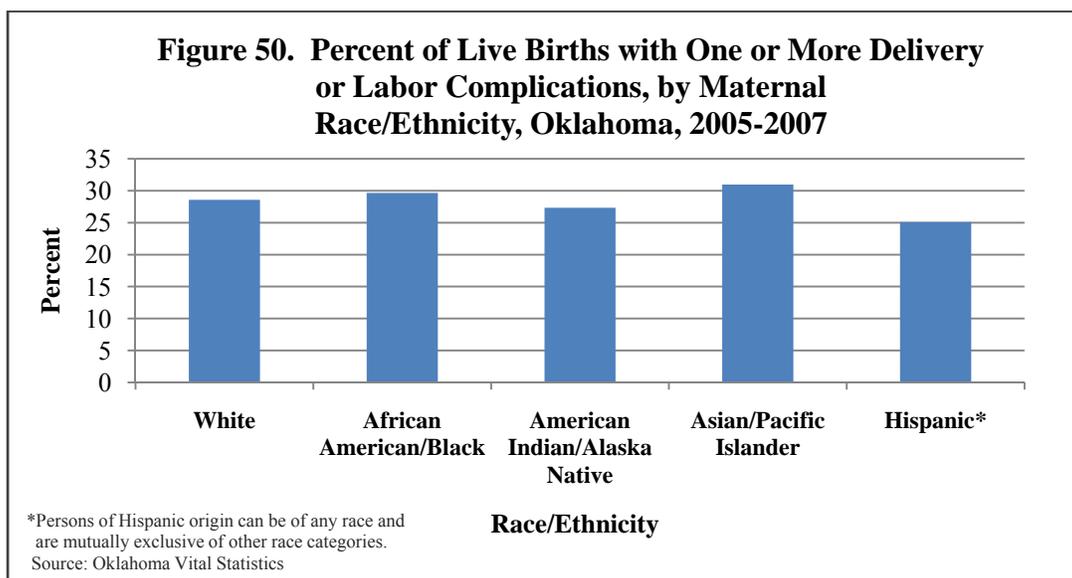
- **Delivery Complications**

Most labor and deliveries occur without any complications. However, sometimes conditions arise that can be anticipated and treated by providers, while other times conditions appear suddenly and unexpectedly. There are three complications of labor and delivery that are reported on both 1989 and 2003 revisions of the U.S. Standard Certificate of Live Birth and are therefore comparable from year to year and between populations. They are meconium moderate/heavy,

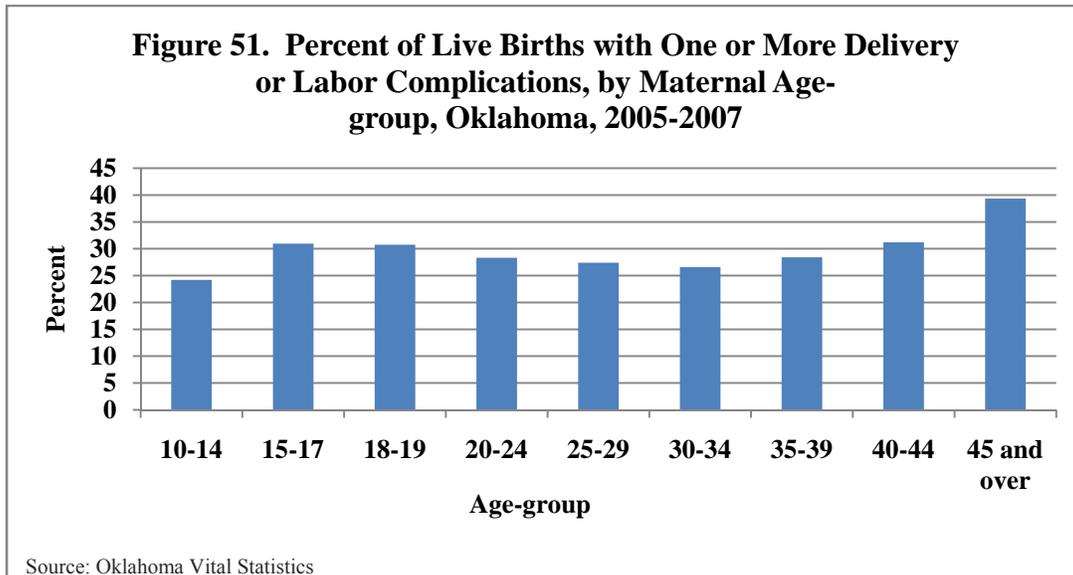
breech/malpresentation, and precipitous labor (Figure 49). Oklahoma was significantly lower than the national average for all three complications at 29.0 vs. 44.8 per 1,000 live births for meconium, 36.2 vs. 54.0 per 1,000 live births for breech/malpresentation, and 12.5 vs. 20.9 for precipitous labor. Other complications with substantially higher rates in Oklahoma were “other complications” at 140.6 per 1,000 live births, followed by fetal distress at 34.9, cephalopelvic disproportion at 16.2, dysfunctional labor at 11.7, and PROM at 16.8.



Racial and ethnic variations exist for the presence of delivery complications (Figure 50). Asian/Pacific Islanders had the highest percent of births with at least one delivery complication present at 31.0%, followed by African American/Blacks at 29.7%, whites at 28.6%, American Indian/Alaska Natives at 27.3%, and Hispanics at 25.1%.



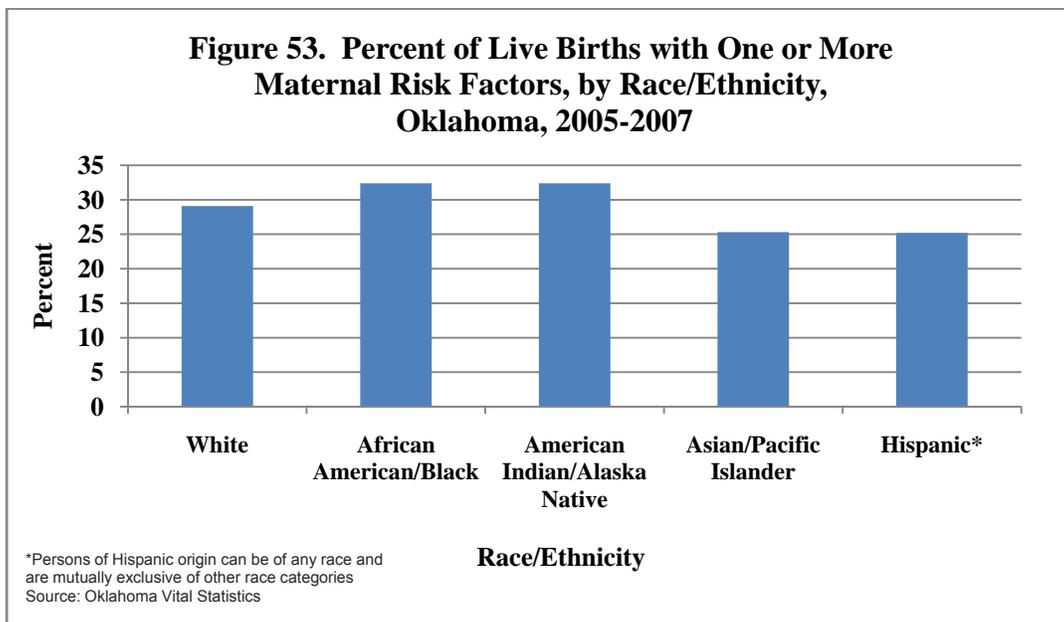
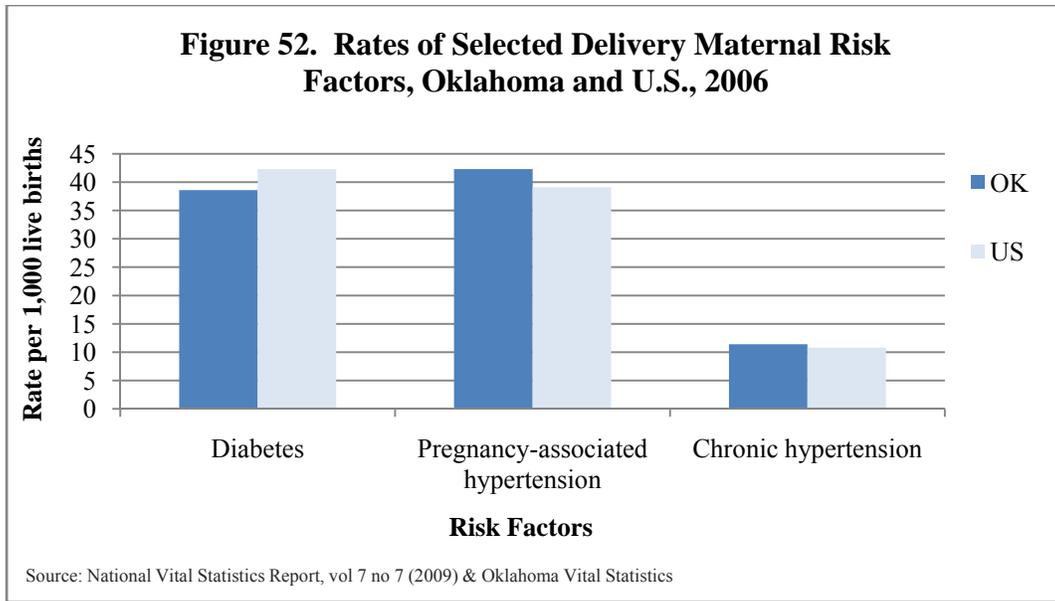
Variations exist for delivery complications among maternal age-groups as well (Figure 51). Mothers aged 10-14, notwithstanding, the risk for delivery complications is greater at either end of the age spectrum with mothers aged 45 and over having the highest percent of complications at 39.4%, followed by mothers aged 15-17 at 31.0%, mothers aged 18-19 at 30.7%, and mothers aged 40-44 at 31.2%.



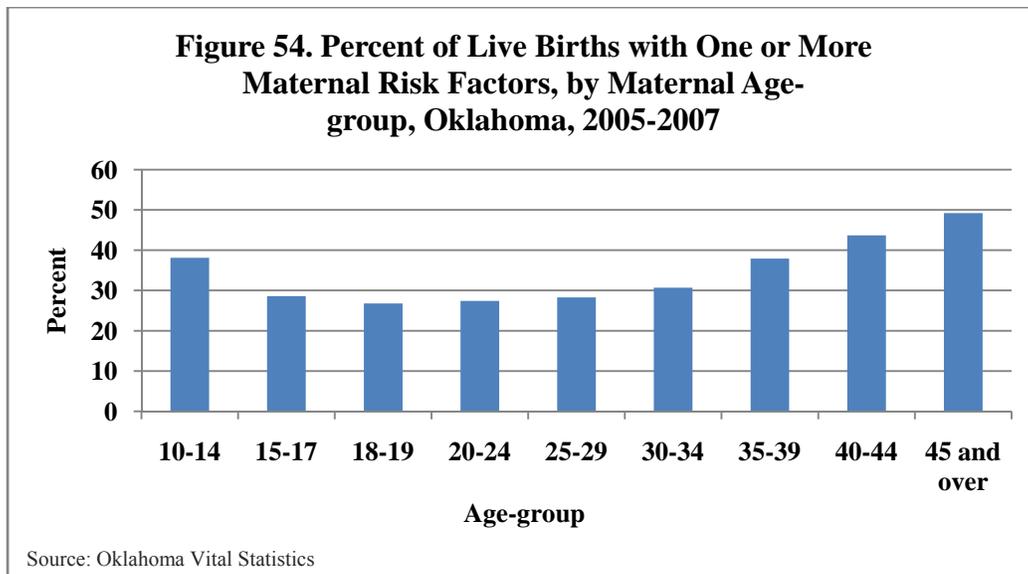
Morbidity

Maternal risk factors are an important public health concern due to their association with pregnancy complications and poor birth outcomes. Diabetes, chronic hypertension, and pregnancy associated hypertension were selected based on the comparable reporting for the nation (Figure 52). The Oklahoma 2006 rate of diabetes per 1,000 live births during pregnancy was lower than the U.S. rate for 2006, at 38.6 and 42.3 per 1,000 live births, respectively. However, Oklahoma rates for pregnancy associated hypertension at 42.3 and chronic hypertension at 11.4 were both higher than the U.S. rate of 39.1 and 10.8, respectively. Other risk factors with relatively high rates were “other risk factors” at 185.3 per 1,000 live births, anemia at 16.2, and previous preterm birth at 13.7.

Variation exists among racial and ethnic groups for the presence of maternal risk factors (Figure 53). African American/Black mothers and American Indian/Alaska Native mothers had the highest percentage of live births with one or more maternal risk factors present during pregnancy at 32.4% each, followed by whites at 29.1%. Hispanics and Asian/Pacific Islanders had the lowest percentage of live births with one or more maternal risk factors at 25.2% and 25.3%, respectively.



Disparities exist among maternal age groups for the presence of maternal risk factors (Figure 54). Maternal risk factors are more prevalent among the oldest mothers with approximately half (49.2%) of mothers aged 45 and over and 43.7% of mothers aged 40-44 having one or more maternal risk factors during their pregnancy. Mothers aged 10-14 and 35-39 had relatively high percentages of live births with one or more maternal risk factors at 38.1% and 37.9%, respectively.



A STD during pregnancy can cause serious complications for both the mother and the newborn. In 2007, estimates showed that the numbers of pregnant females in the U.S. infected with a STD were as follows: bacterial vaginosis 1,080,000; herpes simplex virus 2,880,000; chlamydia 100,000; trichomoniasis 124,000; gonorrhea 13,200; hepatitis B 16,000; HIV 6,400; and, syphilis <1,000 (Centers for Disease Control and Prevention 2007).

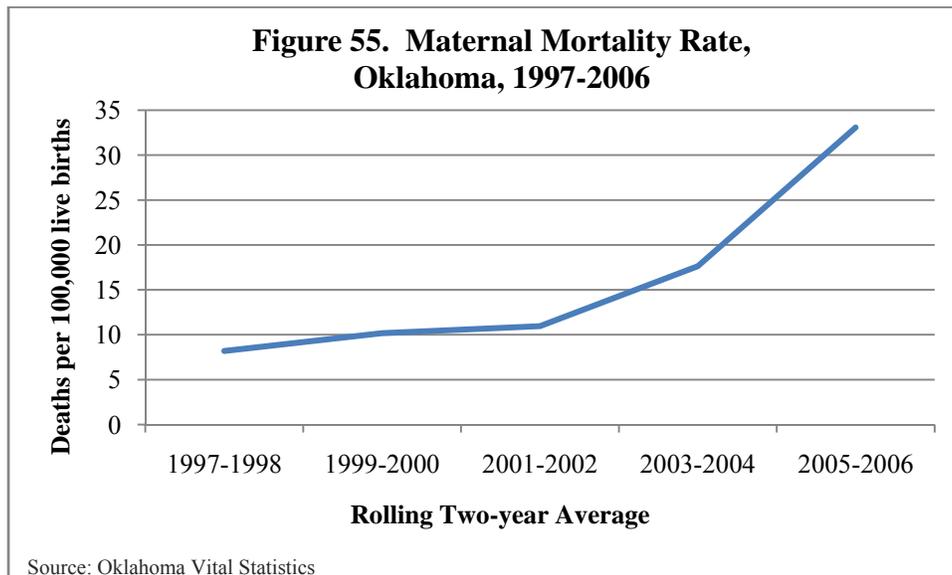
Left untreated an infection could be the cause of early onset of labor, PROM, and uterine infection after delivery. The damaging effects STDs may have upon infants include stillbirth, low birth weight, conjunctivitis (eye infection), pneumonia, neonatal sepsis, neurologic damage, blindness, deafness, acute hepatitis, meningitis, chronic liver disease, and cirrhosis. Most of these health issues are considered to be preventable and easily treatable if the STD is diagnosed early during routine prenatal care (Centers for Disease Control and Prevention 2007).

Prevalence rates for maternal infections among pregnant females are not readily available for all STDs; however, OK PRAMS and birth certificate records do collect data on kidney and bladder (or urinary tract infections) and genital herpes infections for females who recently delivered a live birth. According to 2005-2008 OK PRAMS data, 26.4% (95% CI: 24.8%, 28.1%) of females had a urinary tract infection or kidney infection during their most recent pregnancy. And 0.75% (95% CI: 0.49%, 1.15%) or 7.5 per 1,000 live births (95% CI: 4.9, 11.5) had a genital herpes infection reported on their infant's birth certificate (data not shown).

Mortality

Maternal mortality can occur when a female experiences sudden and unexpected complications during pregnancy, childbirth, and just after delivery. Maternal mortality rates are expressed as the number of maternal deaths per 100,000 live births. The World Health Organization (WHO) defines a maternal death as "the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and the site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes" (Say, Souza, & Pattinson, 2009).

In 2004, Oklahoma Vital Records began collecting pregnancy information on the death certificate to help assist in identifying obstetric or pregnancy-related deaths. As a result, the number and rate of maternal deaths increased significantly in 2005 and 2006, although increases were already being seen from 2002-2004. To help account for these differences in Oklahoma (Table 18) represents seven years of data from 1999 forward using only International Classification of Diseases (ICD-10) classifications. As of 2005, only 31 states were utilizing the revised death certificate with the pregnancy check box option, while most other states use a similar pregnancy status question. Also, maternal mortality data for the U.S. do not include in its rate calculation the following causes of death: ICD O96-O97 maternal causes more than 42 days after delivery or termination of pregnancy, while Oklahoma's rate does. Therefore, a rate comparison between Oklahoma and the U.S. will not be given. In addition, to ameliorate the variability as a result of these changes, two-year averages were used to display maternal mortality rates over time (Figure 55). Over the last ten years the maternal mortality rate (MMR) in Oklahoma has experienced significant increases, from 6.2 in 1997 to 25.9 in 2006 (Figure 55). The 2006 MMR of 25.9 deaths per 100,000 live births in Oklahoma was nearly twice the 2006 U.S. average of 13.3 deaths per 100,000 live births.



The 1999-2006 MMR in Oklahoma was 19.4 deaths per 100,000 births (Table 18). The leading cause of death was “Other direct obstetric causes” and includes specific causes such as eclampsia and pre-eclampsia, hemorrhage, and obstetrical tetanus and embolism. Due to the small number of deaths in this category when stratified by race, only rates for whites and African American/Blacks are presented. The MMR of 37.2 deaths per 100,000 live births for African American/Blacks in Oklahoma was more than twice the rate of 17.8 for whites.

Cause of death (based on ICD-10)	Number			Rate		
	All Races	White	Black	All Races	White	Black
Maternal causes (A34,O00-O95,O98-O99)	79	56	14	19.4	17.8	37.2
Pregnancy with abortive outcome (O00-O07)	3	2	-	0.7	*	*
Ectopic pregnancy (O00)	1	1	-	*	*	*
Spontaneous abortion (O03)	-	-	-	*	*	*
Medical abortion (O04)	-	-	-	*	*	*
Other abortion (O05)	-	-	-	*	*	*
Other and unspecified pregnancy with abortive outcome (O01-O02,O06-O07)	2	1	-	*	*	*
Other direct obstetric causes (A34,O10-O92)	43	30	9	10.6	9.5	23.9
Eclampsia and pre-eclampsia (O11,O13-O16)	4	4	-	1.0	1.3	*
Hemorrhage of pregnancy and childbirth and placenta previa (O20,O44-O46,O67,O72)	4	3	-	1.0	1.0	*
Complications predominately related to the puerperium (A34,O85-O92)	12	7	3	3.0	2.2	8.0
Obstetrical tetanus (A34)	-	-	-	*	*	*
Obstetric embolism (O88)	8	5	2	2.0	1.6	*
Other complications predominately related to the puerperium (O85-O87,O89-O92)	4	2	1	1.0	*	*
All other direct obstetric causes (O10,O12,O21-O43,O47-O66,O68-O71,O73-O75)	21	15	6	5.2	4.8	16.0
Obstetric death of unspecified cause (O95)	5	4	-	1.2	1.3	*
Indirect obstetric causes (O98-O99)	25	17	5	6.2	5.4	13.3
Maternal causes more than 42 days after delivery or termination of pregnancy (O96-O97)	3	3	-	0.7	1.0	*
Death from any obstetric cause occurring more than 42 days but less than one year after delivery (O96)	3	3	-	0.7	1.0	*
Death from sequelae of direct obstetric causes (O97)	-	-	-	*	*	*
Rates are maternal deaths per 100,000 live births						
* Rates are suppressed when numerator is less than 3.						
- Quantity zero.						

After several years of inactivity, in 2009, MCH re-established the state level Maternal Mortality Review (MMR) Committee. The MMR Committee is comprised of individuals from varied organizations and occupations. The MMR Committee has met twice and has reviewed eight cases. Although pertinent and important data are being compiled with each review, it will likely take several years of data collection to get a more realistic picture of pregnancy related death issues in Oklahoma.

3. Infants

Access to Care

The statewide implementation in July 2010 of an electronic application for SoonerCare (eNB1) will add a newborn to its mother's existing SoonerCare case. This change will facilitate the newborn having full Medicaid eligibility before being discharged from the hospital. In SFY

2009, 33,228 infants born in Oklahoma had their deliveries paid through SoonerCare/Medicaid. This is an increase of 2.4% from SFY 2008. Medicaid deliveries represent approximately 61% of all deliveries in the state.

The American Academy of Pediatrics (AAP) recommends well child visits for all infants at or before one week of life, a visit at about two to four weeks of age and at two, four, six, nine, and twelve months of age (American Academy of Pediatrics , 2010). Information about who does and does not receive well child care in the first week of life, as well as during the two to four month period is available from PRAMS.

OK PRAMS data for 2006-2007, showed that 19.8% of infants with a hospital stay 48 hours or less were not seen by a health professional at one-week post delivery. For those who had not had a doctor visit at the one-week mark, 61.7% had a mother whose prenatal or delivery care was paid for by SoonerCare. One in four American Indian/Alaska Native mothers reported not receiving a one-week well visit, compared to one in five for white mothers and one in seven for African American/Black mothers. Among infants who were breastfed, even for a short amount of time, 18% did not receive a well baby visit by one week. The AAP recommends that all breastfeeding infants should be seen by a pediatrician or other health care professional at three to five days of age for examination and evaluation of breastfeeding. This early visit is critical to identify possible breastfeeding problems that may require more intensive evaluation of breastfeeding and possible intervention to correct problems and improve milk production and transfer (American Academy of Pediatrics , 2010).

According to OK PRAMS 2006-2007 data, 97.9% of infants have had a well child visit at two to six months of age. Only 2.1% of mothers reported no well baby visits at two to six months postpartum, and mothers who received assistance during pregnancy from SoonerCare were among those most likely to report no care (3.2% vs. 0.9%). Information on content of those visits or the quality of provider-patient-parent interaction is not readily available from any state sources.

- **Newborn Screening**

All newborns born in Oklahoma are screened through the Newborn Screening Program (NSP) for the disorders of phenylketonuria (PKU) and other amino acid disorders, congenital hypothyroidism, galactosemia, sickle cell disease, hemoglobinopathies, cystic fibrosis (CF), congenital adrenal hyperplasia (CAH), medium chain acyl-CoA dehydrogenase deficiency (MCAD) and other fatty acid disorders, and organic acid disorders. The number of disorders identified in calendar year (CY) 2009 included: PKU (2) and Hyperphe (2); Congenital Hypothyroidism (18); Classic Galactosemia (3); Sickle cell disease (5); hemoglobin disease, including SC disease, Sickle Beta Thalassemia, Sickle Beta Zero Thalassemia, CC disease (10); CF (14); CAH (3); Fatty acid disorders MCAD (9); Short-chain acyl-coenzyme A (CoA) dehydrogenase deficiency (SCAD) (3); Amino acid disorders (3); Organic Acid Disorders (5); hemoglobin C trait (111); and sickle cell trait (431). One hundred percent of newborns received short-term follow-up (STFU) services for diagnosis and 100% of affected newborns were referred to long-term follow-up (LTFU) for care coordination services. All cases of confirmed diagnosis for newborn screening disorders received genetic counseling.

For CY 2009, 542 of the sickle cell traits and hemoglobin C traits were referred for counseling and 53 families received counseling from a board certified genetic counselor. All newborns identified with an out-of-range CF screen were referred for genetic counseling (102 of the 110 received counseling).

Currently Oklahoma screening includes 53 of the 54 core disorders. The only disorder on the American College of Medical Genetics (ACMG) panel that is pending is Biotinidase.

- **Newborn Hearing**

Of the 54,753 Oklahoma births in calendar year (CY) 2008, 52,980 infants (96.8%) had a hearing screen prior to hospital discharge, while only 755 (1.4%) were not screened at any time. Of the infants screened, 2,607 (4.8%) were referred for diagnostic assessment for failing the hospital screen and 94 had confirmed hearing loss. Sixty (64%) of those infants that failed the screening were diagnosed with hearing loss and amplified by the first month of life. Due to the presence of hearing "risk indicators," 2,607 infants who passed screening at birth were later referred for additional hearing screening when they reached six months of age. At least 80 of the infants born in 2008 and diagnosed with a hearing loss were enrolled in one of Oklahoma's 0-3 early intervention programs such as SoonerStart.

Breastfeeding

Breastfeeding at six months has the potential to prevent and reduce risk for many childhood and chronic illnesses, such as ear infections, respiratory illnesses, rotaviruses, asthma, and some childhood cancers. In Oklahoma, the number of new mothers attempting breastfeeding increased to 74.2% in 2007 from 68.7% in 2000. The Healthy People 2010 objective for breastfeeding initiation is 75%, a goal Oklahoma has now exceeded as of 2008 (79%). However, duration rates for Oklahoma mothers have not changed since 2000, indicating an issue in the support and continuation of breastfeeding for mothers in the state.

The Healthy People 2010 goal for breastfeeding at six months is 50%. In Oklahoma, TOTS 2007 data shows that 31.5% of infants are breastfed for six months, and it is unknown how many of those were exclusively breastfed to that point. Many of the mothers in Oklahoma who begin breastfeeding stop in the first four to eight weeks postpartum.

According to 2007 OK PRAMS data, only 55.2% of mothers nursed their infants at four weeks postpartum, and by eight weeks the number dropped to 44%, falling short of the six month goal by four months. Mothers most likely to breastfeed for at least four weeks were white, Hispanic, 25 years or older, had some high school education, and/or were married. The top three reasons for stopping, as reported by mothers who attempted breastfeeding, were: not producing enough milk for baby (45.3%), breastmilk alone did not satisfy baby (38.2%), and the baby had difficulty nursing (31.2%). The categories were not exclusive; mothers could check more than one.

Table 19. Multivariate Logistic Regression Adjusted Odds Ratio for Exclusive Breastfeeding for Six Weeks or Longer, OK PRAMS, 2005-2007		
Predictors	Adjusted Odds Ratio	95% Confidence Interval
Doctor or other health professional gave advice		
No	1.33	1.05, 1.69
Yes (reference)	1.00	1.00, 1.00
Friend or family member gave advice		
No (reference)	1.00	1.00, 1.00
Yes	1.69	1.31, 2.17
Lactation consultant gave advice		
No (reference)	1.00	1.00, 1.00
Yes	1.48	1.15, 1.90
Enrolled in WIC during pregnancy		
No	1.28	0.99, 1.66
Yes (reference)	1.00	1.00, 1.00
Mother's age group		
<19 (reference)	1.00	1.00, 1.00
20-24	1.10	0.71, 1.73
25-29	2.42	1.52, 3.85
30-34	2.29	1.37, 3.81
35+	1.93	1.08, 3.43
Mother's education		
< High school (reference)	1.00	1.00, 1.00
>= High school	1.52	1.10, 2.10
Postpartum Smoking		
No	2.14	1.63, 2.80
Yes (reference)	1.00	1.00, 1.00

The issue of exclusive breastfeeding is also important. Exclusive breastfeeding in PRAMS is defined as feeding only breastmilk to an infant (no water, formula, sugar water, juice or baby food). The American Academy of Pediatrics recommends that all infants be exclusively breastfed for the first six months of life. In a recent study of OK PRAMS 2005-2007 data examining exclusive breastfeeding at six weeks postpartum, the following groups of mothers were least likely to breastfeed exclusively for six weeks or more: mothers who smoked postpartum, mothers 24 years of age and younger, and mothers with less than a high school education. Mothers or females who were enrolled in WIC were marginally less likely to exclusively breastfeed (Table 19). Mothers who did not breastfeed or did not breastfeed exclusively, even for a short time, were excluded from the study. The study found that advice or help with breastfeeding was most beneficial when received from a friend, a family member, or a lactation consultant. Help or advice from doctors or other health professionals was not associated with exclusive breastfeeding beyond six weeks in this study.

Secondhand Smoke

Secondhand smoke exposure has severe public health consequences. For infants, an increased risk of Sudden Infant Death Syndrome (SIDS), ear infections, bronchitis, and childhood asthma are all associated with exposure to secondhand smoke (U.S. Department of Health and Human Services, 2006). In Oklahoma, smoking rates continue to exceed the national averages, putting Oklahoma’s children at further risk. Healthy People 2010 set the target for the proportion of children regularly exposed to tobacco smoke in the home to ten percent or less.

According to OK PRAMS data from 2006-2007, 10.66% of infants are exposed to secondhand smoke on an average day (Table 20). Those infants most likely to be exposed to secondhand smoke had mothers who were white or American Indian/Alaska Native, non-Hispanic, less than 24 years of age, had less than a high school education, were unmarried, and/or had SoonerCare coverage for their prenatal or delivery care. The amount of exposure measured varies from 1-3 hours (8.28%) to more than 7 hours per day (1.73%).

Table 20. Infant Secondhand Smoke Exposure Levels by Maternal Demographics, OK PRAMS, 2006-2007

Maternal Characteristic	Exposure Levels to Tobacco Smoke							
	Never Exposed		Exposed 1-3 Hours per Day		Exposed 4-6 Hours per Day		Exposed 7 or More Hours per Day	
	Prevalence (%)	95%CI	Prevalence (%)	95%CI	Prevalence (%)	95%CI	Prevalence (%)	95%CI
Overall	89.34	87.49, 90.94	8.28	6.86, 9.95	0.66	0.34, 1.28	1.73	1.13, 2.65
Race								
White	88.90	86.75, 90.74	8.20	6.63, 10.11	0.82	0.41, 1.63	2.07	1.33, 3.23
African American/Black	94.46	89.15, 97.25	5.19	2.47, 10.61	0.11	0.02, 0.63	0.24	0.09, 0.66
American Indian/Alaska Native	85.92	78.85, 90.90	13.13	8.31, 20.13	0.05	0.01, 0.28	0.90	0.17, 4.58
Other	99.52	97.79, 99.90	0.09	0.03, 0.29	0.40	0.06, 2.43	0.00	
Ethnicity								
Non-Hispanic	88.15	86.09, 89.94	9.47	7.86, 11.37	0.66	0.32, 1.33	1.72	1.10, 2.70
Hispanic	97.39	92.89, 99.07	0.16	0.06, 0.41	0.67	0.10, 4.57	1.77	0.47, 6.45

Table 20. (Cont'd) Infant Secondhand Smoke Exposure Levels by Maternal Demographics, OK PRAMS, 2006-2007

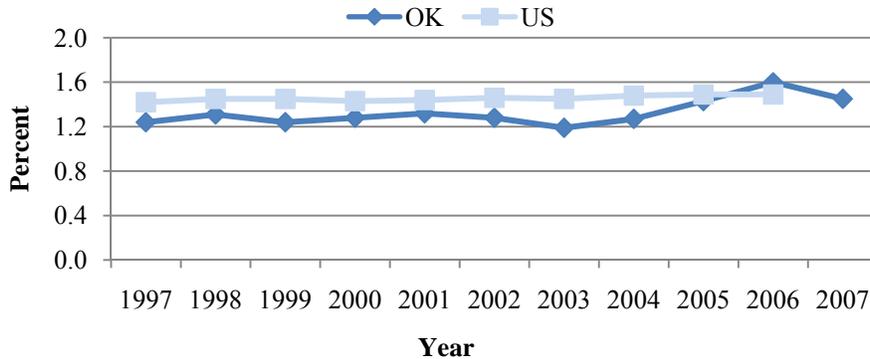
Exposure Levels to Tobacco Smoke								
Maternal Characteristic	Never Exposed		Exposed 1-3 Hours per Day		Exposed 4-6 Hours per Day		Exposed 7 or More Hours per Day	
	Prevalence (%)	95%CI	Prevalence (%)	95%CI	Prevalence (%)	95%CI	Prevalence (%)	95%CI
Age								
<20	82.17	74.88, 87.70	12.80	8.13, 19.58	1.54	0.46, 5.03	3.48	1.42, 8.26
20-24	87.02	83.32, 89.99	9.93	7.34, 13.29	0.69	0.20, 2.30	2.37	1.25, 4.47
25-29	91.16	87.89, 93.61	7.20	5.02, 10.22	0.54	0.14, 2.01	1.11	0.41, 2.97
30-34	93.56	89.71, 96.03	5.33	3.09, 9.05	0.46	0.08, 2.47	0.65	0.17, 2.43
35+	94.38	88.69, 97.29	4.70	2.09, 10.23	0.01	0.00, 0.04	0.91	0.16, 5.06
Education								
<High School	96.87	89.58, 99.11	2.49	0.53, 10.92	0.00		0.65	0.21, 2.02
High School	81.04	73.24, 86.96	12.97	8.13, 20.06	0.71	0.12, 3.99	5.28	2.46, 11.01
>High School	90.69	88.77, 92.30	7.44	6.00, 9.20	0.70	0.34, 1.47	1.17	0.67, 2.02
Marital Status								
Married	92.47	90.47, 94.08	5.78	4.39, 7.57	0.39	0.14, 1.11	1.36	0.75, 2.47
Other	84.57	80.94, 87.62	12.08	9.37, 15.43	1.06	0.45, 2.49	2.29	1.24, 4.18
SoonerCare								
Yes	85.06	82.24, 87.50	11.51	9.34, 14.09	1.11	0.57, 2.15	2.32	1.44, 3.74
No	95.61	93.60, 97.01	3.49	2.29, 5.29	0.01	0.00, 0.01	0.90	0.35, 2.28

Morbidity

- **Very Low Birth Weight (VLBW)**

A VLBW infant is an infant weighing less than 1500 grams at birth. Reducing the number of births that are VLBW is an important step in reducing the infant mortality rate, as VLBW infants have a greater risk of not surviving their first year of life compared to low birth weight (LBW) or normal birth weight infants. The percentage of VLBW infants in Oklahoma and the U.S. changed minimally over the past decade; however, there was a slight uptick in VLBW births in Oklahoma in 2005, 2006, and 2007 (Figure 56). In 2007, 3.5% of births to African American/Black mothers were VLBW making them more than twice as likely as mothers of any race to have a VLBW infant. Asian/Pacific Island mothers had the lowest percent of VLBW births at 0.98%.

Figure 56. Percent of Very Low Birth Weight Infants (<1500 grams) Among All Live Births, Oklahoma, 1997-2007, and U.S., 1997-2006

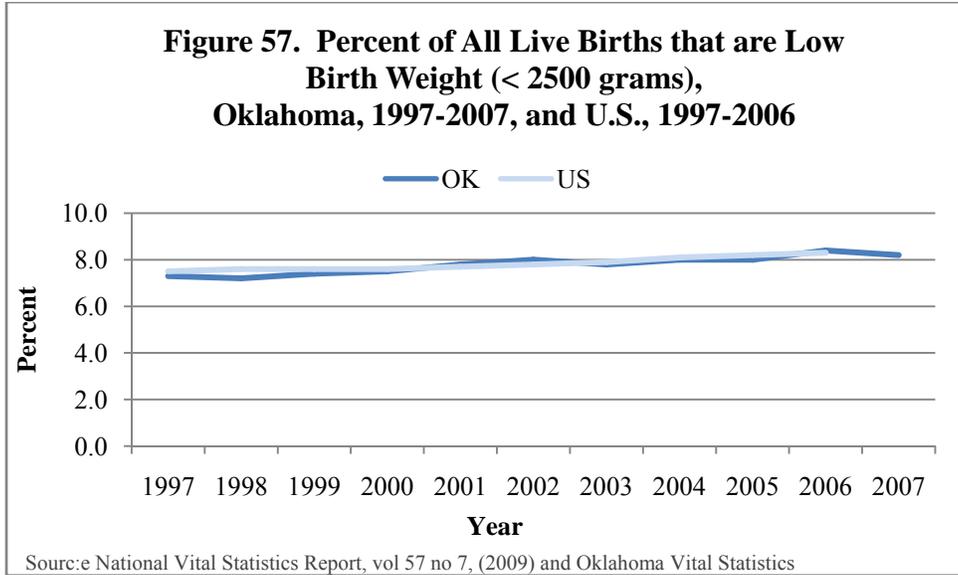


Source: National Vital Statistics Report, vol 57 no 7 (2009) and Oklahoma Vital Statistics

- **Low Birth Weight (LBW)**

Infants born weighing less than 2500 grams are considered LBW. LBW infants are at a higher risk than normal weight babies for experiencing health and developmental problems. LBW infants are born either preterm (less than 37 completed weeks of gestation) or small for gestational age (SGA - less than 10th percentile for gestational age), or both. Some risk factors for low birth weight are late entry into prenatal care, limited access to prenatal care, race, ethnicity, smoking, and age. Improvements in medical care have increased the survivability of very low birth weight infants that would previously have been fetal losses, but it is difficult to assess this overall contribution to low birth weight live births.

Over the last 15 years both Oklahoma and the U.S. have experienced an increase in LBW rates (Figure 57). Oklahoma increased 25% from 6.7% in 1992 to 8.4% in 2006. The U.S. increased 16.9% from 7.1% in 1992 to 8.3% in 2006. Part of the increase is due to the rising number of multiple births each year as more than half of multiple birth infants are delivered at a low birth weight. However, when LBW rates are examined among singleton births only, a significant increase is still observed for this time frame, rising from 5.6% in 1992 to 6.6% in 2006, a 17.9% increase (data not shown).



From 1998 to 2007, all racial/ethnic groups, except for Asian/Pacific Islanders and those of Hispanic origin, have seen an increase in the percentage of low birth weight deliveries (Table 21). Mothers of Hispanic origin have basically remained unchanged in their low birth weight rates. In 2007, African American/Blacks were almost twice (1.8 times) as likely as mothers of any other racial group to have a low birth weight infant.

Table 21. Percent of Live Births that are Low Birth Weight (<2500 grams), by Race/Ethnicity, Oklahoma, 1998-2007

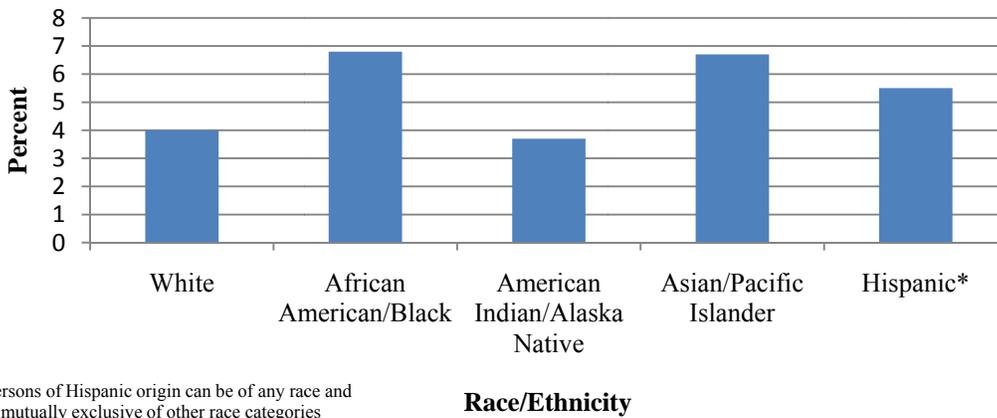
Race/Ethnicity	Percent by Year									
	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
White	6.7	7.2	7	7.4	7.5	7.5	7.8	7.6	7.9	7.9
Black or African American	12.5	11.9	13.2	13.7	13.9	13.7	13	14.2	15.4	14.7
American Indian/ Alaska Native	6.4	6.1	6.2	6.7	6.6	6.3	6.8	7	7.2	7.4
Asian/Pacific Islander	6.8	5.7	7.2	8.5	8	6.5	7	7.2	8.3	6.1
Hispanic*	6.1	5.9	6.3	5.9	7	5.9	6.6	6.7	6.6	6.1

*Persons of Hispanic origin can be of any race and are mutually exclusive of other race categories
Source: Oklahoma Vital Statistics

- Congenital Anomalies (Birth defects)**

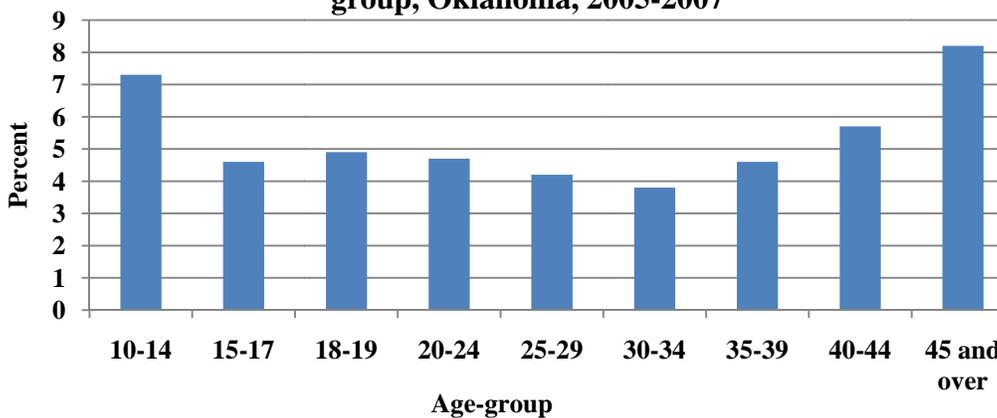
A congenital anomaly indicates that a health problem is present in the infant at birth. While some anomalies have been linked with environmental and genetic factors, the cause of most congenital anomalies remains largely unknown. Racial and ethnic disparities exist in Oklahoma for the presence of congenital anomalies (Figure 58). From 2005-2007, African American/Blacks had the highest rate of births with at least one congenital anomaly present at 6.8%, followed by Asian/Pacific Islanders at 6.7%, and Hispanics at 5.5%. Whites and American Indian/Alaska Natives were only slightly lower at 4.0% and 3.7%, respectively.

Figure 58. Percent of Live Births with One or More Congenital Anomalies, by Maternal Race/Ethnicity, Oklahoma, 2005-2007



Disparities also exist among maternal age-groups for the presence of at least one congenital anomaly (Figure 59). The following frequency distribution reflects a well curve, a bimodal distribution that is a probability distribution with two distinct peaks, or modes, instead of a bell curve. This well curve indicates increased risks of congenital anomalies for the youngest mothers and the oldest mothers. Mothers aged 30-34 had the lowest percent of births with an anomaly at 3.8%, followed by 25-29 year olds at 4.2%. Mothers aged 45 and over and aged 10-14 had at least one congenital anomaly in 8.2% and 7.3% of births, respectively, nearly twice that of all other maternal age-groups.

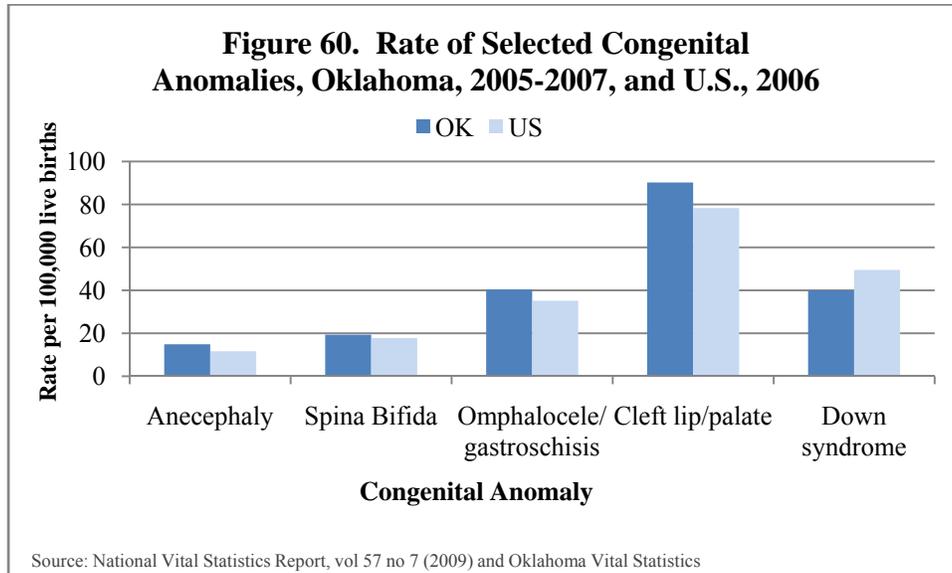
Figure 59. Percent of Live Births with One or More Congenital Anomalies, by Maternal Age-group, Oklahoma, 2005-2007



Source: Oklahoma Vital Statistics

There are five congenital anomalies that are reported on both the revised and unrevised U.S. Standard Certificate of Live Birth and are therefore comparable from year to year and between

populations. These five congenital anomalies are anencephaly, meningomyelocele/spina bifida, cleft lip/palate, Down Syndrome, and omphalocele/gastroschisis. Oklahoma is lower in only one category, Down Syndrome, at a rate of 40.0 per 100,000 live births compared with 49.5 for the U.S. average (Figure 60). Oklahoma has a higher rate than the U.S. for the four remaining categories. Other anomalies with a substantially high rate are “other congenital anomalies” at 352.8 per 100,000 live births; “other musculoskeletal” at 138.1; “other urogenital” at 104.5; and polydactyly, club foot, and heart malformations at 65.9, 64.1, and, 55.4 per 100,000 live births, respectively.



Mortality

- **Infant Mortality**

Infant mortality is considered a principle measure of health for a population. Due to Oklahoma’s high infant mortality rate, the OSDH Commissioner’s Action Team on Reduction of Infant Mortality was convened May 2007 with the overarching goal of reducing infant mortality in Oklahoma. This effort has expanded over the past couple of years to a statewide initiative engaging partners at the state, regional, and community levels.

Studies have shown that placing infants in the supine (back) position for sleep can reduce the risk of SIDS. SIDS is the third leading cause of infant death among Oklahoma’s infants (congenital malformations, deformations, and abnormalities are the leading cause and disorders related to short gestation and low birth weight are the second leading cause). The percentage of infants being placed on their back for most sleep episodes, has increased from 2000-2007, increasing from 55.7% to 62.7% (Figure 61). The Healthy People 2010 Objective is 70%.

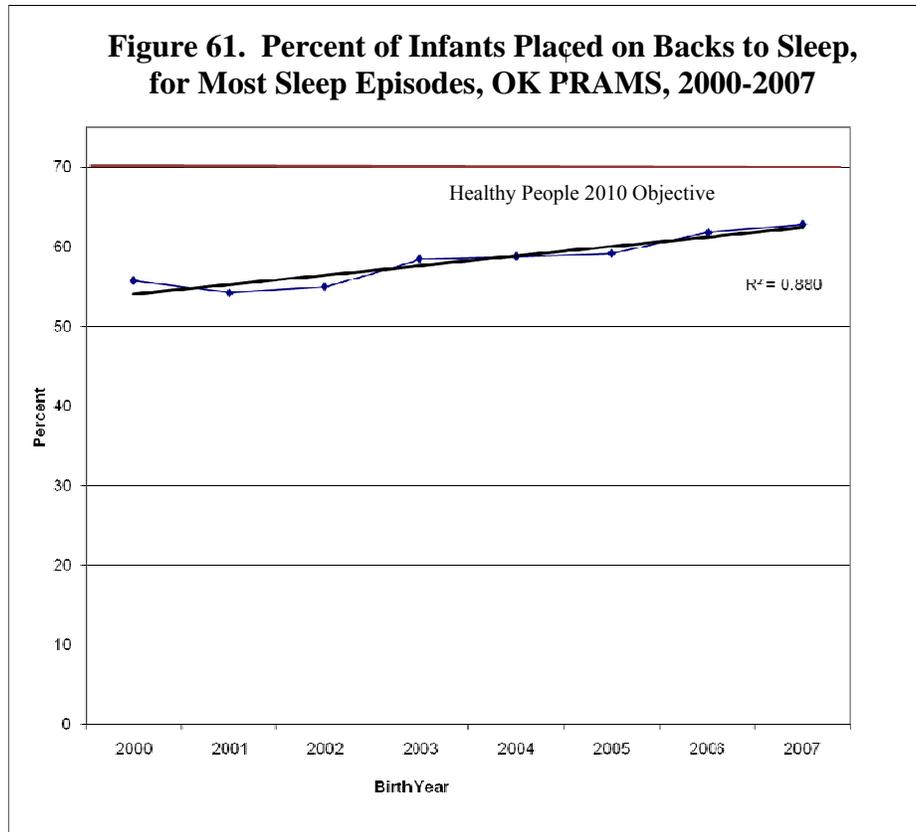
Mothers in Oklahoma least likely to place their infants on their backs for sleep were African American/Black mothers and mothers with more than one child. Mothers, who were older, had more education or were married, were among those most likely to place their infants on their backs for sleep most of the time (PRAMS Working Group, 2007).

Other factors should also be considered when reviewing safe sleep practices: exposure to second hand (and possibly third hand) tobacco smoke; the condition, location, and composition of the sleep environment (firmness of mattress, place in the house, presence of pillows, blankets, temperature, etc.); as well as family co-sleeping and bed sharing practices. Currently no state data are systematically collected on these topics. Data from infant death scene investigations, the Child Death Review Board, and information collected by the two Fetal and Infant Mortality Review projects (Tulsa County and Oklahoma County) provide insight into infant deaths related to sleep. According to the Oklahoma County Fetal and Infant Mortality Review (FIMR) annual report, the issue of safe sleep is far reaching and extends beyond the risk for SIDS. Unsafe sleep circumstances and conditions for infants who have died “appear to outnumber SIDS cases by at least 50%” (Oklahoma Child Death Review Board, 2009).

According to The Oklahoma Child Death Review Board 2008 Annual Report, a total of 78 deaths were reviewed related to unsafe sleeping practices. Of the 78 deaths reviewed, 57 were ruled unknown manner of death, with the pathologist stating unsafe sleep conditions might have contributed to the death, 15 deaths were classified as SIDS, and six were ruled “accidental.” Although 39 infants had an unknown sleeping position, 15 were sleeping on their stomachs, three on their sides, and 10 on their backs.

Over half of the sleep related deaths were white (56.4%), one in five were American Indian (20.5%); 14.1% were African American/Black, and 9% were multi-race. Three-fourths of the deaths reviewed occurred by four months of age.

OK PRAMS VI, the newest version of the survey (beginning with 2009 births) does ask two new and related questions, one on safe sleep advice during prenatal care and the other on frequency of bed-sharing (sharing any sleep surface with another child or adult). This is an attempt to better outline risk for all Oklahoma infants.



○ **Infant Mortality Rates**

An infant mortality rate (IMR) is defined as the number of infant deaths during the first year of life per 1,000 live births. The U.S.'s IMR has declined significantly throughout the 20th century, from approximately 100 infant deaths per 1,000 live births in 1900 to 29.2 in 1950 then to 12.6 in 1980, which represented an 87% decrease overall. However, since 1980 the decline in infant mortality has been more modest and now stands at 6.7 deaths per 1,000 live births in 2006 (Figure 62). Oklahoma has experienced similar declines in infant mortality; however, Oklahoma's 2006 infant mortality rate of 8.0 was 19% higher than the national average. Oklahoma saw a relative decrease of 1.2% from the 2005 IMR of 8.1 deaths per 1,000 live births to 8.0 deaths per 1,000 live births in 2006.

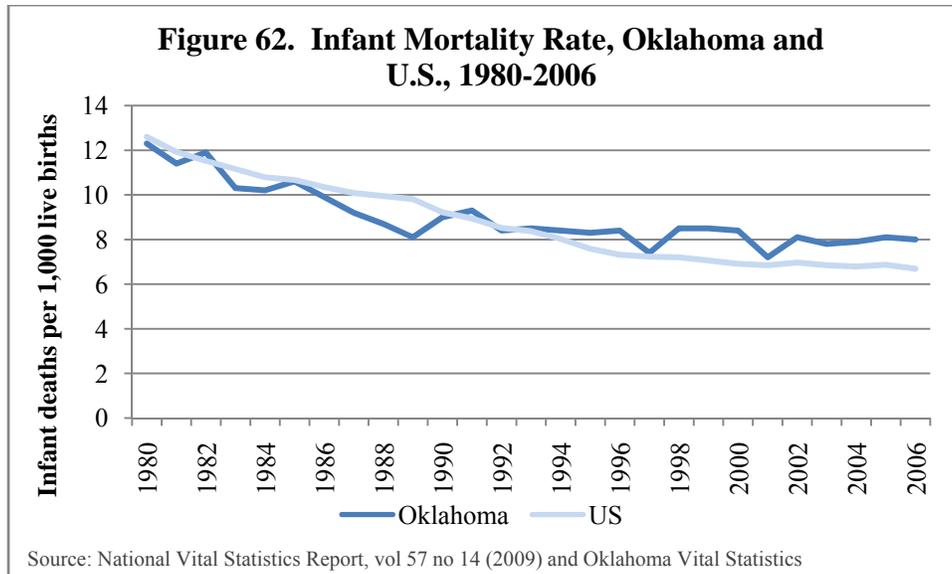
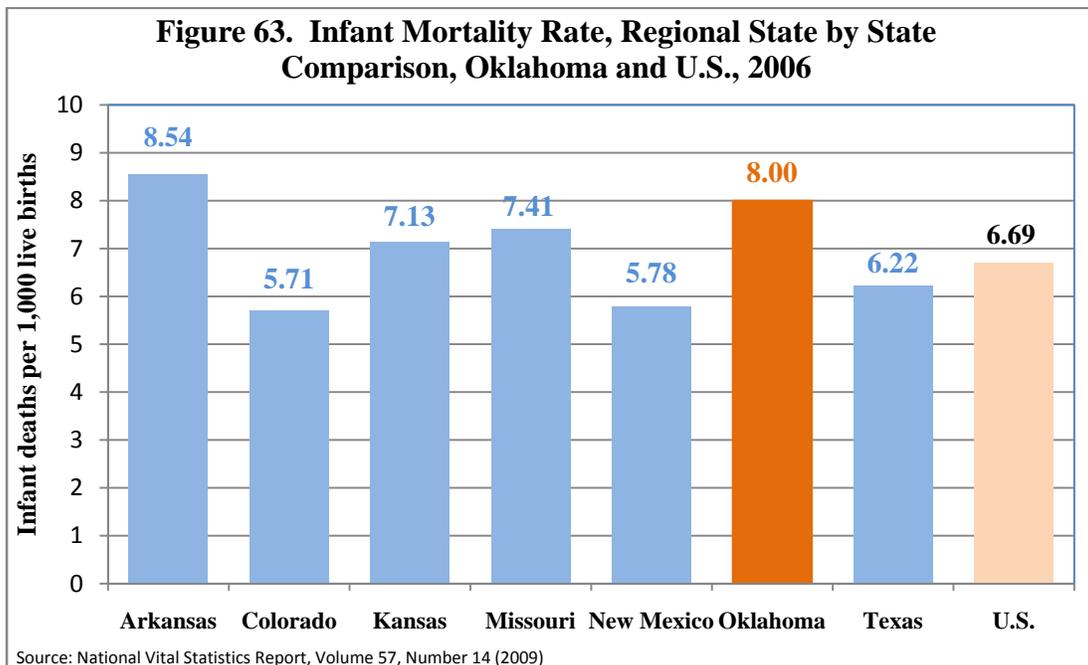


Figure 63, Oklahoma highlighted in orange, shows a regional state by state comparison of infant mortality rates for 2006. Of our neighboring states: Colorado, New Mexico, Texas, and Kansas all have lower rates than Oklahoma, while Arkansas has a higher rate. Oklahoma’s 2006 IMR of 8.0 gave it a ranking of 41st in the U.S.. Washington state is ranked first, Mississippi is ranked 50th, and the District of Columbia is ranked 51st (data not shown).



Like the U.S., the top three rankable causes of infant death in Oklahoma are congenital malformations, deformations, and abnormalities; disorders related to short gestation and low birth weight; and SIDS (Table 22). However, compared to the U.S., Oklahoma has an excess mortality rate of 40.7 deaths per 100,000 live births for congenital malformations and 4.8 for

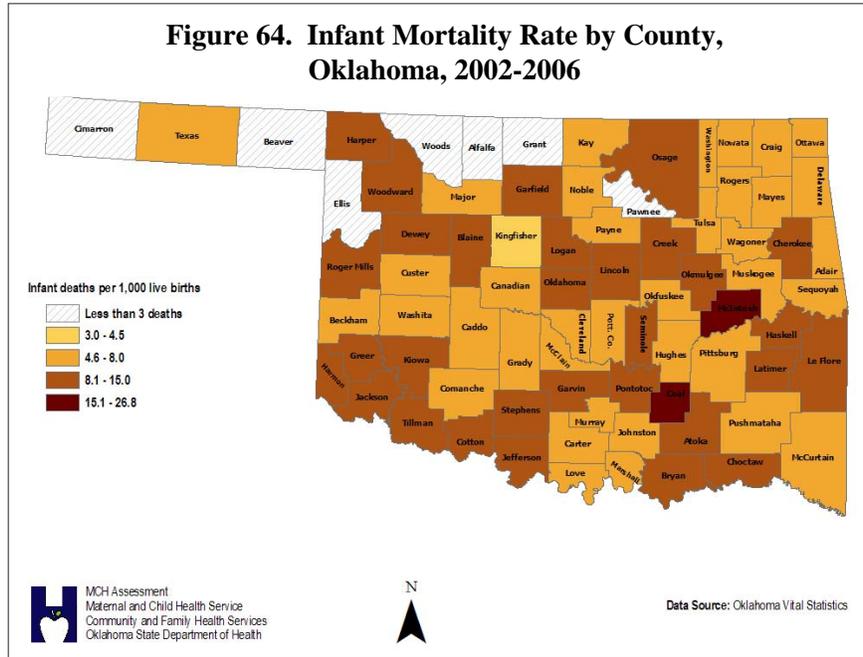
SIDS. Conversely, Oklahoma’s mortality rate of 106.4 infant deaths per 100,000 live births for short gestation and low birth rate is 7.1 less than the U.S. rate of 113.5. Bacterial sepsis of the newborn, respiratory distress of the newborn, and diseases of the circulatory system occur more frequently than the national average, while accidents, maternal complications of pregnancy, and complications of placenta, cord, and membranes occur less frequently. Since this table only shows rankable causes of death, one important category is not shown and that is “other symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified (ICD 10 codes: R00-R53, R55-R94, and R96-R99)”. The Oklahoma mortality rate for this category was significantly higher than the U.S. rate at 73.9 and 22.2 infant deaths per 100,000 live births, respectively (National Center for Health Statistics, 2009). Oklahoma has observed a significant drop in the number of deaths attributed to SIDS with a corresponding increase to the remainder of the R group of deaths of the ICD 10 codes. The primary reason for this shift may be reluctance of the State Medical Examiner’s Office to classify unknown deaths to SIDS. The R group includes “...abnormal results of clinical or other investigative procedures”, and it is used by many pediatricians and medical examiners because of their reluctance to classify deaths as SIDS.

Cause of death	Oklahoma		U.S.		Oklahoma Excess Rate
	Rank	Rate	Rank	Rate	
Congenital malformations (Q00-Q99)	1	177.1	1	136.4	40.7
Disorders related to short gestation and low birth weight (P07)	2	106.4	2	113.5	-7.1
Sudden infant death syndrome(R95)	3	59.3	3	54.5	4.8
Bacterial sepsis of newborn(P36)	4	37.6	8	18.9	18.7
Respiratory distress of newborn(P22)	5	31.9	7	19.3	12.6
Accidents (unintentional injuries)(V01-X59)	6	29.3	5	26.9	2.4
Newborn affected by maternal complications of pregnancy(P01)	7	20.4	4	39.5	-19.1
Diseases of the circulatory system(I00-I99)	8	19.8	10	12.7	7.1
Newborn affected by complications of placenta, cord and membranes(P02)	9	17.2	6	26.7	-9.5
Necrotizing enterocolitis of newborn(P77)	10	13.4	9	12.4	1.0

Rates are infant deaths per 100,000 live births
Source: National Vital Statistics Report, vol 57 no 14 (2009) and Oklahoma Vital Statistics

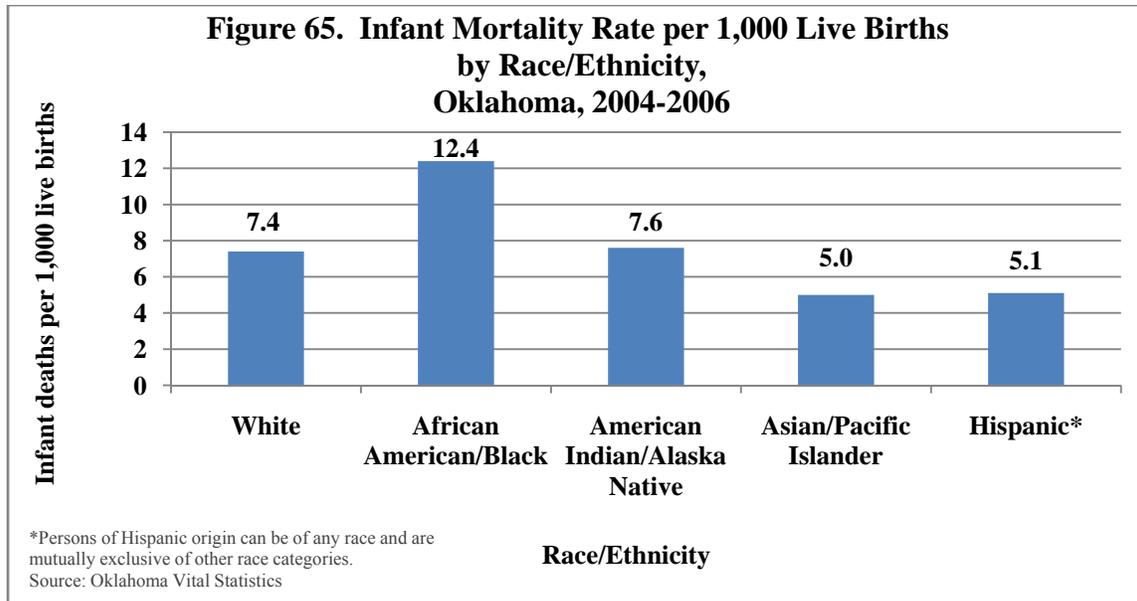
Figure 64 shows infant mortality rates by county using five years of data, 2002-2006. The ranges used were based on the Healthy People 2010 goal of 4.5 and the 2006 IMR for Oklahoma of 8.0. While several counties had an average IMR below the state IMR of 8.0 in 2006, fewer had a lower rate than the national average of 6.7 and only one county, Kingfisher, had a rate lower than the Healthy People 2010 goal of 4.5. While the southeastern region of the state historically has had higher infant mortality rates, all regions of the state have at least one county with an IMR at or above the state average. The two largest metropolitan areas, Oklahoma County and Tulsa County, had a five-year average rate of 8.9 and 8.0 infant deaths per 1,000 live births respectively.

Figure 64. Infant Mortality Rate by County, Oklahoma, 2002-2006



Using linked birth and death records allows for the use of many additional variables and therefore provides the opportunity for more detailed analyses. The linked file is particularly helpful when calculating mortality rates by race because the race of the mother is used in both the numerator and the denominator thus providing a more accurate representation of infant mortality by race. In addition, studies have shown that using the mother's race from the birth certificate is more reliable than using the infant's race on the death certificate since this field is completed by a funeral director or medical examiner based on information from an informant or personal observation.

Despite significant declines in infant mortality over the last several decades, there continue to be significant disparities among Oklahoma's minority population. Although African American/Blacks experienced similar rates of decline over the last several decades, they have historically had higher rates than other racial groups in the state and that disparity continues today. Figure 65 shows infant mortality rates in Oklahoma by race and ethnicity for 2004-2006. Asian/Pacific Islanders had the lowest infant mortality rate during this period at 5.0 infant deaths per 1,000 live births, followed by Hispanics, whites, American Indian/Alaska Natives, and African American/Blacks at 5.1, 7.4, 7.6, and 12.4, respectively. Although the rate for African American/Blacks using the linked file was lower than when calculating rates from the death file only, the African American/Black rate was still nearly twice that of all other racial/ethnic groups.



The following table shows infant mortality rates by gestational period and the mother's race/ethnicity (Table 23). The infant mortality rate for very preterm (less than 32 weeks completed gestation) births was significantly high for each racial/ethnic group. However, the African American/Black infant mortality rate at 212.0 deaths per 1,000 live births was 30% higher than the next group which was 162.9 infant deaths per 1,000 live births for whites. All other racial/ethnic groups were significantly lower than African American/Blacks in this category. Although disparities exist, what is apparent is that all racial/ethnic groups' infant mortality rates decrease as the number of completed weeks of gestation increases.

**Table 23. Infant Mortality Rates by Completed Weeks of Gestation and
Race/Ethnicity, Oklahoma, 2002-2006**

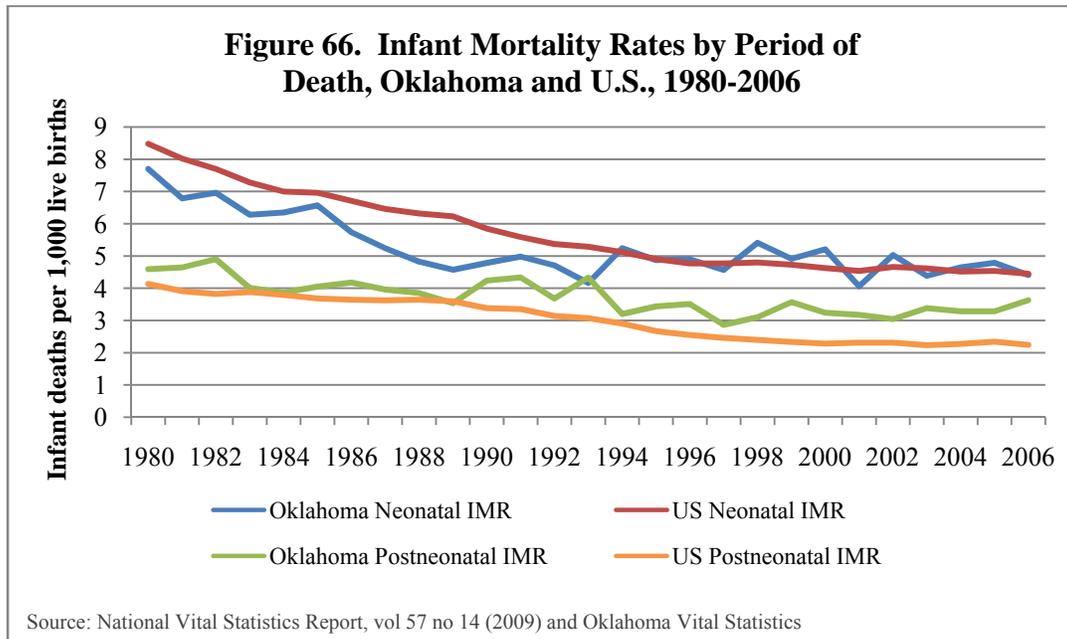
Gestation in Weeks	Race/Ethnicity				
	White	African American/Black	American Indian/Alaska Native	Asian/Pacific Islander	Hispanic
< 32 (very preterm)	162.9	212.0	138.1	131.6	137.1
33-34 (moderate preterm)	23.3	23.1	15.0	25.3	10.6
34-36 (late preterm)	8.8	8.3	12.2	9.9	8.2
37+ (term plus)	3.8	4.1	4.4	2.2	2.5

Rates are infant deaths per 1,000 live births
Source: Oklahoma Vital Statistics

- **Neonatal and Postneonatal Mortality**

Infant deaths are typically classified as neonatal and postneonatal. Neonatal deaths are death of infants who die before 28 complete days of life; postneonatal deaths are defined as deaths of infants that are least 28 days of age but less than 365 complete days of age. Causes of neonatal deaths are primarily associated with conditions arising during pregnancy, the health of the mother before and during pregnancy, and conditions arising during delivery; many of the postneonatal deaths are due to conditions occurring to the infant after it is born. The following

graph (Figure 66) shows neonatal and postneonatal mortality trends from 1980-2006 for Oklahoma and the U.S. The neonatal mortality rates (neonatal deaths per 1,000 live births) in Oklahoma, have been lower than the national average for several years and for 2006 were 4.40 and 4.45, respectively. For postneonatal mortality rates, Oklahoma was very close to the national average for several years, but over the last 15 years has been losing ground to the U.S. average and appears to be on an upward trend. The postneonatal mortality rate for Oklahoma was 3.6 postneonatal deaths per 1,000 live births in 2006, compared to 2.2 for the U.S..



When analyzing by maternal age and period of death, the youngest and oldest mothers have the greatest risk of infant mortality. Teen mothers 17 years of age and younger have nearly twice the rate of neonatal deaths as mothers aged 25-34 (Table 24). As the maternal age increases the mortality rate for both neonates and postneonates decreases; however, rates begin to increase again for mothers aged 35 and over.

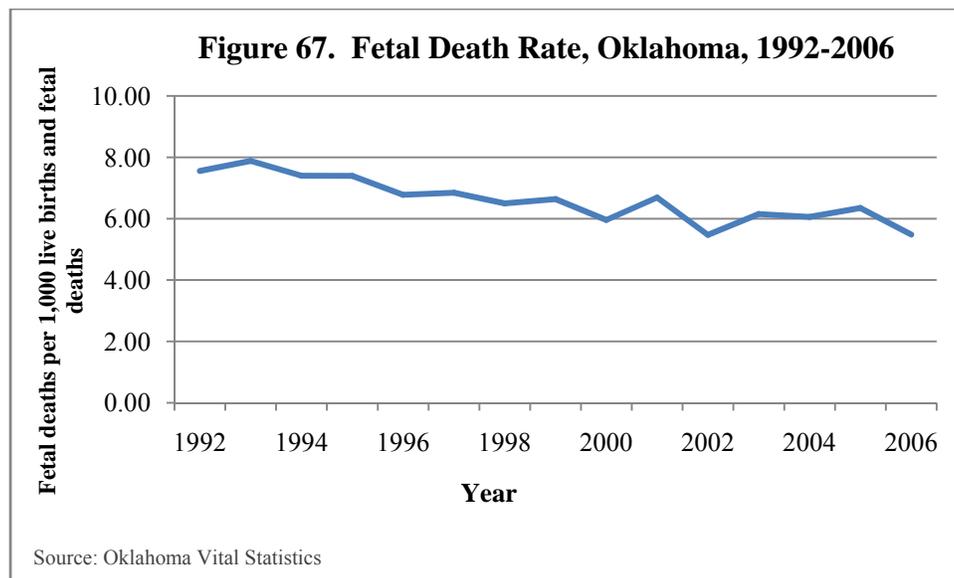
Maternal Age (Years)	Neonates			Postneonates		Infants	
	Live Births	(Under 28 days) Deaths	Rate	(28 days-11 months) Deaths	Rate	(under 1 year of age) Deaths	Rate
Under 18	11320	79	6.98	54	4.77	133	11.75
18-19	24287	116	4.78	106	4.36	222	9.14
20-24	86831	378	4.35	352	4.05	730	8.41
25-29	71282	289	4.05	168	2.36	457	6.41
30-34	43805	174	3.97	97	2.21	271	6.19
35-39	17383	82	4.72	38	2.19	120	6.90
40 +	3711	39	10.51	11	2.96	50	13.47

Rates are deaths per 1,000 live births
Source: Oklahoma Vital Statistics

- **Fetal Mortality**

A fetal death is defined by the World Health Organization as “a death prior to the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of pregnancy; the death is indicated by the fact that after such separation the fetus does not breathe or show any other evidence of life, such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles.” (Definition adopted by the World Health Organization in 1950.)

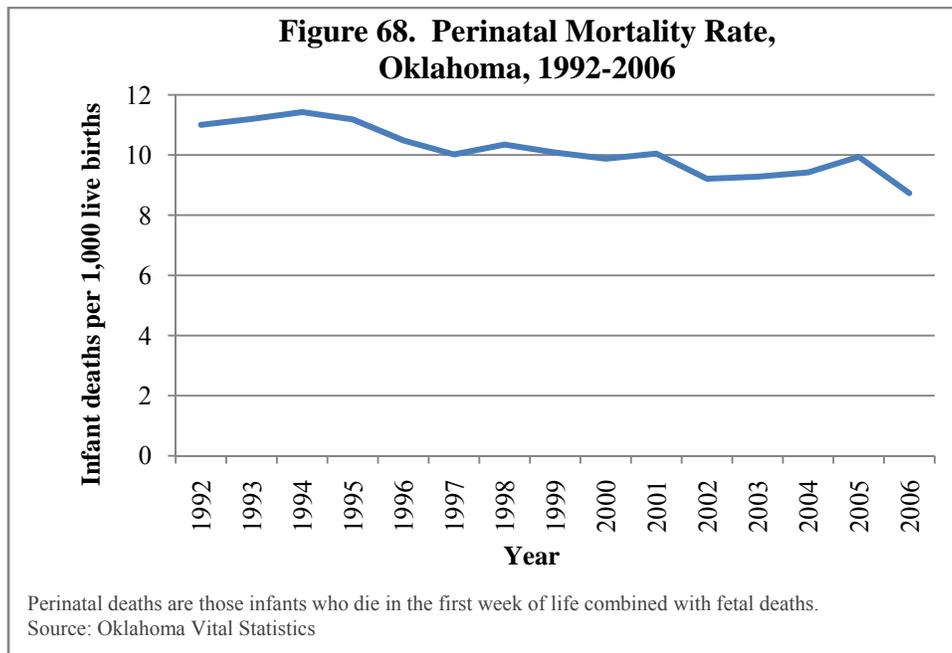
Oklahoma requires that any fetal death of 20 weeks or more gestation be reported to the OSDH. A fetal death rate is the number of fetal deaths divided by the number of live births plus the number of fetal deaths. Over the last 15 years the fetal death rate in Oklahoma has decreased 27.6% from 7.6 fetal deaths per 1,000 live births and fetal deaths in 1992, to 5.5 fetal deaths per 1,000 live births and fetal deaths in 2006 (Figure 67). While there has been some fluctuation in the fetal death rate over the past few years this decrease is statistically significant. The 2005 rate of 6.35 for Oklahoma was not significantly different than the U.S. rate of 6.22 for the same year.



- **Perinatal Mortality**

Early neonatal deaths, those infants who die in the first week of life, and fetal deaths have been shown to have common causes. Combining early neonatal deaths and fetal deaths produces a perinatal mortality rate. Data from the Perinatal Periods of Risk (PPOR) model as well as other studies have shown that perinatal deaths are an important indicator of maternal health and maternal care. Like other outcomes previously discussed in this document it is apparent that while access to care and entry into prenatal care play an important role in birth outcomes, socioeconomic status as well as maternal health behaviors have a significant association as well.

A perinatal mortality rate is the number of fetal deaths plus the number of early neonatal deaths divided by the number of fetal deaths plus the number of live births. The perinatal mortality rate in Oklahoma has decreased from 1992 to 2006 (Figure 68) from 11.0 per 1,000 live births to 8.7 per 1,000 live births.



In addition to the standard approach for assessing the burden of infant mortality, data were utilized from the PPOR model. 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. The following PPOR Map is based on Oklahoma fetal and infant deaths from 2002-2006 (Table 25). Due to the anticipation of limited resources two specific areas from the PPOR results have been chosen for intervention based on their high mortality rates and contribution to the burden of infant mortality in Oklahoma: Maternal Health/Prematurity with a rate of 3.3 fetal and infant deaths per 1,000 live births and fetal deaths, and Infant Health with a rate of 2.6 fetal and infant deaths per 1,000 live births and fetal deaths. While the underlying cause of death is useful for investigating deaths in the Infant Health category, the causes of death among VLBW births and fetal deaths in the Maternal Health/Prematurity category can be complex, resulting in inconsistent reporting.

Table 25. PPOR Map of Fetal and Infant Deaths, Oklahoma, 2002-2006				
	Fetal Death	Neonatal	Post-Neonatal	
500-1499 grams	3.4 fetal-infant deaths per 1,000 fetal deaths and live births			1393 Fetal-Infant Deaths
	Maternal Health & Prematurity			
1500+ grams	1.9 fetal deaths per 1,000 fetal deaths and live births	1.5 neonatal deaths per 1,000 fetal deaths and live births	2.6 post-neonatal deaths per 1,000 fetal deaths and live births	152,120 live births and fetal deaths
	Maternal Care	Newborn Care	Infant Health	
"9.2 overall feto-infant mortality rate"				
Overall feto-infant mortality rate is number of fetal and infant deaths per 1,000 fetal deaths and live births Source: Oklahoma Vital Statistics				

To estimate the contribution of deaths that are attributed to birth weight in the Maternal Health/Prematurity group, the Kitagawa Formula was used (Kitagawa, 1955). This formula can provide an estimation for excess deaths due to having more than the expected proportion of infants being born low weight or of having infants born low weight but not surviving at the expected rates. The results showed that while African American/Black VLBW infants survive better than white VLBW infants, the larger than expected proportion of African American/Black infants 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 (data not shown). Decreasing infant mortality for whites will require both preventing prematurity and reducing mortality for the smallest infants.

For the Maternal Health/Prematurity category, Oklahoma 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. Infant Health efforts focus on infant safe sleep including sleep position and bed sharing, breastfeeding, tobacco exposure, and infant injury prevention.

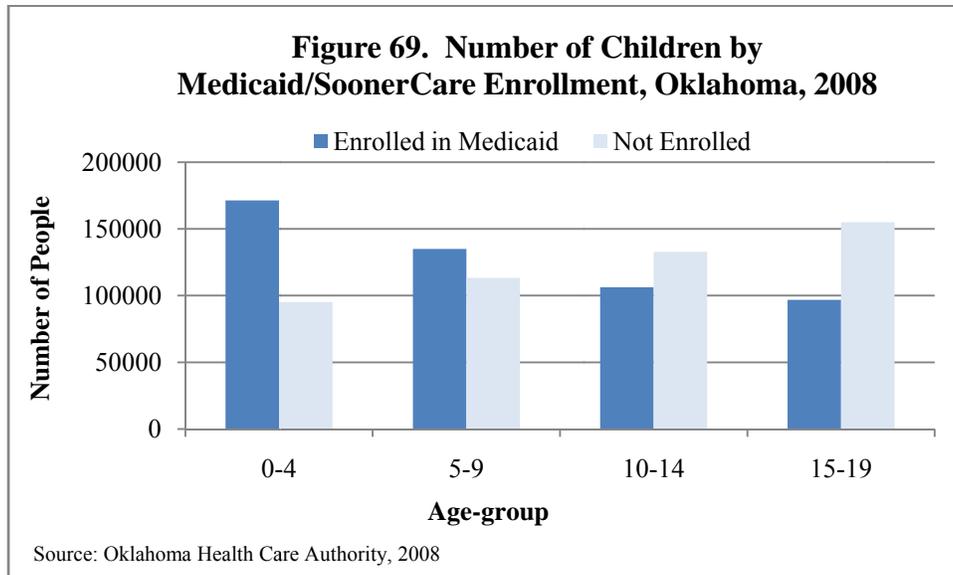
B. Children

Access to Care

A lack of access to health care is correlated with low socio-economic status and presents families with a multitude of problems. While enrollment in social programs does increase a caretakers' ability to provide needed services for their children, it is indicative of the elevated poverty levels in the state. Throughout counties in Oklahoma, child poverty levels range from 11.3% to 41.3%, with almost half of the counties with rates of 25% or higher. Overall, a lack of health care access and insurance coverage is associated with a decrease in the use of preventive health services, a delay in seeking medical attention, and poor health status, which translates into more school absenteeism for children.

According to the Kaiser Family Foundation, 13.3% of Oklahoma children 18 years and under were uninsured compared to 11.3% nationally (data not shown) (Kaiser Family Foundation, 2007). Additionally, data provided by the OHCA show that 509,354 children and adolescents

ages 0-19 were enrolled for SoonerCare services in 2008 (Figure 69). This represents 50.6% of the estimated 1,005,750 individuals aged 0-19 in the state; however, it does not include those individuals who are potentially eligible but have not been certified to receive assistance. Uninsured rates are lowest for 15-19 year-olds but increases successively with each of the younger age-groups. Children up to age 18 qualify for SoonerCare with family incomes up to 185% of the FPL. Individuals aged 18-20 qualify with incomes up to 100% of the FPL. Oklahoma has utilized the SCHIP to expand SoonerCare eligibility up to 185% for all age-groups up to age 18.



TOTS showed that 94.5% of Oklahoma’s two-year-olds had health insurance in 2008 (Table 26). Over half had some type of government funded health coverage, 50.8% had SoonerCare, 1.2% had military health coverage, and 4.9% utilized the Indian Health Service or tribal facilities for health care services. While most families (55.0%) reported less than \$100 out of pocket expenses for their toddler’s health care, 4.4% reported spending \$1,000 or more in the past year. Almost one in five mothers indicated that their toddler went without health insurance at some time during their two years of life, with 2.5% never having health insurance coverage. The most common barriers for those toddlers who had gaps in their health insurance coverage were not qualifying for Medicaid, waiting for coverage to start, not being able to afford coverage, and parental unemployment.

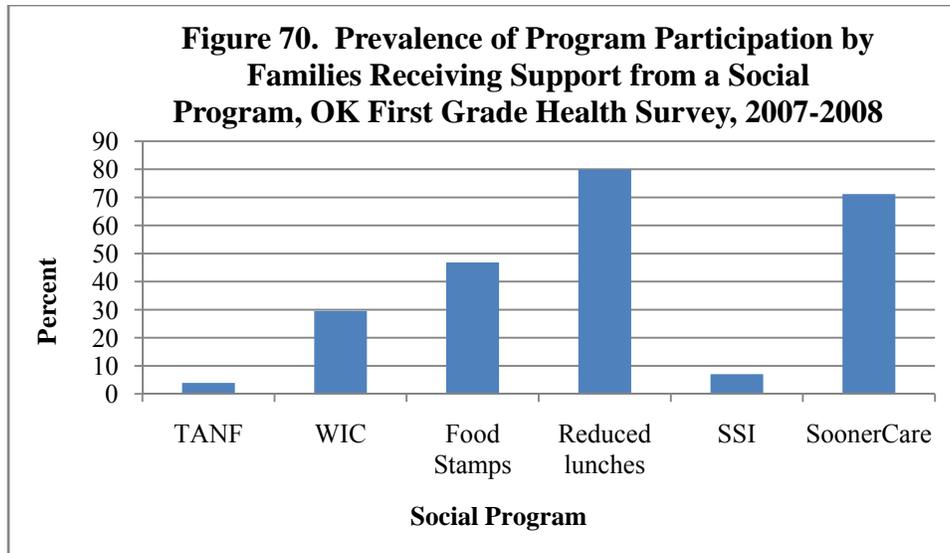
Table 26. Health Insurance Coverage Among Toddlers, TOTS, 2008		
Question	Percentage	95% CI
Does your two-year-old currently have health insurance?		
Yes	94.5	92.3, 96.1
No	5.5	3.9, 7.7
Don't know	0.1	0.0, 0.3
If yes, what kind of health insurance?		
Group insurance	39.3	35.1, 43.7
Private insurance	2.9	1.9, 4.5
HMO	3.4	2.2, 5.3
SoonerCare/Medicaid	50.8	46.3, 55.4
Indian Health Insurance	4.9	3.3, 7.1
Military facility	1.2	0.6, 2.5
Other	1.9	1.0, 3.6
During the past 12 months, how much money has your family spent on health care for your two-year-old?		
Less than \$100	55.0	50.6, 59.3
\$100 to \$299	19.9	16.7, 23.5
\$300 to \$499	10.5	8.2, 13.4
\$500 to \$999	6.9	5.1, 9.3
\$1,000 to \$1,999	1.6	0.9, 2.8
\$2,000 or more	2.8	1.8, 4.4
Don't know	3.3	1.9, 5.6
Since your two-year-old was born, has there ever been a period that he/she was not covered by any health insurance?		
Yes	18.0	14.8, 21.7
No	80.5	76.7, 83.9
Don't know	1.4	0.7, 3.0
If yes, how many months was your two-year-old not covered?		
Less than one month	16.7	10.2, 26.0
1-3 months	34.5	25.1, 45.2
4-6 months	21.2	13.8, 31.1
7+ months	23.6	15.7, 34.0
Never covered	2.5	0.8, 7.4
Don't know	1.6	0.4, 6.1

Question	Percentage	95% CI
Why was your two-year-old not covered?		
Preexisting condition	1.1	0.2, 5.8
Couldn't afford	15.6	9.4, 24.5
Unemployed	14.3	8.5, 23.1
Don't believe in health insurance	0.2	0.0, 1.0
Didn't qualify for Medicaid	30.6	21.6, 41.4
Medicaid application too difficult	2.2	0.9, 5.4
Waiting for coverage to start	30.0	21.2, 40.5

Data from the 2007-2008 1GHS show that 91% of parents/guardians surveyed reported their first grader had some form of health insurance. Of the 9% not covered by health insurance, the leading factor preventing access to care was cost at 41.8%. More than one-third (35.1%) reported that they did not qualify for SoonerCare. Moreover, the results also showed that nearly one in ten (9.9%) first graders' insurance did not cover routine well-care visits. Approximately 6% of parents/guardians reported that in the 12 months before the survey was administered there was at least one time that their first grader needed health care but could not get it. Of those who did not get the health care they needed:

- 40.6% reported they had no health insurance.
- 33.1% reported that it costs too much.
- 26.3% reported they were unable to get an appointment.
- 7.5% reported inconvenient doctor's office hours.
- 5.3% reported transportation problems.
- 3.8% could not find a doctor who accepted their insurance.
- 3.0% reported that no doctor was available in their area.

Just under half (43.7%) of first graders' parents/guardians reported receiving some type of support from an assistance program during the 12 months before the survey was administered (e.g., SoonerCare, Temporary Assistance for Needy Families (TANF), WIC, food stamps, Supplemental Security Income (SSI)). For families of first graders, free or reduced lunches and SoonerCare were the two most received assistance programs (Figure 70).



Medical homes for children are important in ensuring children receive the care they need, when they need it, from a provider the family is familiar with and trusts. According to 2008 TOTS data, 79.4% of Oklahoma’s toddlers had a provider they could contact at all times (Table 27). For those who indicated they did not have a medical home, 40% indicated it was because the toddler was seldom or never got sick. Five percent said it was due to lack of insurance. One-third indicated it was due to “other” issues, the most prevalent being their provider did not offer a 24-hour service. When asked if anything prevented them from getting their toddler health care, mothers reported that expenses and inconvenient office hours were factors in delaying or not seeking health care for their two-year-old.

Question	Percentage	95% CI
Does your two-year-old have a health care provider available 24 hours per day, 7 days per week?		
Yes	79.4	75.4, 82.9
No	19.2	15.8, 23.1
Unknown	1.5	0.6, 3.4
If no, what is the one main reason you do not have someone you can contact when needed?		
Seldom or never gets sick	39.9	29.9, 50.8
Recently moved into the area	2.5	0.9, 6.6
Don’t know where to go for care	3.6	1.3, 10.0
Usual place in my area no longer available	0.1	0.0, 0.5
Can’t find provider who speaks my language	2.6	0.6, 10.5
No insurance or lost insurance	5.0	2.2, 10.8
Don’t use doctors/treat child myself	1.2	0.3, 5.1
Cost of medical care	0.5	0.2, 1.5
Other	32.7	23.5, 43.4
Unknown	11.9	6.2, 21.3

Question	Percentage	95% CI
Have any of the following prevented you from getting any type of health care for your two-year-old?		
Too expensive	8.3	6.2, 11.0
Inconvenient office hours	8.7	6.4, 11.6
Transportation problems	5.1	3.3, 7.7
Didn't have regular health care provider	3.8	2.3, 6.2
Couldn't find a provider who would take my child	1.2	0.6, 2.8
Provider or service not available	1.3	0.5, 3.1
Couldn't miss work or school	6.4	4.5, 9.0
No child care for other children	2.1	1.3, 3.6
No insurance	5.1	3.5, 7.4
Insurance did not cover	2.2	1.3, 3.7
Other	1.1	0.5, 2.2

Results from the 2007-2008 1GHS show that 86.1% of first graders' parents/guardians reported to have a person or place they think of as their child's personal health care provider. Of those first graders who did not have a personal health care provider, the main reason reported was:

- 30.3% reported their first grader seldom or never gets sick.
- 8.7% reported their first grader has no insurance.
- 5.9% reported they recently moved into the area.
- 5.3% cited the cost of medical care.
- 2.8% reported they could not get an appointment.
- 2.5% cited transportation problems.
- 2.2% reported the provider does not accept SoonerCare.

Less commonly cited reasons were: inconvenient office hours; cannot find a provider who speaks their language; there was no doctor available in their area; and knowing where to go for care.

BRFSS data for 2008 show that 38.5% of young adults aged 18-24 do not have a personal doctor. Furthermore, 18.2% stated that in the last year before the survey they needed a doctor but the cost was too high. Information from the 2008 National Health Interview Survey (NHIS) shows that for young adults aged 20-29 years, 73.4% had a doctor visit within the past year (Cohen & Bloom, 2010).

- **Immunizations**

Immunizations are an important aspect of preventative health care for children as vaccines immunize children against life-threatening and debilitating bacteria and viruses. Data from the 2008 National Immunization Survey (NIS), which estimates the proportion of children who have been vaccinated and is the latest year available, showed a coverage rate of 73.6% for Oklahoma

compared to the national average of 78.2% for children 19-35 months of age. These immunizations included the 4:3:1:3:3 primary vaccination series (DTap, Polio, MMR, Hib, HepB) and gave Oklahoma a ranking of 39th nationally. Oklahoma's neighboring states had similar coverage rates with Arkansas at 78.0%, Colorado at 79.4%, Kansas at 78.2%, New Mexico at 79.1%, Missouri at 76.0%, and Texas at 78.6%. While there appear to be minor differences in these rates, the margins of error from this survey indicate the differences were not statistically significant. In 2007, Oklahoma ranked 25th with a coverage rate of 80.1% (Centers for Disease Control and Prevention, 2008).

Tracking immunizations reduces the likelihood of duplicative shots, missed vaccines, and provides valuable information on which vaccines are most commonly missed. The Oklahoma State Immunization Information System (OSIIS) registry increased its provider participation during the past year from 871 to 944 providers. Additionally, over 1,000 schools and 208 child care centers continue to utilize the OSIIS registry as a means to track state immunization requirements. Over 90% of children aged six years or younger have multiple vaccinations recorded in the registry.

At present, approximately 13% of state children lack just one dose by 24 months of age to complete the series. Therefore, with data collected from the state immunization registry, new strategies, such as child care audits as well as the OK By One project, have been developed to improve Oklahoma's compliance. Oklahoma's newest intervention strategy is called Operation Buzzer Beater (OBB). OBB is a specific reminder/recall intervention that targets 21 month-old children who are one or two doses behind in completing the primary series of vaccinations.

Immunizations are also important for teens and preteens because some childhood vaccinations can start to lose their effectiveness over time. In addition, new types of infections need to be addressed for teens that were not covered as a child, such as meningococcal meningitis and the human papillomavirus (HPV). Meningococcal meningitis is a very serious disease, which affects the lining around the brain and spinal cord, and can result in death. HPV is a viral infection that is spread through sexual contact. The HPV4 vaccine provides protection against the two types of HPV that cause the majority of cervical cancer in females as well as genital warts in males and females. The three vaccines recommended for preteens are: Meningococcal conjugate vaccine (MCV); Tetanus, diphtheria, and acellular pertussis vaccine (TDaP); and HPV4. Data from the 2008 NIS for Teens indicate that 36% of adolescents aged 13-17 years in Oklahoma received at least one or more doses of HPV4 compared to 37% nationally. The results also showed that 29% of adolescents aged 13-17 years in Oklahoma received at least one or more doses of MCV4 compared to 42% nationally. Lastly, 29% of adolescents aged 13-17 years in Oklahoma received one or more doses of TDaP compared to 41% nationally (Centers for Disease Control and Prevention, 2010).

- **Oral Health**

According to the CDC, tooth decay is the most common chronic childhood infectious disease in the U.S. While most oral diseases are preventable and treatable, there are many children who live with untreated dental caries (cavities). Children with dental caries can experience occasional to persistent discomfort and pain, may have difficulty chewing food, and often have discolored or damaged teeth (CDC and the Association of State and Territorial Dental Directors, 2010). An

integral component to improving the oral health status of Oklahoma’s children is insuring access to preventative oral health care statewide. According to the Oklahoma Board of Dentistry, six of the state’s 77 counties do not have a practicing dentist and five counties do not have a dental hygienist. Therefore, access to basic dental care is limited in some areas of the state (largely rural) and families may have to travel considerable distances to receive necessary oral health care (Oklahoma Dental Association, 2009).

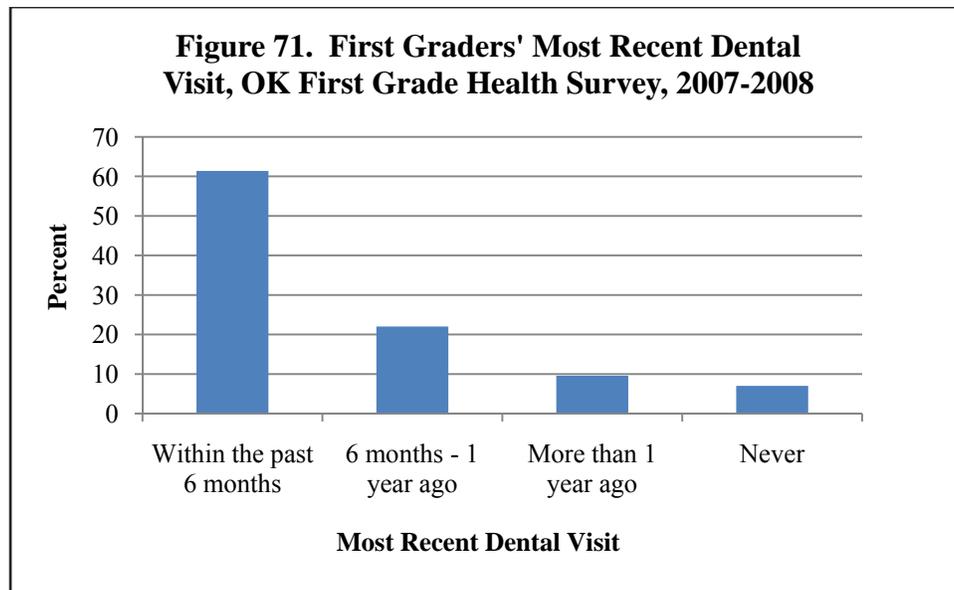
Data from TOTS indicate that three-fourths of Oklahoma’s two-year-old population had dental health insurance coverage in 2008. TOTS data showed that 2.5% of toddlers had a provider diagnose them with tooth decay or cavities. However, some parents reported (anecdotally) not being able to find a dentist who would see their child before age two and sometimes at two years of age, so the prevalence of tooth decay may be underreported even among those children with dental health insurance (Table 28).

Question	Percentage	95% CI
Has a health care provider ever said that your two-year-old has tooth decay or cavities?		
Yes	2.5	1.3, 4.6
No	90.5	87.4, 92.9
Unknown	7.0	5.1, 9.7
Does your health care coverage pay for all or part of your two-year-old’s bills for Dental Care?		
Yes	75.1	71.0, 78.8
No	11.0	8.6, 13.9
Don’t know	10.8	8.2, 14.1
Unknown	3.1	1.7, 5.3

Barriers to receiving dental care exist for older children as well. The Oklahoma First Grade Health Survey asked parents/guardians the timing of the most recent visit to the dentist for their child; 9.6% of first graders had not had a dental visit for more than a year and 7.0% had never been to a dentist (Figure 71). Approximately one in ten (9.1%) first graders’ parents reported there was a time in the 12 months before the survey that their child needed dental care but could not get it.

Among those who reported not getting the dental care they needed, the most commonly reported barriers were:

- 44.3% reported that it cost too much.
- 41.9% reported they had no insurance.
- 9.5% reported having transportation problems.
- 9.1% could not get an appointment.
- 7.6% reported their insurance was not accepted by the dentist.



In 2003, a statewide assessment was conducted to establish a baseline for oral health indicators for children in Oklahoma. The assessment showed that more than two-thirds (69.4%) of third-graders in Oklahoma had dental caries, which was higher than any other state in the nation. Additionally, 40.2% of third-graders in Oklahoma had untreated decay. A follow-up assessment conducted in 2008 indicates that 32.3% of third graders had at least one permanent or primary tooth with untreated decay, which was an improvement from 40.2% in 2003. Additionally, 71.5% of third graders had experienced dental caries, which was a slight increase from 69.4% in 2003 (OSDH Dental Health Service, 2009).

Dental sealants have been shown to be a safe and effective measure for preventing dental caries in children. However, data from the Association of State and Territorial Dental Directors indicate that only about one-third of children aged 6-19 years have sealants (CDC and the Association of State and Territorial Dental Directors, 2010). The Health People 2010 objective is for 50% of all children aged eight years to have dental sealants. Data from the 2007-2008 1GHS show that 62.6% of first graders did not have dental sealants at the time of the survey. Similarly, data from the Oklahoma Oral Health Needs Assessment indicate that 60.3% of third graders did not have dental sealants in 2008 (OSDH Dental Health Service, 2009).

For Oklahoma youth and young adults, BRFSS data for 2008 show that half (50.2%) of 18-24 year olds had a dental visit in the 12 months prior to the survey, an increase from 34.4% in 1999, 36.4% in 2004, and 40.7% in 2006. While some improvements have been observed in some areas of access to and utilization of dental health services, it is clear that much more work is to be done.

In order to address such shortcomings, the Governor of Oklahoma, Brad Henry, issued an executive order in 2007 to establish a Task Force to look into the issue of Children and Oral Health. This unique task force was comprised of the Oklahoma Dental Association along with 12 other state agencies. The findings of this task force revealed that Oklahoma is making considerable improvements over past years. For instance, the number of Oklahoma dentists that,

as of 2008, participate in SoonerCare is 804, which is up from the 359 previous participating dentists in 2003. SoonerCare has done much to help strengthen the number of participating dentists with continued efforts such as reimbursement rate increases, even though most practices cite economic concerns as to their lack of participation in the SoonerCare program.

According to the PEW Center on the States, among those children age 1-18 who report to be low income, Oklahoma has seen an increase in SoonerCare utilization of dental services from 36.9% in 2005 to 42.7% in 2007 (The PEW Center on the States, 2010). Oklahoma has also shown tremendous resolve by attacking this health issue with many established and newly created programs in an effort to reach those areas and populations of the state most affected by access to care issues. Examples of this include: water fluoridation programs, at present, 81% of our state's 50 most populated cities are at proper fluoridation levels reaching 74% of Oklahoma's population, just under the national goal of 75%; The Delta Dental of Oklahoma Charitable Foundation's, the Captain Supertooth Program that was launched in 2000. Since that time, more than 100,000 children attending public school in grades kindergarten through third have heard the message of the importance to floss and to regularly visit a dental health care provider. The OSDH is yet another example with ten dental health educators that teach "Friends for Life"; a dental health educational program that instructs school aged children in grades kindergarten through sixth grade how to properly care for their teeth and mouths. Oklahoma schools also offer a program known as Adopt-A-Dentist that works in conjunction with the Council on Dental Education and Schools for Healthy Lifestyles (SHL). There were 46 dentists and 53 schools participating during the 2009-2010 school year (Oklahoma Dental Association, 2009).

Head Start and Early Head Start are two additional programs offered in Oklahoma with a current enrollment of 16,474 children in 2008 serviced at 80 sites. These programs seek to provide oral health exams/screenings, referral, and follow-up treatments to enrollees along with comprehensive medical health. As of 2008, three year-olds and four year-olds involved in this program show a decay rate of 30-40%, and 50-60%, respectively. It is reported that approximately 87% of Head Start and Early Head Start children have a "dental home", a place where oral health care is delivered in a comprehensive, continuously accessible, coordinated and family-centered way by a licensed dentist. The Indian Head Start program sees 3,297 children at 15 sites with 78% reporting to have a "dental home" (Oklahoma Dental Association, 2009).

Oklahoma also has a mobile dental care project. This service visited 195 sites in 35 counties providing services and treatments to 2,091 patients (not all necessarily children) with approximately 73% of those served in 2006 reportedly being uninsured (Oklahoma Dental Association, 2009).

It is reported that 64% of Oklahoma's community health centers/Federally Qualified Health Centers (FQHCs) provide preventive dental care, while 10 of the sites provide comprehensive oral health services either on site or by contract with a local dentist. As of 2007, these health centers employed 13 dentists and five hygienists and have had 29,051 encounters with 13,385 patients. These patients made up 7% of the total 2007 community health center population in Oklahoma (Oklahoma Dental Association, 2009).

- **Mental/Behavioral Health**

According to the September 2008 issue of the State of the State Children's Behavioral Health in Oklahoma, 40% of youth in need of mental health services and 80% of youth in need of substance abuse services are not receiving the services they require. It is estimated that among Oklahoma's youth, 10% experience a mental health disorder with an estimated additional 10% experiencing substance abuse issue(s). Inadequate treatment has the potential to lead to more severe mental health issues, contribute to delinquency, and increase the likelihood of youth to fail and/or drop out of school. Lack of access to proper treatment will have a long lasting adverse impact upon this population group. In addition, for the past decade in Oklahoma, suicides among youth aged 10-19 (14.8%) were not only the second leading cause of death for this age group, but Oklahoma's experience was higher than the national average. Nationally, suicide ranks as the third leading cause of death among youth aged 15-24 years (Oklahoma Department of Mental Health and Substance Abuse Services, 2008). Oklahoma, according to the Governor's and Attorney General's Blue Ribbon Task Force on Mental Health, Substance Abuse, and Domestic Violence, estimates the cost of untreated mental health issues and substance abuse to be \$3.2 billion in direct expenditures and as high as \$4.4 billion in indirect costs ascribed to premature death and lost productivity (Oklahoma Governor's and Attorney General's Blue Ribbon Task Force: Mental Health, Substance Abuse and Domestic Violence., 2006). It has also been ascertained that within the foster care system in Oklahoma, 85% of children have a diagnosis of mental health issues (Oklahoma Department of Human Services, 2009).

Figure 72 is a U.S. map that shows having at least one major depressive episode in the past year among youth aged 12 to 17, by state: percentages, annual averages based on 2005 and 2006 National Survey on Drug Use and Health (NSDUHs). Oklahoma is among those ten states with the highest percentage [8.97% to 9.73%, (Substance Abuse and Mental Health Services Administration, 2008)].

Table 29. Physical and Developmental Conditions Among Oklahoma First Graders, OK First Grade Health Survey, 2007-2008		
Question	Percent	
Has a health care provider ever said that your first grader has the following?	Yes	No
Speech or language delays	7.6	92.4
Attention Deficit Hyperactivity Disorder (ADHD)	7.1	92.9
Learning disability	2.2	97.8
Poor eye sight	10.2	89.8
Poor hearing	2.6	97.4

SoonerStart is Oklahoma’s Early Intervention Program for infants and toddlers, birth to 36 months, who have developmental delays or who have a physical or mental condition, such as Down syndrome or cerebral palsy, which will most likely cause a delay. SoonerStart is a collaborated effort of the Oklahoma Departments of Education, Health, Human Services, Mental Health Services, the Commission on Children and Youth, and the Oklahoma Health Care Authority. The Mission of the SoonerStart Early Intervention Program is *to enhance the abilities of Oklahoma infants and toddlers with delays and disabilities by strengthening the capacity of their families to support their development through an individualized, comprehensive, coordinated system of services and supports that are family-centered and transdisciplinary, occur in natural life context, and are based on evidence and current best practices in early intervention* (Interagency Coordinating Council for Early Childhood Intervention, 2009).

Entry into the SoonerStart program is voluntary and is at no direct cost to the family. To be eligible for the program a child must be between the ages of birth to 36 months and must exhibit a delay in their developmental age compared to their chronological age of fifty percent (50%) in one or twenty-five percent (25%) in two or more of the following developmental areas: adaptive, cognitive, communication, physical or social emotional development, or have a diagnosed physical or mental condition that has a high probability of resulting in a delay. Data from the SoonerStart 2009 Annual Report indicate that during SFY 2009, the SoonerStart Early Intervention Program received 9,057 referrals and provided screening, evaluation, and services to 13,532 infants and toddlers. Approximately half (45%) of the referrals were children under 12 months of age. The remaining 55% of referrals were for 12-23 month olds (28%) and 24-36 month olds (27%). There are 10 regions with 16 satellite offices that provide services to all 77 counties in Oklahoma. In SFY 2009, 586 children graduated from the program prior to their third birthday, which was an increase from 352 in SFY 2007 and 452 children in SFY 2006 (Interagency Coordinating Council for Early Childhood Intervention, 2009).

According to the CDC approximately 17% of children have a developmental or behavioral disability such as autism, ADHD, or speech and language delays. However, it is estimated that less than 50% of children with disabilities are identified before beginning school. Parents need to be better informed about their child’s development and the important milestones that should

be achieved. Developmental screening needs to be strengthened among health care providers seeing children from 0-3 years of age during well-child and sick-care visits.

Tobacco Exposure

A report from the Surgeon General concluded that there is no risk-free level of second-hand smoke exposure. Even brief exposure can be dangerous and cause an array of health concerns as second-hand smoke contains more than 250 toxic chemicals, with more than 50 of those being considered carcinogenic. Second-hand smoke exposure can cause ear and acute respiratory infections, severe asthma attacks, and slowed lung growth in children as well as immediate harmful effects on the cardiovascular and respiratory systems (U.S. Department of Health and Human Services, 2006). Results from the 2007-2008 1GHS show that approximately one-third (32.4%) of first graders' parents/guardians reported that they or someone else in their home smoked. More than one-fourth of parents/guardians reported their first graders were exposed to tobacco smoke. Of those first graders exposed to tobacco smoke:

- 73.1% were exposed one to three hours per day.
- 26.9% were exposed four or more hours per day.
- Nine out of ten (89.1%) respondents reported that they have talked with their first grader about the effects of smoking.

More than one fourth (28.5%) of women with two year olds in Oklahoma reported smoking cigarettes, even if only occasionally. Approximately 15% of Oklahoma's toddlers were exposed to secondhand smoke for one hour or more per day, almost 4% for more than six hours per day (Table 30).

Table 30. Secondhand Smoke Exposure Among Toddlers, TOTS, 2008		
Question	Percentage	95% CI
How many hours per day is your two-year-old around cigarette smoke?		
Zero	85.7	82.2, 88.6
One hour	4.4	2.9, 6.8
2-3 hours	1.8	1.0, 3.2
4-5 hours	1.1	0.4, 2.8
6+ hours	3.8	2.5, 5.9
Unknown	3.2	1.9, 5.4
Do you (the mother) smoke cigarettes, even if only occasionally?		
Yes	28.5	24.5, 32.8
No	71.4	67.1, 75.4
Unknown	0.1	0.0, 0.2

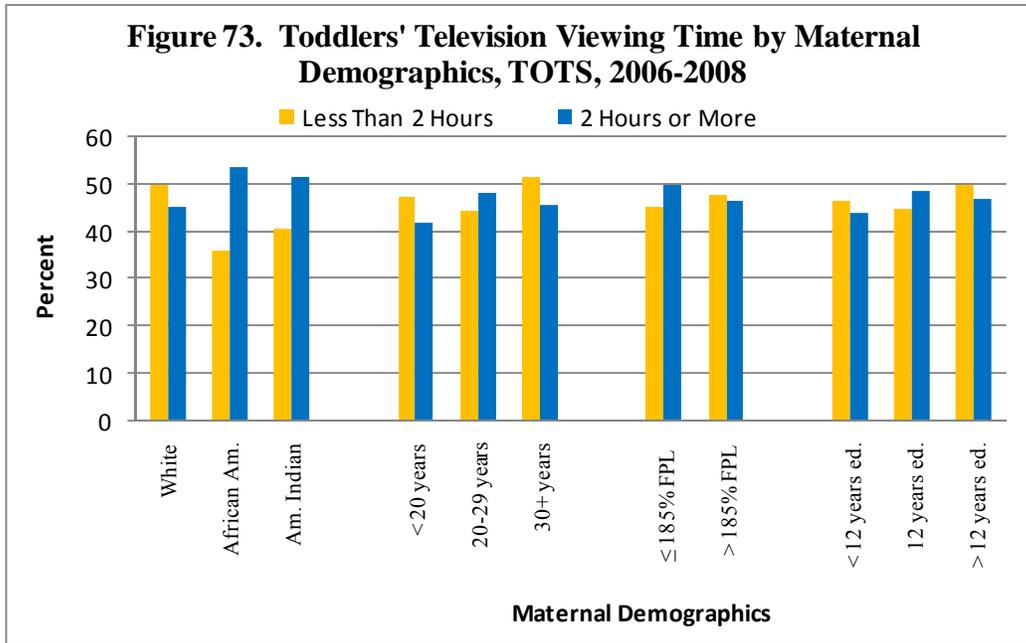
Obesity and Overweight

- **Physical Activity**

In Oklahoma, two-year-olds watched an average of 1.75 hours of television (TV) or videos per day. The AAP strongly discourages TV viewing for children ages 2 or younger. For older children, AAP advises no more than one to two hours per day of educational, nonviolent programs watched while supervised. However, far too many toddlers watch TV longer than the maximum suggested by the AAP. Almost 1 in 20 watch TV for five hours or more per day (Table 31). The more time a child spends in front of a screen watching TV or videos, the less time they have to engage in creative, social, and physical activities necessary for development.

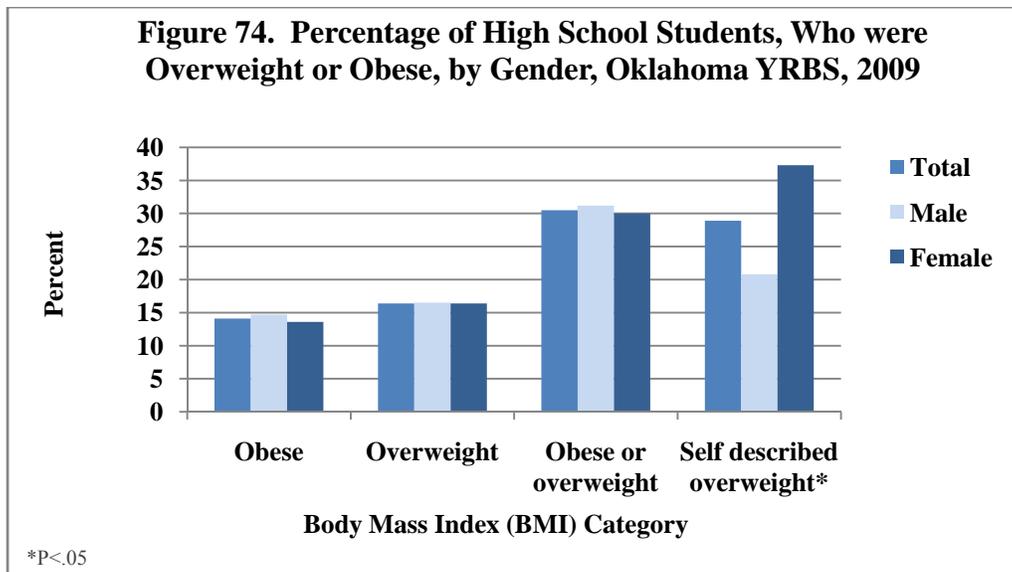
Table 31. Hours of Television Viewing Among Toddlers, TOTS, 2008		
Question	Percentage	95% CI
On an average day, how many hours does your two-year-old usually watch TV or videos?		
Total		
Don't own a television	0.1	0.0, 0.3
Zero hours	5.1	3.4, 7.5
More than zero, less than one hour	30.0	26.2, 34.2
One hour	11.1	8.7, 14.0
Two hours	25.3	21.7, 29.3
Three hours	12.9	10.2, 16.2
Four hours	5.1	3.4, 7.5
Five or more hours	4.5	2.8, 7.0
Don't know/Unknown	5.9	4.1, 8.5

For some families, toddler TV and video watching is more prevalent than others. Mothers who were less than 20 years-old when they delivered their toddler were more likely to have a two-year-old who watched TV for two hours or more (Figure 73). African American/Black and American Indian mothers were more likely to report screen time of two hours or more than white mothers. Ethnicity was not significant (data not shown).

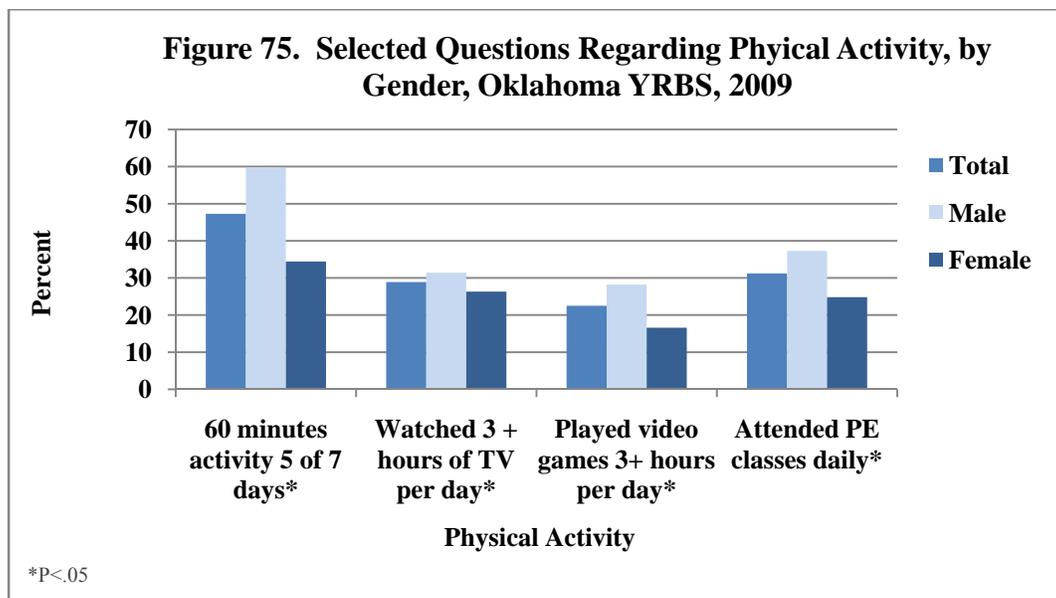


Obesity in children ages 6-11 has increased from 6.5% to 17% in the past 30 years. Childhood obesity is a public health concern as it increases the risk of cardiovascular disease, asthma, and Type II diabetes later in life. Childhood obesity also increases the risk of obesity in adulthood, particularly with the onset of obesity at an earlier age (National Center for Health Statistics (NCHS), 2009). Physical inactivity, in addition to increased and prolonged exposure to TV screen time, increases the probability of obesity in childhood. Results from the 2007-2008 1GHS show that fewer than half (44.5%) of parents/guardians reported that their first grader spent one hour or less watching TV, playing video or computer games, or surfing the internet. Nearly half (47.9%) spent 2-3 hours per day, and 7.5% spent 4 or more hours per day. Less than one-third (32.0%) of parents/guardians reported that their first graders participated in some sort of physical activity for at least 20 minutes each day (data not shown).

Data from the 2009 Oklahoma YRBS show that nearly 15% of public high school students are obese, that is, at or above the 95th percentile (Figure 74). An additional 16% are overweight, which is at or above the 85th percentile but below the 95th percentile. While no difference existed by gender for overweight or obesity, females were significantly more likely than males to describe themselves as overweight at 37% and 28%, respectively.



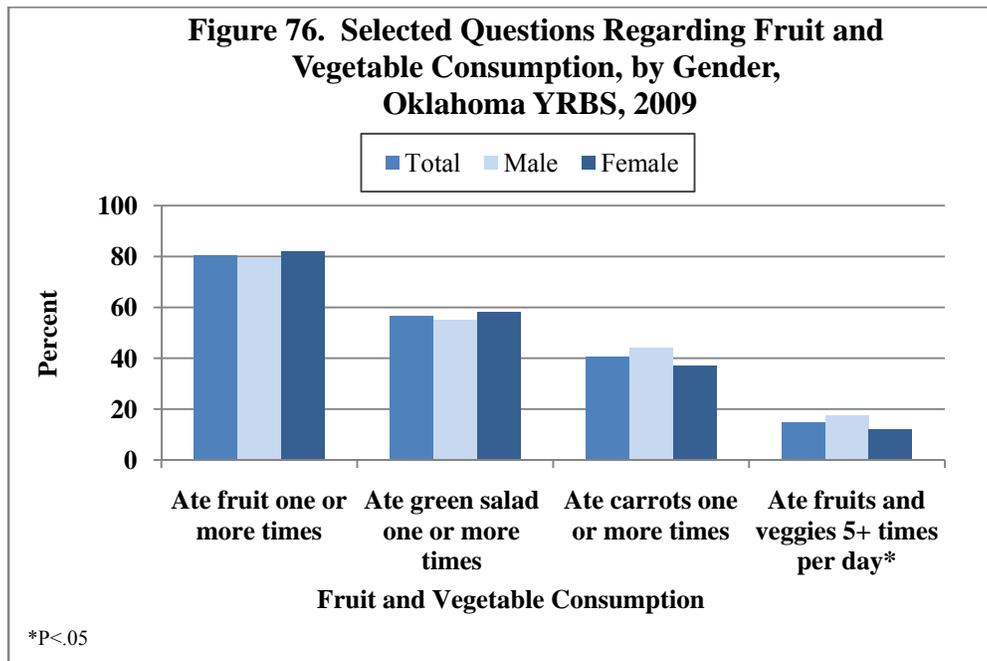
Differences were observed by gender for physical activity (Figure 75). Males were significantly more likely than females to have engaged in 60 minutes of physical activity on five of the previous seven days, to have watched three or more hours of TV per day, to have played video games three or more hours per day, and to have attended physical education (PE) classes daily at school.



- **Nutrition**

Proper diet and nutrition is an important component of maintaining a healthy weight and preventing the development of chronic diseases. This is especially true for children and adolescents since their bodies are in such a critical stage of development. Currently, few state sources collect data on child nutrition in Oklahoma. Recent revisions to several state surveys

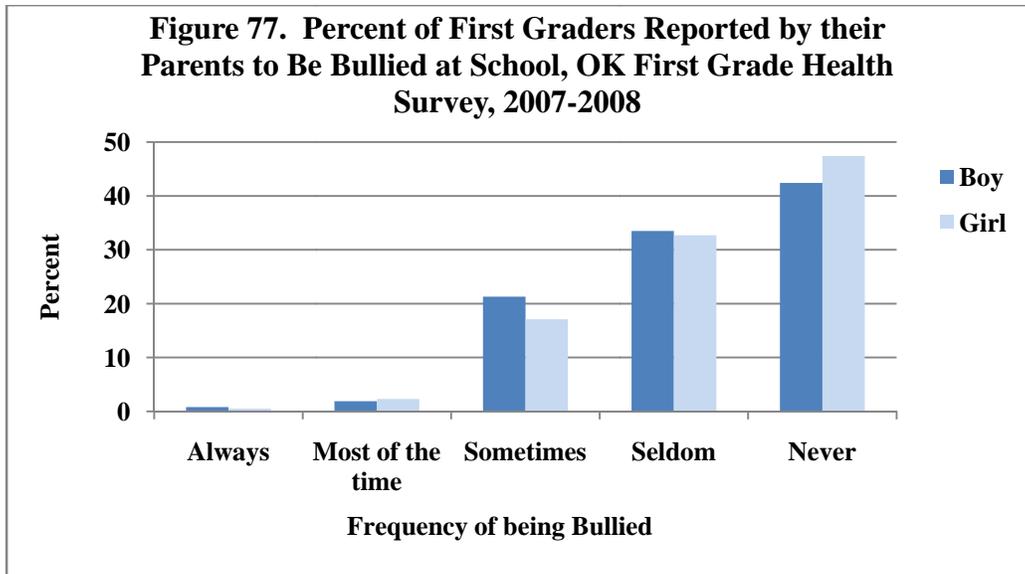
will include additional questions related to nutrition among the state’s child population. Several questions from the YRBS asked about fruit and vegetable consumption. YRBS data for 2009 showed that nearly 80% of public high school students ate fruit one or more times during the past seven days before the survey (Figure 76). Slightly more than half of students ate green salad one or more times during the past seven days, which was down from 66.4% of students in 2003.



Bullying

Bullying poses serious social and health problems for children of all ages, not only for the victim but for the aggressor as well. Bullying can be verbal or physical, or include exclusion from social groups. Cyber-bullying, or bullying using electronic means such as text messaging, email, or the use of social messaging boards, is also becoming a prominent problem in the youth population, mostly affecting pre-adolescent and adolescent youth. Research has shown that victims of bullying are more likely to experience depression and issues of low self-esteem than children who are not bullied. Children who are bullied on a weekly basis experience additional health and social problems such as anxiety and insomnia more frequently than children who are not bullied or who are bullied less often (Harachi, Catalano, & Hawkins, 1999).

The 2007-2008 1GHS asked only one question about bullying “How often is your first grader bullied at school?” The following definition was provided in the survey: *Bullying can be physical, mental, or emotional. It is repeated actions or gestures that have the intent to harass, harm, or humiliate another person.* More than half (55%) of first graders were reported by their parents to have been bullied at school (Figure 77). Differences were observed by gender as 57.6% of first grade boys were bullied compared to 52.6% of first grade girls.

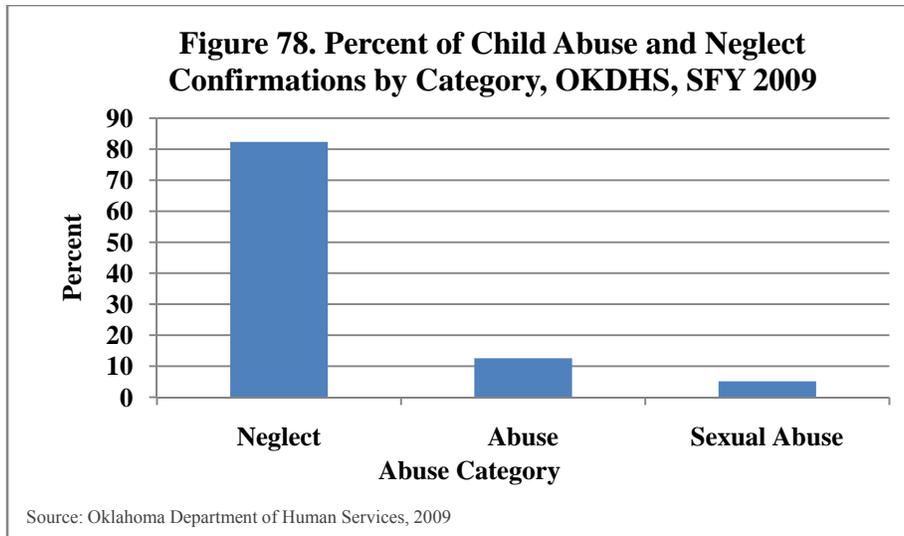


In addition, YRBS 2009 data reveal that nearly one in five students (17.5%) reported to have been bullied at school in the past 12 months. The following definition of bullying was provided in the YRBS: *Bullying is when 1 or more students tease, threaten, spread rumors about, hit, shove, or hurt another student over and over again. It is not bullying when 2 students of about the same strength or power argue or fight or tease each other in a friendly way.* Statistically significant differences existed among gender as 20.6% of females reported to have been bullied at school in the past 12 months compared to 14.6% of males. Ninth grade females reported the highest percentage of being bullied at 24.5%, while twelfth grade males reported the lowest percentage of being bullied at 15.7% (data not shown).

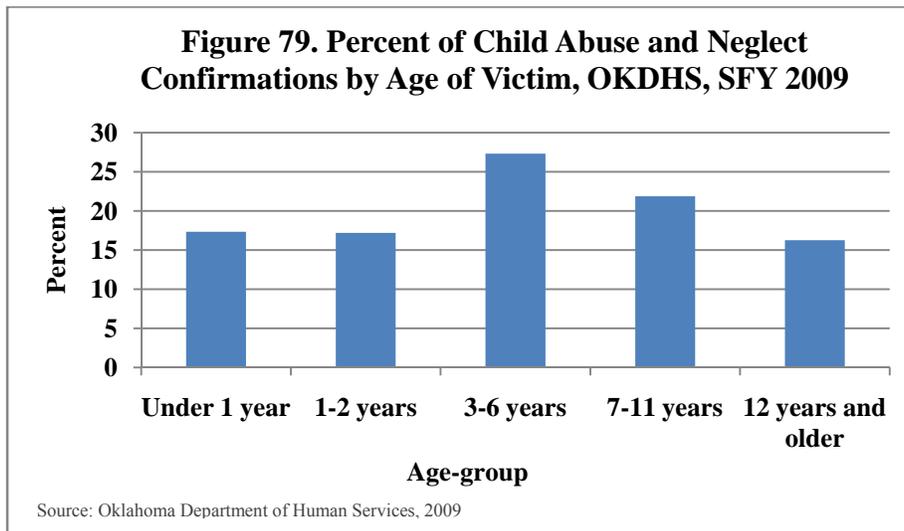
Child Abuse and Neglect

In SFY 2009 there were 8,605 confirmed reports of child abuse and neglect. This was significantly lower than the 11,000 confirmed in SFY 2008, and the 16,000 confirmed in SFY 2007. A review of child welfare in Oklahoma by the Child Health Panel at the OKDHS highlighted key points that may explain the decrease in the number of children experiencing child abuse and neglect. The amount of money distributed for child support services increased three-fold from \$100 million in 1998 to \$325 million in 2009, possibly reducing stress among custodial parents and caregivers. In addition, Oklahoma has experienced record levels of adoptions over the past three fiscal years and had a record high of 1,531 finalized adoptions in SFY 2009. Furthermore, SFY 2009 saw the lowest number of children being removed from their permanent homes to enter foster care in over ten years.

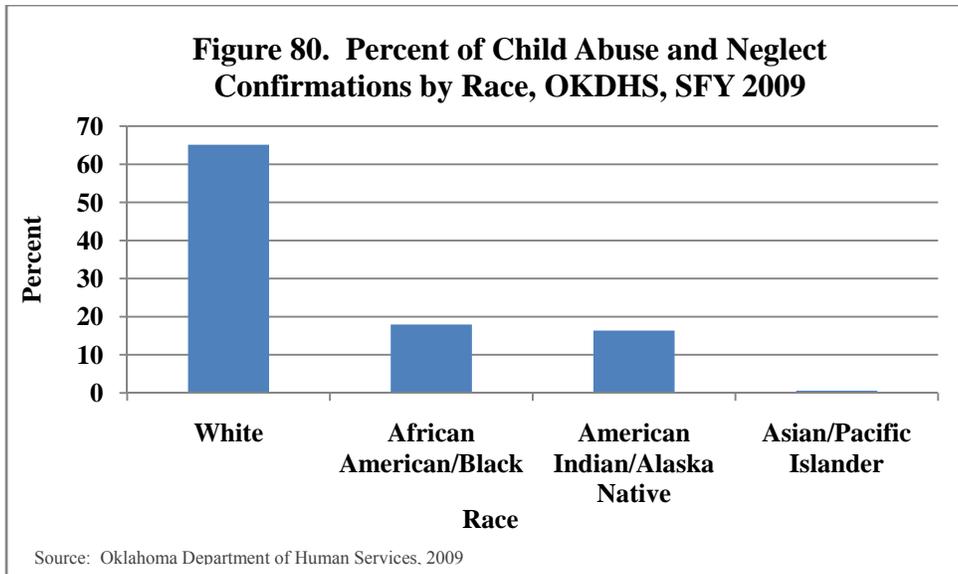
Child abuse and neglect reports are grouped into three categories: neglect, abuse, and sexual abuse. Examples of neglect are failure to protect, threat of harm, and substance abuse by caretaker. Examples of abuse are any abuse which is not sexual, such as beating or hitting, injury from spanking, slapping, and mental injury. Sexual abuse is any type of sexual abuse or exposure to the child. The most reported category was neglect at 82.3%, followed by abuse at 12.6%, then sexual abuse at 5.1% (Figure 78).



Slight differences were observed among gender as 51.3% of confirmations were female and 48.7% were male (data not shown). Figure 79 shows child abuse confirmations by age-group. Three to six-year-olds comprised the majority of confirmations at 27.3%, followed by 7-11 year-olds at 21.9%, under one year of age at 17.3%, 1-2 years at 17.2% and 12 years and older at 16.3%.

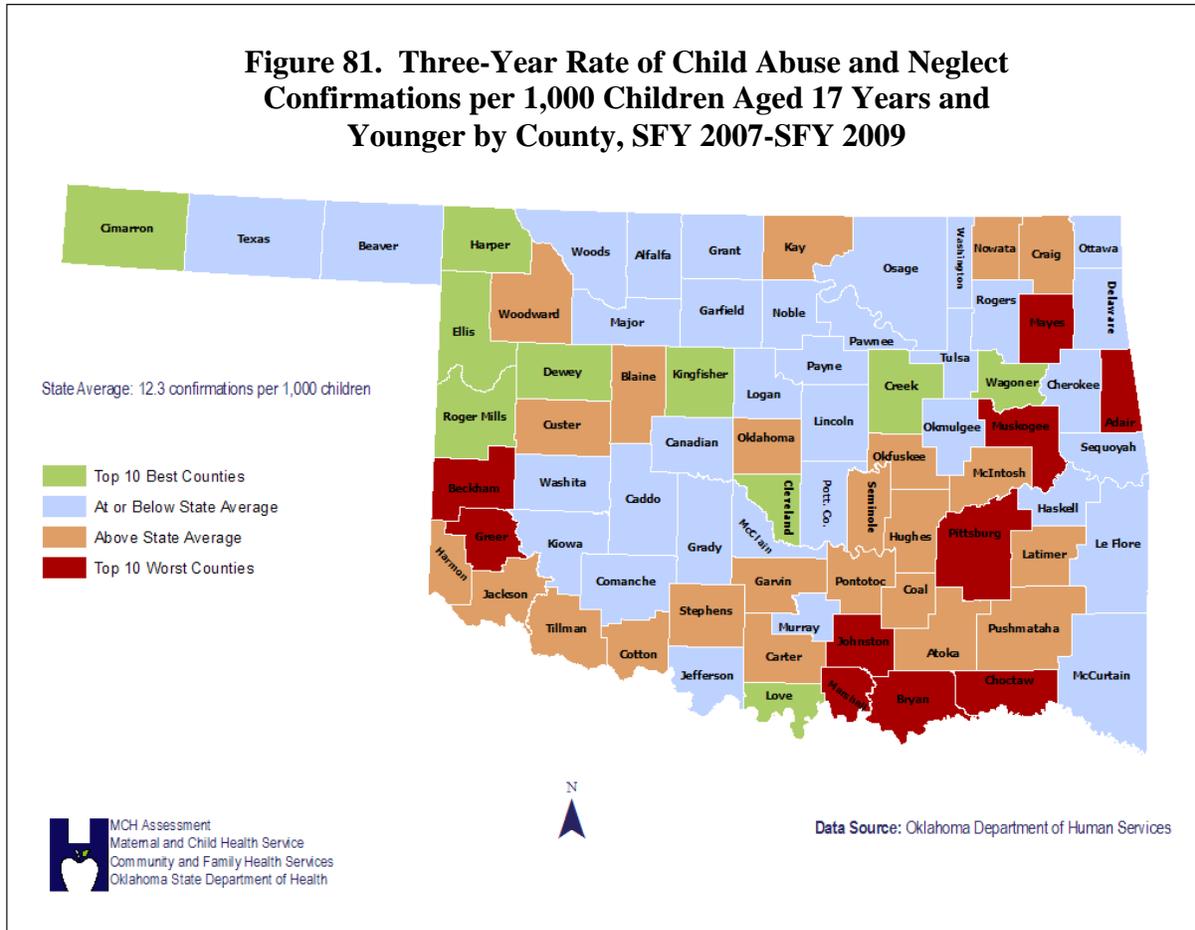


Significant disparities were observed by race. While whites comprised the majority of cases at 65.1%, African American/Blacks and American Indians/Alaska Natives were disproportionately represented as they comprised 34.3% of cases yet were approximately 24% of the population as a whole during this time frame (Figure 80).



Disparities also exist among counties for child abuse and neglect rates. A child abuse and neglect rate is the number of confirmed reports per 1,000 children aged 17 years and younger. The state average child abuse and neglect rate from SFY 2007 to SFY 2009 was 12.3 confirmations per 1,000 children aged 17 years and younger. Figure 81 displays child abuse and neglect rates by county. The ranges selected reflect the top 10 best counties, counties at or below the state average, counties above the state average, and the top 10 worst counties. Ellis County had the lowest child abuse and neglect rate at 2.2 confirmations per 1,000 children aged 17 years and younger. Conversely, Pittsburg County had the highest child abuse and neglect rate at 28.4 confirmations per 1,000 children aged 17 years and younger. Eight of the 10 worst counties were in the eastern half of the state with the largest cluster in the southeastern region of the state. Six of the ten best counties were in the western and northwestern regions of the state. The county with the largest metropolitan area, Oklahoma County, had a child abuse and neglect rate above the state average at 16.7 confirmations per 1,000 children aged 17 years and younger. Tulsa County had a child abuse and neglect rate below the state average at 8.6 confirmations per 1,000 children aged 17 years and younger.

Figure 81. Three-Year Rate of Child Abuse and Neglect Confirmations per 1,000 Children Aged 17 Years and Younger by County, SFY 2007-SFY 2009



Oklahoma has more than 10 home visitation programs currently being implemented throughout the state. Home visitation programs, such as Oklahoma Parents as Teachers, Early Head Start, Children First, and Healthy Start, to name a few, offer a variety of family-centered services to assist pregnant women, new mothers, and families with young children. Not all models are the same but most aim to positively impact one or more child or family outcomes across three primary domains: maternal and child health; early childhood development (including social, emotional, and cognitive development); and family/parent functioning. In SFY 2009, home visitation programs in Oklahoma served 12,761 families which included pregnant women, new mothers, and families with children (totaling 1,835 parents, and 7,247 children). Since not all programs reported ‘numbers served’, these figures represent at the very least a minimum number served. Some programs have enrollment requirements, such as, only serving low-income families or first-time mothers; however, it is often these very factors that put children at higher risk for abuse and neglect.

Ensuring the continuous delivery of appropriate and vital services for children in need is paramount, not only in protecting the children of Oklahoma, but also in laying the foundation to help children thrive. Three levels of prevention make up this continuum of care: primary prevention; secondary prevention; and tertiary prevention. A matrix developed by the Office of Child Abuse Prevention (OCAP) outlines 27 types of services or programs that should be

available in a community to ensure the availability and delivery of appropriate services for families and children in need. Of the 27 services, 13 are in the primary prevention category, five are in the secondary prevention category, and the remaining nine are in the tertiary prevention category. While all three levels of prevention are vital, primary prevention is inarguably the most important. However, while every county in Oklahoma has at least one secondary prevention service available and most counties have two or more tertiary prevention services available, two-thirds (51) of Oklahoma counties do not have one primary prevention service or program at their disposal. If Oklahoma is to see continued improvement in the health of its children, then a ‘prevention first’ mentality must be adopted and implemented throughout the state.

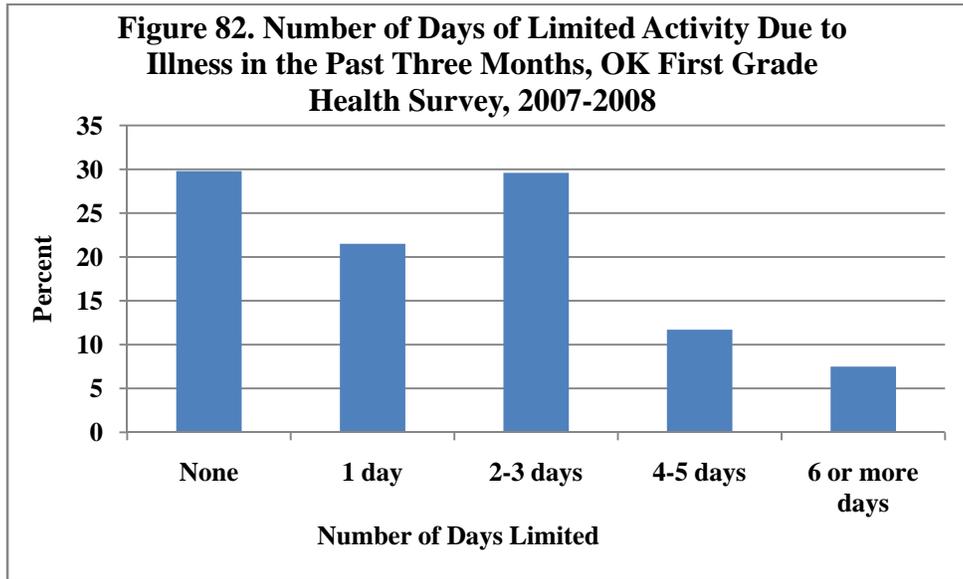
Morbidity

The 2008 TOTS found that over half of Oklahoma’s toddlers had one or more days of limited activity due to illness in the three months before the survey was administered. Over twelve percent (12.4%) stated their child’s activity was limited for four or more days (Table 32).

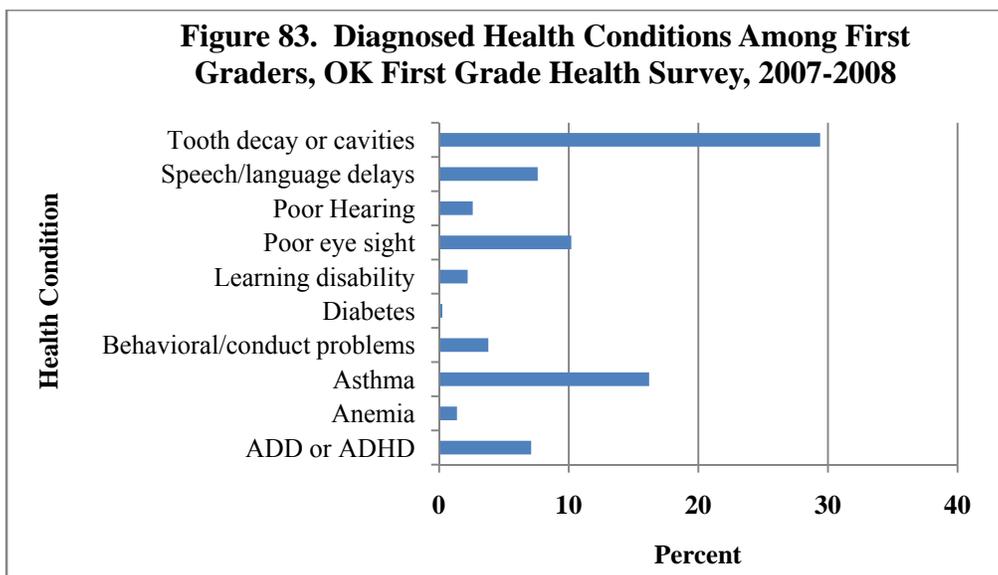
When asked if their two-year-old had ever been diagnosed with various health conditions, 14.2% indicated their child had been diagnosed with an asthma-like condition, including wheezing; 15.4% indicated their toddler had croup, bronchitis, or bronchiolitis; and 5.6% indicated their child had been diagnosed with pneumonia since birth.

Question	Percentage	95% CI
During the past three months, how many days was your two-year-old’s activity limited due to illness?		
None	49.0	44.6, 53.5)
One day	13.9	11.2, 17.0)
2-3 days	24.7	21.1, 28.6)
4-5 days	8.5	6.2, 11.4)
6+ days	3.9	2.5, 6.0)
Unknown	0.1	0.0, 0.3)
Has a health care provider ever said that your two-year-old has any of the following conditions?		
Asthma-like condition	14.2	11.6, 17.3%
Croup, bronchitis, bronchiolitis	15.4	12.5, 18.7
Pneumonia	5.6	4.1, 7.8
Epilepsy, convulsions, or seizures without fever	0.8	0.3, 1.8
Heart condition requiring surgery or medication	0.3	0.2, 0.4
Ongoing bone, joint, or other orthopedic conditions	0.3	0.2, 0.5
Anemia	3.9	2.5, 6.1
Vision problems requiring correction	0.5	0.3, 0.6
Hearing problems	2.8	1.6, 4.7
Tooth decay or cavities	2.5	1.3, 4.6
Developmental delays	2.9	2.0, 4.3

The 1GHS asked several questions that help identify the prevalence of first graders who may have special needs. One aspect of childhood morbidity is limited activity due to illness. Approximately half (48.8%) of first graders' parents/guardians reported their child experienced limited activity due to illness on two or more days during the past three months. One in five first graders (21.5%) experienced limited activity due to illness for one day in the past three months and 29.8% experienced no days of limited activity (Figure 82).



When asked to identify diagnosed health conditions, the most commonly reported conditions by parents/guardians of first graders were tooth decay/cavities at 29.4%, followed by asthma (16.2%), and poor eyesight (10.1%) (Figure 83). Furthermore, 21.7% of first graders were, at the time of the survey, taking a medication other than a vitamin prescribed by a health care provider (data not shown).



- **Asthma**

Among the 14% of toddlers with asthma, certain disparities exist (Table 33). Children with an asthma-like condition were more likely to not have health insurance, were more likely to have a mother 25 years or older, were more likely to have an African American/Black mother, a mother who is non-Hispanic, and were more likely to have a mother with a high school education or greater.

Table 33. Prevalence of Toddler Asthma-like Conditions by Selected Maternal Demographics, TOTS, 2008		
Question	Percentage	95% CI
Health care provider ever said that your two-year-old has an asthma-like condition, including wheezing- YES		
Insurance status of two-year-old		
No insurance	22.4	10.4, 41.8
Medicaid	12.4	9.1, 16.8
Private, group, HMO, or other insurance	15.6	11.6, 20.6
Maternal Age		
<20 years	8.8	3.9, 18.4
20-24 years	12.8	8.6, 18.5
25-29 years	17.1	12.1, 23.5
30+ years	15.0	10.2, 21.5
Maternal Race		
White	12.4	9.8, 15.7
African-American	37.3	24.1, 52.7
American Indian	10.2	4.5, 21.3
Other	4.1	1.0, 15.9
Hispanic Origin		
Non-Hispanic	15.2	12.3, 18.7
Hispanic	8.0	3.9, 15.7
Maternal Education		
< 12 years	2.8	1.8, 4.5
12 years	18.5	13.5, 24.9
> 12 years	16.1	12.2, 20.9

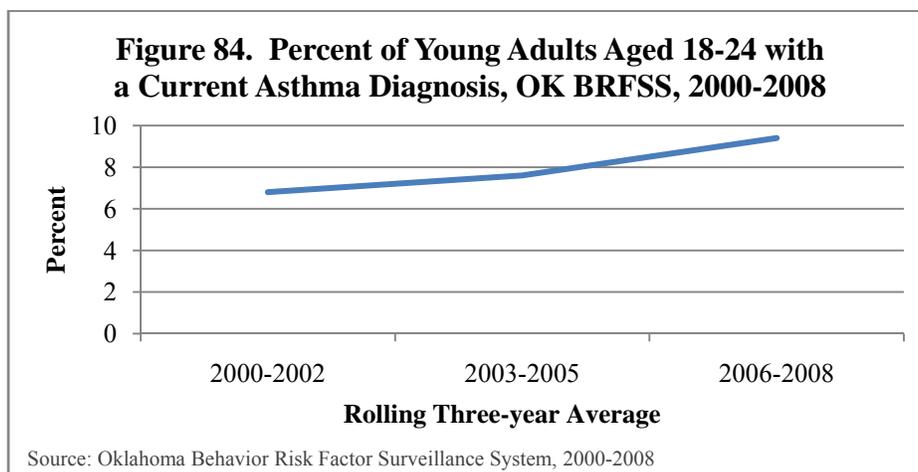
Table 34 shows data from the 2007 National Survey of Children’s Health. There are two categories for asthma, the first is for children who had asthma at some point in their life but not currently and the second category includes children who currently have asthma. Oklahoma was higher than the U.S. for both having had asthma at some point in their life but not currently and for currently having asthma (The Child and Adolescent Health Measurement Initiative, 2003, 2007).

Data from the 1GHS indicate that 16% of first graders surveyed have been diagnosed with asthma (data not shown).

Table 34. Percentage of Children with Asthma Aged 0-17, NSCH, 2007		
	Had at some point but not currently	Currently have asthma
U.S.	4.5	9
Oklahoma	5.7	11.7

Source: National Survey of Children's Health, 2007

The Oklahoma BRFSS asked the survey participants if they have a current asthma diagnosis. Due to small numbers, data were aggregated into three year averages, and while the numbers were still relatively small it is apparent there was an increasing trend in the percent of those with asthma from 2000 to 2008 (Figure 84).



Substance Use

Drug use among adolescents is associated with academic failure, unwanted pregnancy, truancy, violence, and suicide. According to SAMHSA National Survey on Drug Use and Health, adolescents aged 12-17 who used an illicit drug in the past 12 months were almost twice as likely to have engaged in violent behavior. The report also showed a positive association between violent behavior and drug use as the likelihood of having engaged in violent behavior increased with the number of drugs used in the past 12 months (Substance Abuse and Mental Health Services Administration, 2009). The Oklahoma YRBS asked several questions regarding substance abuse (Table 35). The following substance abuse questions saw significant decreases from 2003-2009: the percentage of students who used marijuana at least once in their lifetime decreased from 42.5% in 2003 to 31.9% in 2009; the percentage of students who used marijuana before age 13 decreased from 11.1% in 2003 to 7.3% in 2009; the percentage of students who used marijuana during the past 30 days decreased from 22.0% in 2003 to 17.2% in 2009; the percentage of students who used methamphetamines one or more times during their lifetime decreased 9.9% in 2003 to 4.8% in 2009; and the percentage of students who were offered, sold, or given an illegal drug by someone on school property during the past 12 months decreased from 22.2% in 2003 to 16.8% in 2009. Although the percentage of students who “sniffed glue, breathed the contents of aerosol spray cans, or inhaled any paints or sprays to get high one or more times during their life” appears to be on an upward trend from 9.9% in 2003 to 12.7% in

2009, the increase is not statistically significant. However, while additional years of data are needed to confirm this trend, the increase during this period is worth noting.

Percentage of students who.....	2003	2005	2007	2009
used marijuana one or more times during their life*	42.5	39.3	33.2	31.9
used marijuana before age 13*	11.1	9.4	8.1	7.3
used marijuana one or more times during the past 30 days*	22.0	18.7	15.9	17.2
used marijuana on school property one or more times during the past 30 days	4.3	3.0	2.6	2.9
used any form of cocaine one or more times during their life	9.2	8.7	7.3	7.4
used any form of cocaine during the past 30 days	3.4	2.6	3.0	2.3
sniffed glue, breathed the contents of aerosol spray cans, or inhaled any paints or sprays to get high one or more times during their life	9.9	12.0	11.7	12.7
used heroin one or more times during their life	2.7	2.1	2.2	2.3
used methamphetamines one or more times during their life*	9.9	7.1	5.5	4.8
used ecstasy one or more times during their life	7.2	6.7	5.9	8.1
took steroid pills or shots without a doctor's prescription one or more times during their life	4.8	3.7	4.7	5.3
used a needle to inject any illegal drug into their body one or more times during their life	2.4	2.0	2.1	1.7
were offered, sold, or given an illegal drug by someone on school property during the past 12 months*	22.2	18.4	19.1	16.8

* Significant change over time

- **Alcohol Use**

Mortality data show that 22,073 persons in the U.S. died from alcohol-induced deaths in 2006 (Heron, Hoyert, Murphy, Xu, Kochanek, & Tejada-Vera, 2009). Alcohol use among teens and young adults is a serious public health concern as excessive alcohol consumption is responsible for more than 4,600 deaths of youth less than 21 years of age in the U.S. each year, (Centers for Disease Control and Prevention, 2010). Additionally, research has shown that alcohol use among underage youth is strongly correlated with health problems such as smoking and alcohol-impaired driving as well as social problems such as increased sexual activity and poorer school performance (Miller, Naimi, Brewer, & Jones, 2006). The Oklahoma YRBS asked six questions about alcohol use. Two additional questions were asked regarding driving a vehicle while under the influence of alcohol or riding with another driver who had been drinking alcohol. Nearly three-fourths (71.5%) of students reported they have had at least one drink of alcohol in their lifetime. One in five students reported having their first drink of alcohol before age 13; however, males were significantly more likely than females to have their first drink by age 13 at 23.6% and 15.3%, respectively. Of those who reported current alcohol use, females were significantly more likely than males to have gotten the alcohol from someone else at 51.8% and 40.5%, respectively (Table 36).

Percentage of students who....	Total	Male	Female
had at least one drink of alcohol on one or more days during their life	71.5	68.3	74.8
had their first drink of alcohol before age 13*	19.5	23.6	15.3
had at least one drink of alcohol on one or more of the past 30 days	38.9	38.2	39.6%
had five or more drinks of alcohol in a row on one or more of the past 30 days	23.9	25.9	21.9
had at least one drink of alcohol on school property on one or more of past 30 days	3.86	3.96	3.75
Of those who reported current alcohol use, the percentage who got the alcohol they drank from someone who gave it to them during the past 30 days*	46.2	40.5	51.8

* Significant difference by gender, P <.05

Nearly one-fourth (23.9%) of high school students reported having five or more drinks in a row (binge drinking) in the past 30 days, which is significantly higher than the Healthy People 2010 goal of 11% (Table 37). BRFSS data from 2006-2008 show that 20.4% of 18-24 year olds engaged in binge drinking (having five or more drinks on one occasion), which is not significantly different than the Healthy People 2010 goal of 20% of college students (data not shown).

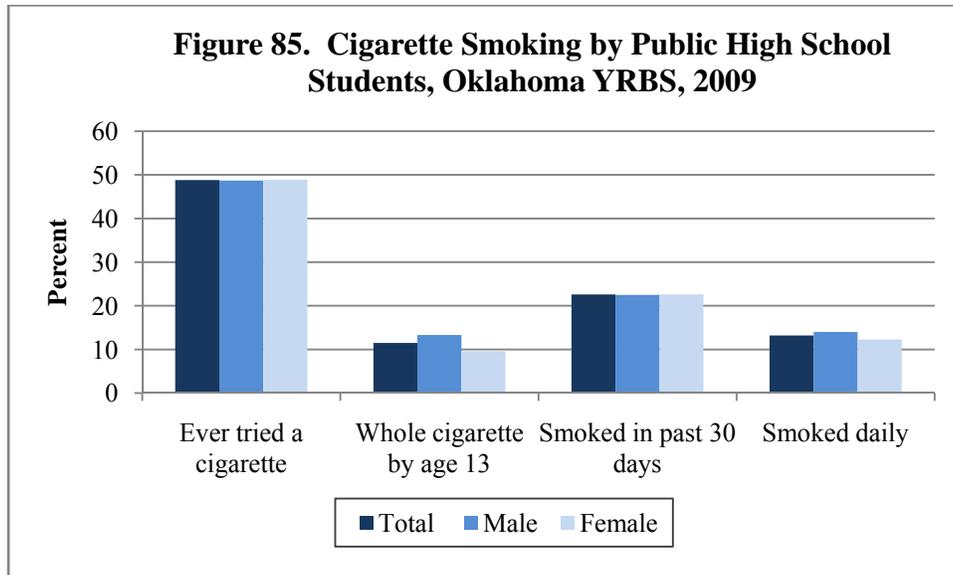
Data from the YRBS show significant reductions in some alcohol use behaviors from 2003-2009 (Table 30). The percentage of students who had at least one drink of alcohol on one or more days during their life decreased from 78.6% in 2003 to 71.4% in 2009. The percentage of students who had their first drink of alcohol before the age of 13 years decreased from 26.8% in 2003 to 19.4% in 2009. The percentage of students who had at least one drink of alcohol on one or more of the 30 days before the survey decreased from 47.8% in 2003 to 39.0% in 2009. Among those students who reported current alcohol use, the percentage of students who received the alcohol they drank from someone who gave it to them in the 30 days before the survey, increased from 40.5% in 2007 to 46.0% in 2009. While other alcohol use behaviors experienced some change, they were not statistically significant.

Percentage of students who....	2003	2005	2007	2009
had at least one drink of alcohol on one or more days during their life*	78.6	76.5	75.6	71.4
had their first drink of alcohol before age 13*	26.8	25.2	23.3	19.4
had at least one drink of alcohol on one or more of the past 30 days*	47.8	40.5	43.1	39.0
had five or more drinks of alcohol in a row on one or more of the past 30 days	34.0	26.6	27.9	24.0
had at least one drink of alcohol on school property on one or more of past 30 days	3.2	3.8	5.0	3.9
Of those who reported current alcohol use, the percentage who got the alcohol they drank from someone who gave it to them during the past 30 days*	-	-	40.5	46.0

*Significant change over time

- **Tobacco Use**

According to the CDC, cigarette smoking accounts for more than 400,000 deaths each year in the U.S. making it the leading cause of preventable death. Tobacco use is a leading health indicator outlined in Healthy People 2010 Objective 27-2b. Data from the 2009 YRBS show that nearly half (48.8%) of public high school students had ever tried a cigarette (Figure 85); 11.5% of students had tried a whole cigarette by the time they were age 13; nearly one-fourth (22.6%) of students had smoked on at least one of the past 30 days; and 13.2% of students had smoked daily, that is, at least one cigarette every day for 30 days. No differences were observed amid any of the four cigarette use questions among gender.



Differences were observed by grade as 11th and 12th graders were more likely than 9th and 10th graders to have ever tried a cigarette (Figure 86). Nearly one-fourth (22.5%) of Oklahoma public high school students smoked on one or more of the past 30 days before the survey, which is significantly higher than the Healthy People 2010 Objective, 27-2b of 16%. Ninth graders were less likely than students in other grades to have smoked daily, that is, at least one cigarette every day for the past 30 days.

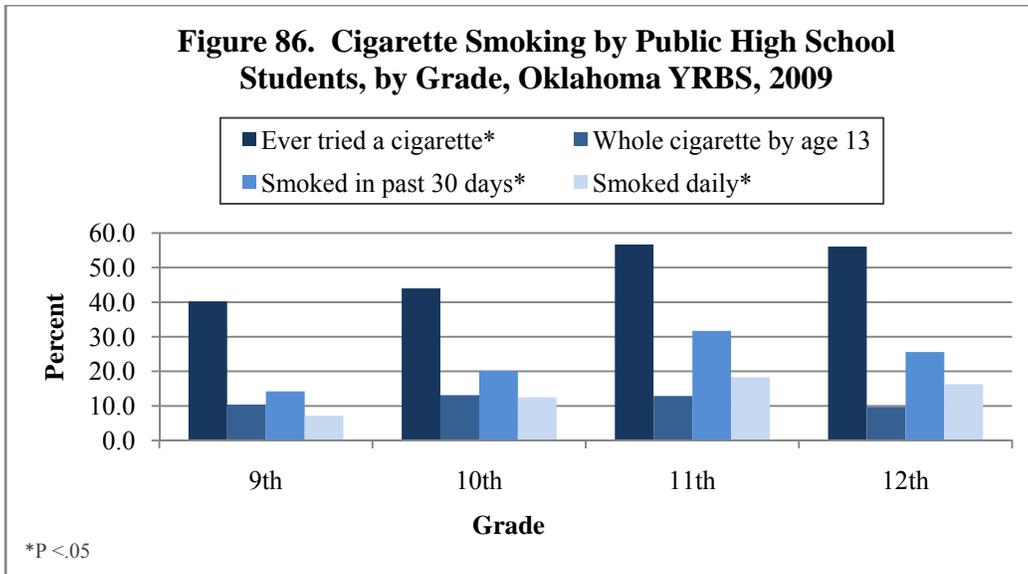
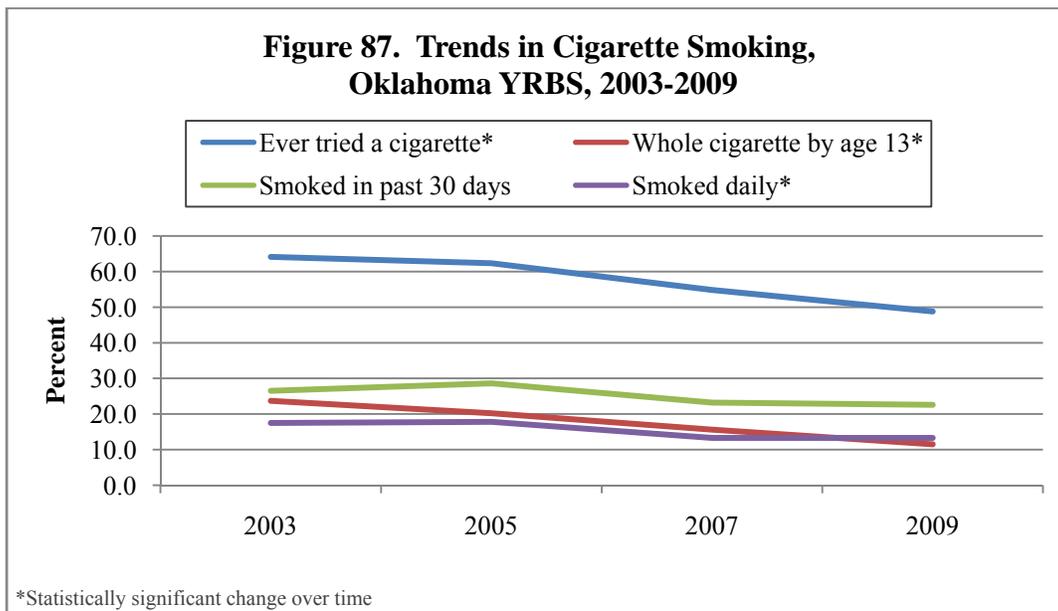


Figure 87 shows these same four cigarette use questions over time. Three out of four cigarette use behaviors saw statistically significant decreases from 2003-2009. Having smoked in the past 30 days did not see a statistically significant decrease.



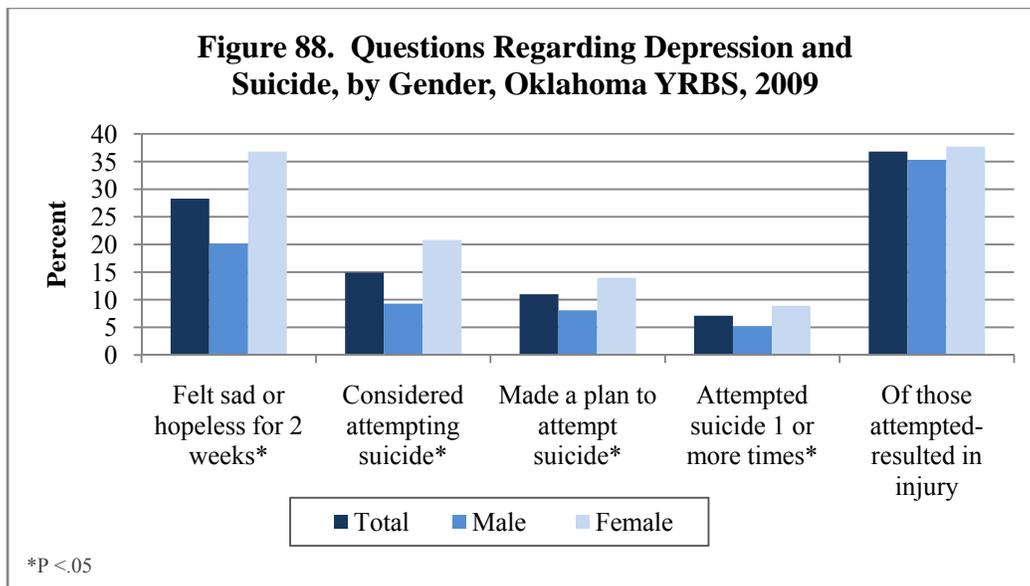
Depression/Suicide Ideation

Data from the 2005-2006 National Health and Nutrition Examination Survey (NHANES) indicate that in any two-week period, 5.4% of Americans 12 years of age and older experienced depression (Pratt & Brody, 2008). Depression is especially detrimental for adolescents because of the increased risk of suicide ideation. The YRBS asks high school students five questions related to depression and attempted suicide. Symptoms of depression include feeling sad or hopeless for a period lasting two weeks or longer that stops a person from doing some usual

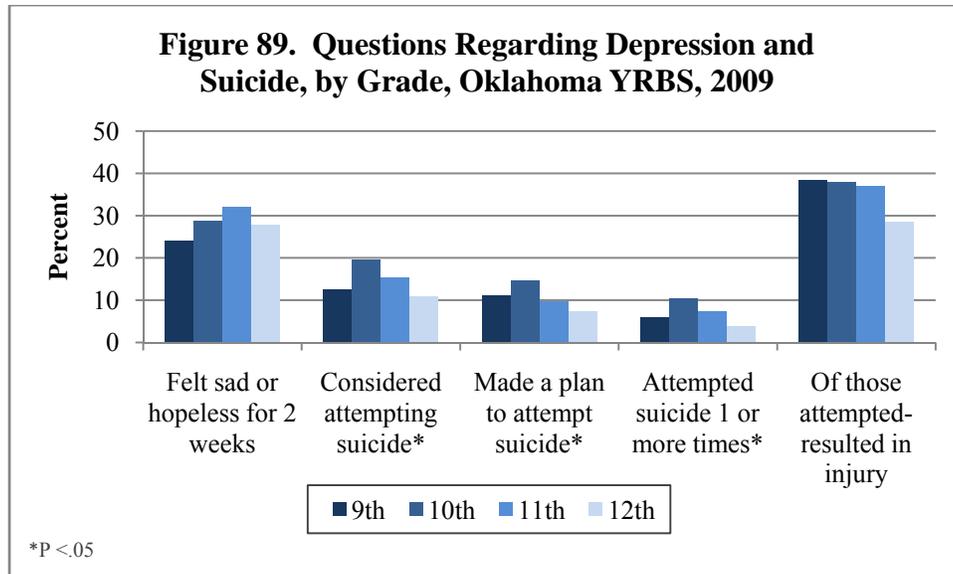
activities. While the YRBS does not ask about a clinical diagnosis of depression, it does ask about extended periods of sadness or hopelessness that affect normal daily activities. More than one-fourth of students (28.2%) reported they had felt so sad or hopeless almost every day for two weeks or more in a row during the past 12 months that they stopped doing some usual activities (Figure 88).

Disparities exist by gender as females were significantly more likely than males to experience extended periods of sadness and hopelessness at 36.8% and 20.1%, respectively. This is supported by national trends as younger children may have equal feelings of depression by gender but by high school females experience higher rates of depression. In addition, 14.9% of respondents reported they had seriously considered attempting suicide during the past 12 months before the survey. There is also significant gender disparity as females were more than twice as likely as males to consider attempting suicide at 20.8% and 9.3%, respectively.

Females (14.0%) were also more likely than males (8.1%) to have made a plan about how they would attempt suicide. Females were more likely than males to have attempted suicide one or more times at 8.9% and 5.2%, respectively. There was no statistical difference between males and females for the percent of suicide attempts that resulted in injury, poisoning, or overdose that required treatment by a doctor or nurse.



Differences were also observed by grade level for seriously considering attempting suicide, to have made a plan about how to commit suicide, and to have attempted suicide one or more times (Figure 89). There was no significant difference seen between grades for feeling sad or hopeless for two weeks in a row or for the percent of attempted suicides that resulted in an injury, poisoning, or overdose that required treatment by a doctor or nurse.



Sexual Behavior

According to a study titled “Trends in Premarital Sex in the United States, 1954-2003”, 95% of Americans have had sex before marriage and 74% have had sex by age 20 (Finer, 2007). Teens in the U.S. begin having sex at about the same age as teens in other developed countries, yet American teens have higher rates of pregnancy and STD infections (Alan Guttmacher Institute, 2001).

More than half (50.9%) of Oklahoma public high schools students have ever had sexual intercourse. Nearly 40% of students had sexual intercourse during the past three months (Table 38). One in five (19.9%) students had used alcohol or drugs at last sexual intercourse. Fourteen percent of students reported they used no contraceptive method at last sexual intercourse. Males were more likely than females to have had four or more sexual partners in their lifetime. Males were less likely than females to report they had ever been taught in school about acquired immune deficiency syndrome (AIDS) or HIV. Males were more likely than females to have used a condom at last intercourse.

<i>Percentage of students who.....</i>	Total	Male	Female
ever had sexual intercourse	50.9	51.2	50.7
had sexual intercourse before age 13	4.7	5.9	3.4
had sexual intercourse with 4 or more people in their lifetime*	17.7	20.1	15.2
had sexual intercourse during the past three months	39.9	39.5	40.3
had ever been taught in school about AIDS or HIV*	82.0	79.1	85.0
<i>Among students who had sexual intercourse during the past three months, the percentage who at last sexual intercourse....</i>	Total	Male	Female
used alcohol or drugs	19.9	19.6	20.2
used a condom*	56.7	64.1	49.5
no method was used to prevent pregnancy	14.0	11.9	16.1

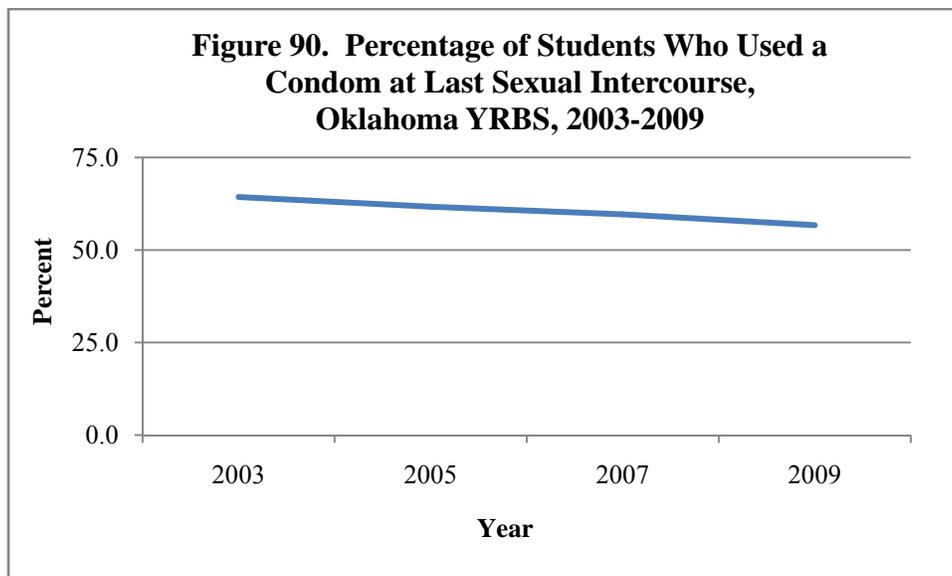
*P < .05

Significant differences were observed by grade as 9th graders were less likely as students in other grades to have ever had sexual intercourse. The percentage of students who had ever had sexual intercourse increased as age increased. Ninth graders were also less likely than students in other grades to have had sex with four or more people in their lifetime, to have had sex in the past three months, and to report they had ever been taught in school about AIDS or HIV. Differences were also observed by grade for having used alcohol at last sexual intercourse and having used a condom at last sexual intercourse (Table 39).

<i>Percentage of students who.....</i>	9th	10th	11th	12th
ever had sexual intercourse*	32.2	48.7	56.3	70.2
had sexual intercourse before age 13	4.9	4.6	5.9	3.0
had sexual intercourse with 4 or more people in their lifetime*	10.2	17.2	20.2	24.1
had sexual intercourse during the past three months*	22.9	36.8	43.6	58.8
had ever been taught in school about AIDS or HIV*	76.2	83.0	81.1	88.9
<i>Among students who had sexual intercourse during the past three months, the percentage who at last sexual intercourse....</i>	9th	10th	11th	12th
used alcohol or drugs*	16.2	29.9	13.2	20.1
used a condom*	63.6	62.4	52.5	52.6
no method was used to prevent pregnancy	13.8	16.1	12.2	13.8

*P < .05

Of all sexual behaviors reviewed, only one showed a statistically significant decrease over time. Among students who had sexual intercourse during the past three months, the percentage who used a condom at last sexual intercourse decreased from 64.3% in 2003 to 56.7% in 2009 (Figure 90).



- **Sexually Transmitted Diseases (STDs)**

Of the diseases that are notifiable to the CDC, Chlamydia trachomatis is the most commonly reported. A 2009 report indicates that 1,210,523 cases of sexually transmitted chlamydia infections were reported to the CDC in 2008, which is the highest number of cases ever reported to the CDC for any condition. The national rate for 2008 was 401.3 cases per 100,000 population, significantly higher than the 2007 rate of 367.5. Nationally, the highest age specific rates were among 15-19 year-olds at 3,275.8 cases per 100,000 population.

In Oklahoma, approximately 90% of the reported chlamydia cases were for persons between the ages of 15 and 29, with 75% between the ages of 15 and 24. Those aged 15-19 and 20-24 had rates of infection five times higher than the overall state rate, at 2,106 and 2,130 cases per 100,000 age-specific population, respectively (Figure 91). Oklahoma and Tulsa counties reported 51% of the total chlamydia cases in 2008.

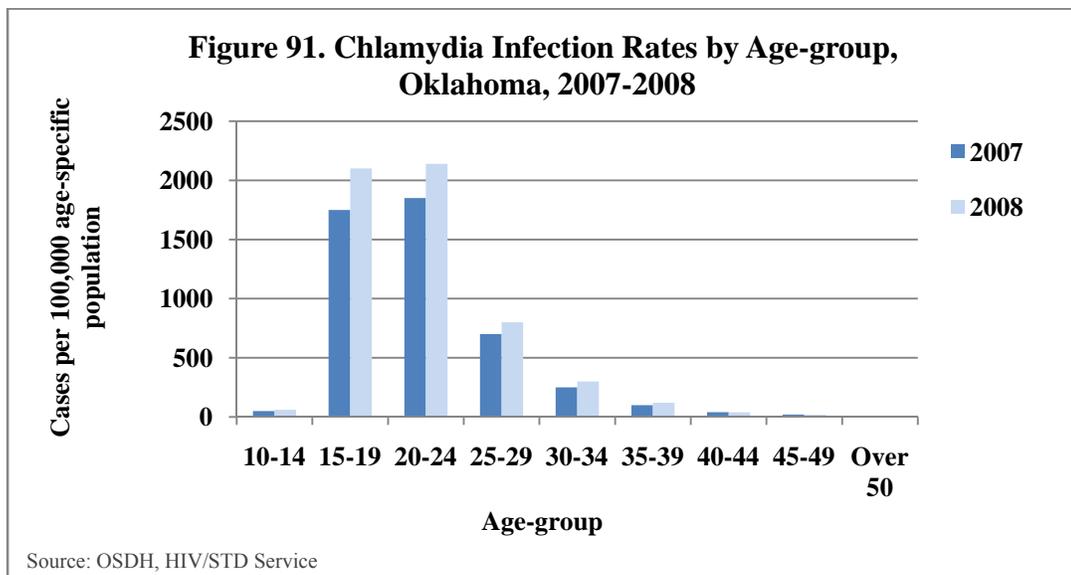
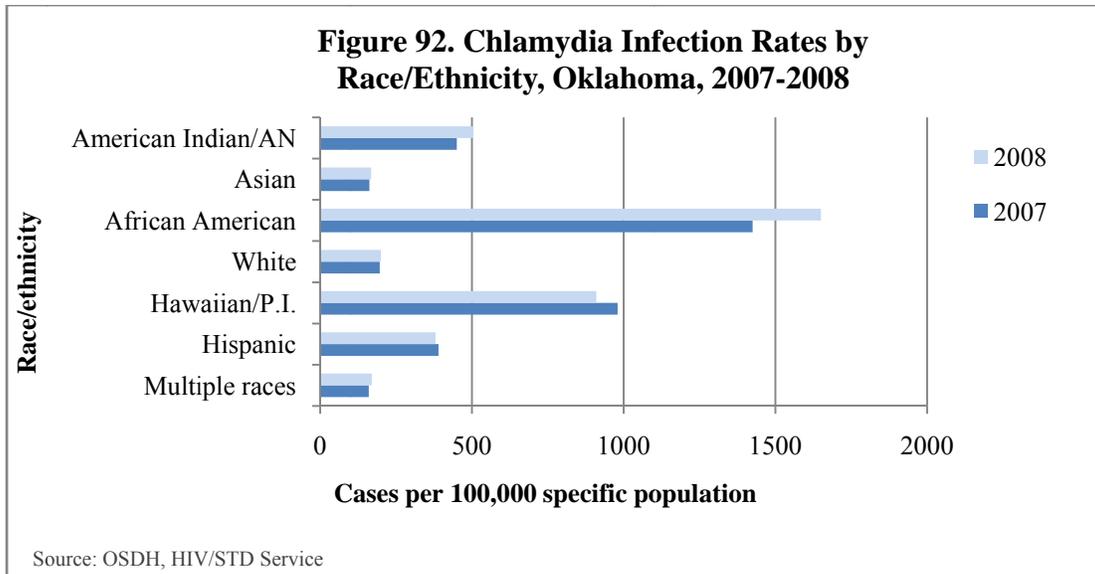


Figure 92 shows chlamydia rates by race and ethnicity. Throughout the needs assessment, Asians, Hawaiians, and Pacific Islanders have been presented as one group. This is a common practice and adheres to the Office of Management and Budget’s (OMB) 1977 directive on racial classification. However, to maintain the consistency to reporting OSDH, HIV/STD Service data, the following graph represents Asians as one group and Hawaiian and Pacific Islanders as another. African American/Blacks were disproportionately represented as well as Hawaiian/Pacific Islanders, and American Indian/Alaska Natives. African American/Blacks comprised less than 10% of the population as a whole but comprised more than 40% of the reported chlamydia cases in 2008 and had nearly twice the infection rate of any other racial and ethnic group.



High School Dropouts

Objective 7-1 of Healthy People 2010 is to increase the high school completion rate to 90%. According to the National Center for Education Statistics, Oklahoma was ranked 23rd in the nation with a 2006-2007 school-year average freshman graduation rate of 77.8%, which was 5.3% higher than the national average of 73.9%. Racial and ethnic subgroups show vast discrepancies. For instance, Asian/Pacific Islander graduation rates were 100%, compared to whites at 78.6%, American Indian/Alaska Natives at 77.3%, Hispanics at 75.0%, and African American/Blacks at 70.7%. The overall cost to Oklahomans associated to 2008 dropouts, as reported by the Alliance for Excellent Education, will amount to almost 3.8 billion dollars in lost wages over their lifetimes. Racial minorities experience this event more frequently. Reports state that close to 50% of African American/Blacks and Hispanics fail to complete high school on time and graduate (U.S. Department of Education, 2006–2007).

It must be noted that accurate and state comparable graduation rates have historically been difficult to ascertain. Examples of this inaccuracy for the 2005-2006 school year are as follows: State-reported for No Child Left Behind Act of 2001, 85%; U.S. Department of Education, 78%; Education Week, 71%. For the 2010-2011 school year federal regulations will require all states to apply a common formula (U.S. Department of Education, 2006–2007).

Juvenile Violence

- **Violence**

The percentage of students who carried a weapon on school property was 5.5%, which was slightly higher than the Healthy People 2010 objective of 4.9%. Significant differences were observed by gender, however, as males were more likely than females to have carried a weapon in the past 30 days, to have carried a gun in the past 30 days, to have carried a weapon on school property in the past 30 days, to have been threatened or injured with a weapon on school property in the past 12 months, to have been in a physical fight in the past 12 months, to have been in a physical fight in which their injury had to be treated by a doctor or nurse, and to have been in a physical fight on school property in the past 12 months (Table 40).

Table 40. Questions Regarding Violence by Gender, Oklahoma YRBS, 2009

Percentage of students who.....	Female	Male	Total
Carried a weapon such as a gun, knife, or club one or more of the past 30 days*	7.7	29.9	18.9
Carried a gun on one or more of the past 30 days*	0.6	10.5	5.6
Carried a weapon such as a gun, knife, or club on school property one or more of the past 30 days*	3.6	7.4	5.5
Did not go to school on one or more of the past 30 days because they felt they would be unsafe at school or on their way home from school	4.3	3.9	4.1
Had been threatened or injured with a weapon on school property one or more times during the past 12 months*	4.0	7.6	5.8
Were in a physical fight one or more times in the past 12 months*	22.5	38.6	30.7
Were in a physical fight one or more times in the past 12 months in which they were injured and had to be treated by a doctor or nurse*	1.9	6.1	4.0
Were in a physical fight on school property one or more times in the past 12 months*	8.2	17.3	12.8
Were ever hit, slapped, or physically hurt on purpose by their boyfriend or girlfriend during the past 12 months	6.2	8.6	7.4
Had ever been physically forced to have sexual intercourse when they did not want to*	9.1	3.8	6.4
*Statistically significant difference between males and females: $P < .05$			

Statistically significant differences were also observed among grade levels for violent behaviors (Table 41). Differences were observed for having been in a physical fight one or more times in the 12 months before the survey was administered; 9th graders reported the highest percentage at 36.8%, followed by 10th graders at 34.1%, 11th graders at 30.0%, and 12th graders at 19.9%. Differences were also observed for having been in a physical fight on school property in the 12 months before the survey was administered; 10th graders reported the highest percentage at 17.9%, followed by 9th graders at 16.6%, 11th graders at 10.1%, and 12th graders at 4.5%. No other statistically significant differences were observed by grade level for violent behaviors.

Table 41. Questions Regarding Violence by Grade Level, Oklahoma YRBS, 2009

Percentage of students who.....	9th	10th	11th	12th
Carried a weapon such as a gun, knife, or club one or more of the past 30 days	22.9	21.2	16.6	14.0
Carried a gun on one or more of the past 30 days	5.4	7.2	5.1	4.3
Carried a weapon such as a gun, knife, or club on school property one or more of the past 30 days	7.1	5.2	6.0	3.5
Did not go to school on one or more of the past 30 days because they felt they would be unsafe at school or on their way home from school	4.6	5.8	4.0	1.6
Had been threatened or injured with a weapon on school property one or more times during the past 12 months	6.6	4.7	7.1	4.6
Were in a physical fight one or more times in the past 12 months*	36.8	34.1	30.0	19.9
Were in a physical fight one or more times in the past 12 months in which they were injured and had to be treated by a doctor or nurse	4.5	4.6	4.8	1.8
Were in a physical fight on school property one or more times in the past 12 months*	16.6	17.9	10.1	4.5
Were ever hit, slapped, or physically hurt on purpose by their boyfriend or girlfriend during the past 12 months	6.0	8.7	6.9	8.1
Had ever been physically forced to have sexual intercourse when they did not want to	5.6	5.9	6.5	7.7
*Statistically significant difference between males and females: P<.05				

- **Dating Violence**

Teen dating violence is a form of Intimate Partner Violence (IPV). Teen dating violence can include physical assault; sexual assault; economic, emotional, verbal, and psychological abuse; isolation; stalking; and/or damage to the victim's or, even, the perpetrator's own property (U.S. Department of Justice, 2000). Teen dating violence is somewhat different than IPV in adult relationships and without intervention a lifelong relationship pattern may emerge for both the abuser and the victim. Furthermore, involvement in a violent relationship can leave the victim with various mental health problems, such as depression or Post Traumatic Stress Disorder (PTSD).

According to 2009 YRBS data, 6.0% of 9th grade students, 8.7% of 10th grade students, 6.9% of 11th grade students, and 8.1% of 12th grade students reported ever being hit, slapped, or intentionally physically hurt by their boyfriend or girlfriend in the last 12 months (Table 41). Moreover, 6.2% of females and 8.6% of males reported ever being hit, slapped, or physically hurt on purpose by their girlfriend or boyfriend in the past 12 months, with a total of 7.4% of all high school students reporting this. More than one in twenty reported past sexual assault; 5.6% of 9th grade students, 5.9% of 10th grade students, 6.5% of 11th grade students, and 7.7% of 12th grade students reported having been physically forced to have nonconsensual sexual intercourse (Table 41). Female students were almost three times as likely to report nonconsensual sexual intercourse compared to males (9.1% vs. 3.8%, Table 40). Due to the sensitive nature of this particular topic there may be some under-reporting of abuse of all types. And, although the question addresses teen dating violence, victimization in a non-dating relationship is not explored in the YRBS survey.

Injury

More than one in eight two-year-olds experienced an unintentional injury in 2008 that was serious enough to seek medical advice or treatment (Table 42). The majority of injuries were the result of falls (48.1%). This is consistent with national studies that show falls are the most common cause of non-fatal injury to children aged 1-4 (Morton, Spicer, Korn, Thomas, & Jones, 2007). The second most prevalent cause was “other” which included broken bones, eye injuries, dislocated elbows, etc. The third most common injury was due to cuts (16.4%). One in ten (9.3%) reported a burn injury (Morton, Spicer, Korn, Thomas, & Jones, 2007).

Question	Percentage	95% CI
During the past 12 months, was your two-year old injured seriously enough that he/she got medical advice or treatment?		
Yes	12.1	9.5, 15.3
No	85.9	82.4, 88.7
Unknown	2.0	1.0, 4.0
If yes, how was your two-year-old injured?		
Hurt in car accident	0.2	0.0, 0.8
Burn	9.3	4.1, 19.6
Cut	16.4	9.0, 27.9
Fall	48.1	35.8, 60.7
Bite	3.3	1.0, 10.6
Choking	1.7	0.3, 8.7
Poisoning	1.8	0.3, 11.4
Near drowning	0.0	0.0, 0.0
Other	22.1	13.5, 34.1

TOTS asked mothers a series of questions designed to ascertain the level of safety in the toddler’s home. These safety measures covered issues from fenced drowning hazards to keeping guns in the home. Roughly 40% of mothers indicated their pools, ponds, etc., were protected by a fence on their property; the majority of the 60% who said they were not, reported it was “not applicable” to them. Twenty-one percent did not keep latches and locks on cabinets with dangerous and harmful items stored inside (like chemicals and cleaning supplies). Ten percent did not store matches or lighters in a safe or child proof place. Almost 28% of families with toddlers kept a gun and/or rifle in their home (Table 43).

Question	Percentage	95% CI
Do you do any of the following in your home?		
An adult always watches my child while in the bathtub	96.7	94.8, 97.9
Swimming pools, ponds, irrigation ditches, stock tanks, or canals on your property are protected by fences	39.3	35.1, 43.8
Matches and lighters are stored in a childproof place	89.3	86.3, 91.7
A working smoke detector is on each level of your home	95.2	93.0, 96.7
Medicines and vitamins are stored in a childproof place	97.6	96.0, 98.6
Safety latches and locks are on all cabinets within a child’s reach that have dangerous or harmful items stored in them	79.0	75.2, 82.4
Safety caps cover unused electrical outlets	83.6	80.0, 86.6
Do you keep guns and/or rifles in your home?		
Yes	27.9	24.2, 31.8
No	69.4	65.4, 73.2
Unknown	2.7	1.5, 4.9

- **Bicycle Injury**

According to the OSDH Injury Prevention Service for the year 2003, Oklahoma experienced 56 traumatic brain injuries (TBI) as a result of a bicycle mishap, three of which proved to be fatal. Bicycle-related injuries are a leading cause of nonfatal TBI among elementary school aged children 5-12 years. BRFSS reports that in Oklahoma, 25% of children report wearing a bicycle helmet. Also, Oklahoma Safe Kids reports that every year, 270,000 children under the age of 14 in the U.S. are injured as a result of improper fit of a bicycle helmet or non-use of a helmet while bicycle riding (Morton, Spicer, Korn, Thomas, & Jones, 2007). Data from the 1GHS also showed that nine out of ten (91%) first graders rode a bicycle, skateboard, scooter, or skates, of which 35.2% never wore a helmet while riding; 17.6% wore a helmet always; 47.2% wore a helmet most of the time, sometimes, or seldom.

A nonfatal TBI is a devastating injury, leaving many survivors struggling with severe physical, emotional, or cognitive problems resulting in long-term disability. Persons that experience a mild to moderate brain injury may also have long lasting difficulties with learning and activities associated with daily living.

- **Motor Vehicle Injury**

According to the CDC, motor vehicle injuries are the leading cause of death among children in the U.S. Child restraint usage often correlates with the driver’s restraint usage as 40% of unrestrained children are the passengers of unrestrained drivers. Contributing to the injury rate as well is the incorrect use of child restraint systems. In one observational study of the use of nearly 3,500 car and booster seats, 72.6% were found to be misused in such a way as would increase the risk of injury during a crash (National Highway Traffic Safety Administration, 2006). Data from the 2007-2008 1GHS show that nearly all (99.5%) parents/guardians reported that their first-grader used a safety restraint when riding in a motor vehicle in the 30 days before

the survey was administered. Of those first graders who used a safety restraint: 76.9% were reported by their parent/guardian to use it always; 4.9% used their restraint either seldom or never. Among those first graders who used a safety restraint: 67.2% used a lap and shoulder belt; 25.9% used a booster seat with the car's lap or shoulder belt; 5.6% used a lap belt only.

In 1999 Senate Bill 1413 was passed in Oklahoma which introduced the Graduated Driver License Law. This bill was created to address the high injury and mortality rate from motor vehicle crashes for teen drivers. In 2005 the bill was strengthened with House Bill 1653 to increase restrictions. Data from the Oklahoma Department of Public Safety show that teen drivers aged 16-17 are disproportionately represented for all motor vehicle crashes and fatal crashes in the state. From 2000-2008, 185 drivers aged 16-17 were killed in crashes. Of the 169 drivers whose seatbelt use was known, 58.6% were not using their seat belts (data not shown).

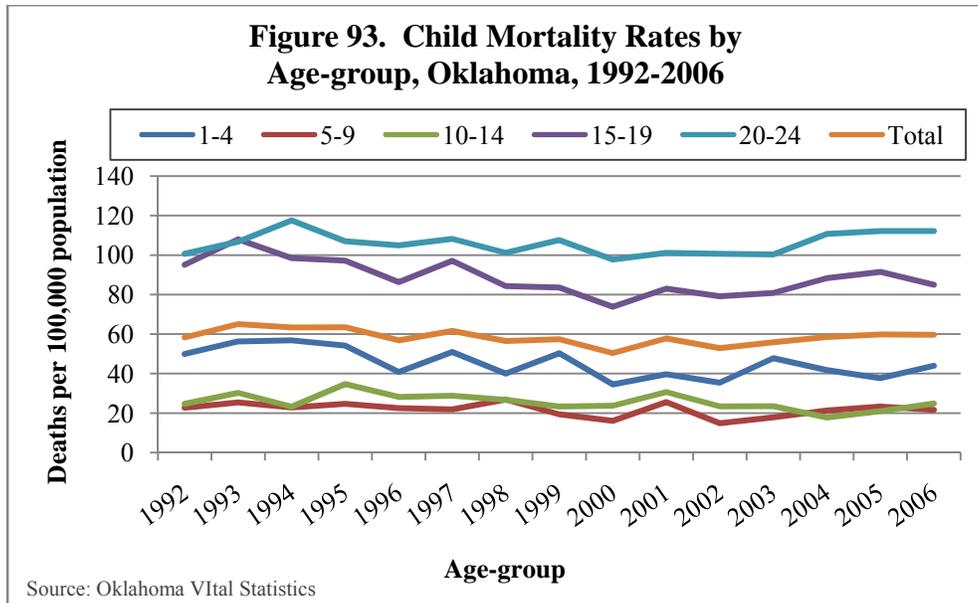
The Oklahoma YRBS asks two questions related to driving or riding as a passenger in a car while drinking alcohol. The percentage of students who rode in a vehicle one or more times in the past 30 days with someone who had been drinking alcohol decreased significantly from 30.6% in 2003 to 23.1% in 2009, and is significantly lower than the Healthy People 2010 goal of 30% (Table 44). No significant differences were observed by grade or gender. The percentage of students who drove a car while they had been drinking was 11.0% in 2009, a significant decrease from 17.5% in 2003. Differences were observed by gender as males were more likely than females to have driven a car when they had been drinking alcohol at 13.2% and 8.6%, respectively. Significant differences were observed by grade as 12th graders were more likely than students in other grades to have driven a vehicle when they had been drinking.

Percentage of students who during the past 30 days.....							
	Female	Male	9th	10th	11th	12th	Total
rode in a vehicle driven by someone who had been drinking alcohol	22.8	23.6	21.8	23.7	25.2	22.1	23.2
drove a vehicle when they had been drinking alcohol	8.6	13.2% [†]	5.7	9.3	11.5	18.7 [‡]	10.9
[†] P=0.0747 [‡] P<.05							

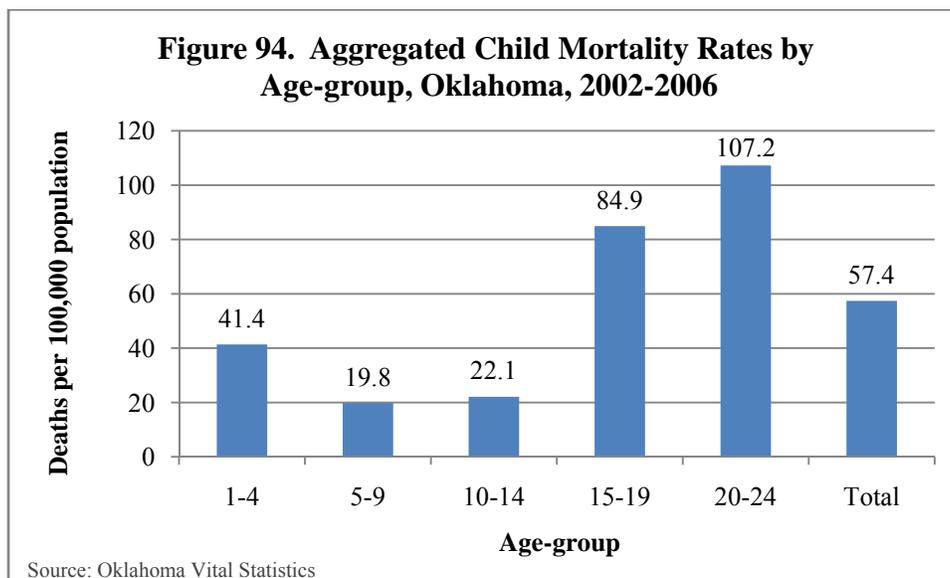
Mortality

- **Child and Adolescent Mortality**

Over the last 15 years, the child and adolescent mortality rate (ages 1- 24) has increased slightly from 58.3 deaths per 100,000 population in 1992 to 59.7 in 2006, a 2.4% increase (Figure 93). Age-specific mortality rates have had essentially no change for most age-groups; however, 20-24 year olds increased 11.5% from 100.6 deaths per 100,000 population to 112.2 in 2006. Adolescents aged 15-19 experienced a decrease of 10.7% from 95.1 deaths per 100,000 population in 1992 to 84.9 in 2006.



Due to variability from year to year, data from 2002-2006 were aggregated to present a more stable mortality rate (Figure 94). The lowest mortality rate was for five to nine year olds at 19.8 deaths per 100,000 population, followed by 10-14 year olds at 22.1, 1-4 year olds at 41.4, 15-19 year olds at 84.9, and 20-24 year olds at 107.2.



When the 2006 Oklahoma mortality rates are compared to the Healthy People 2010 objectives for the age ranges of 10-14, 15-19, and 20-24, Oklahoma falls short of the objectives (Figure 95). Oklahoma mortality rates for all age ranges, which are the number of deaths per 100,000 age-specific population, exceeded the Healthy People 2010 objectives. The Oklahoma mortality rates were higher than the Healthy People 2010 objectives by 48.3% for 10-14 year-olds, 113.4% for 15-19 year-olds, and 129.0% for 20-24 year-olds.

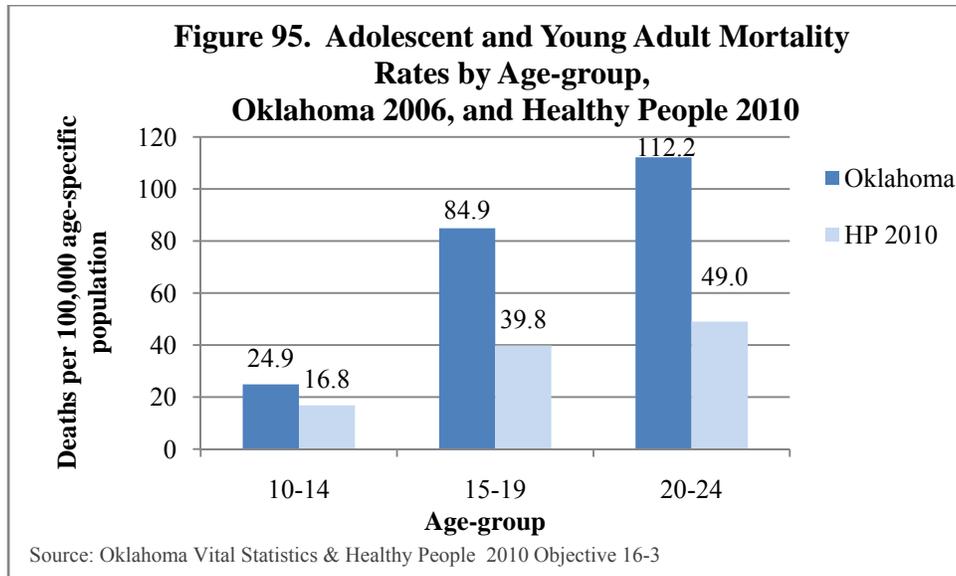


Table 45 displays the leading causes of death for Oklahoma’s children, adolescents, and young adults. The number one cause of death for all age-groups is unintentional injury, which includes motor vehicle accidents, falls, drowning, poisoning, among others. Except for ages 1-9, homicide and suicide make up the second and third leading causes of death for children, adolescents, and young adults in Oklahoma (Centers for Disease Control and Prevention, 2009).

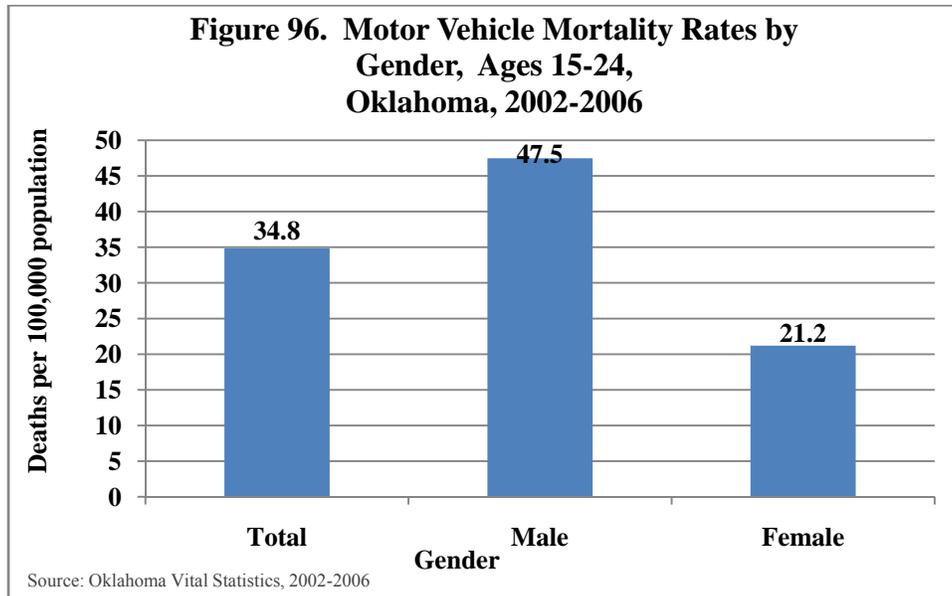
Table 45. Leading Causes of Death by Age-group, Oklahoma, 2004-2006

Rank	Age-group				
	1-4	5-9	10-14	15-19	20-24
1	Unintentional injury				
2	Congenital anomalies	Malignant neoplasms	Homicide	Suicide	Suicide
3	Homicide	Homicide	Suicide	Homicide	Homicide
4	Malignant neoplasms	Congenital anomalies	Malignant neoplasms	Malignant neoplasms	Malignant neoplasms
5	Heart disease	Benign neoplasms	Congenital anomalies	Heart disease	Heart disease
6	Influenza and pneumonia	Cerebrovascular diseases	Chronic lower respiratory disease	Congenital anomalies	Complicated pregnancy
7	Septicemia	Chronic lower respiratory disease	Heart disease	Influenza and pneumonia	Congenital anomalies
8	Benign neoplasms	Influenza and pneumonia	Influenza and pneumonia	Chronic lower respiratory disease	Diabetes mellitus
9	Cerebrovascular diseases	Five tied	Four tied	Complicated pregnancy	Cerebrovascular diseases
10	Chronic lower respiratory disease	Five tied	Four tied	Benign neoplasms	Chronic lower respiratory disease

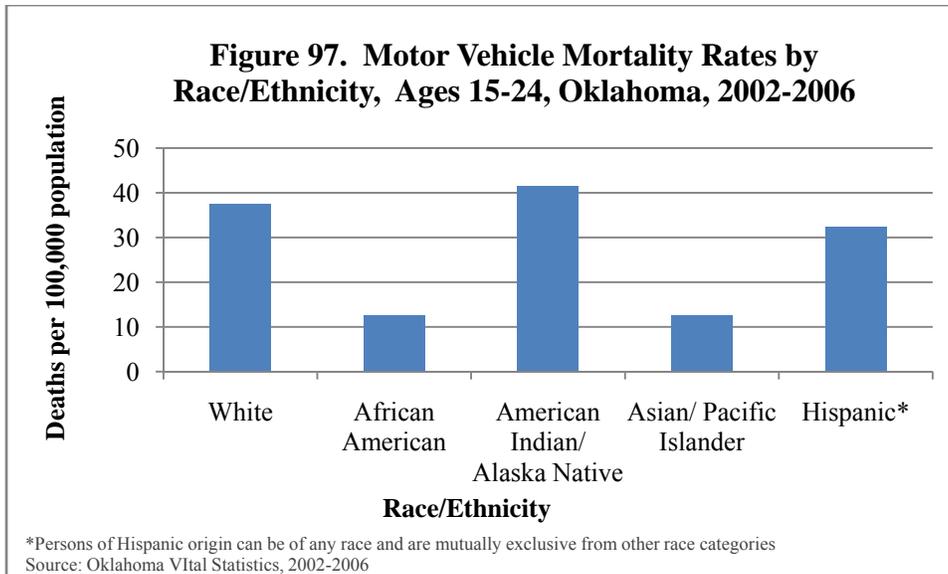
Source: CDC Wonder On-line Database

- **Motor Vehicle Mortality**

Unintentional injury, specifically injury due to motor vehicle crashes, is the leading cause of death among children and adolescents aged 1-24 in Oklahoma, accounting for two-thirds of all unintentional injury deaths and one-third of all deaths for that age-group. The motor vehicle mortality rate of 34.8 deaths per 100,000 population aged 15-24 from 2002-2006 was significantly higher than the Healthy People 2010 objective of 26.4 deaths per 100,000 population aged 15-24 (Figure 96). Males aged 15-24 were more than twice as likely as females aged 15-24 to die from motor vehicle crashes with motor vehicle mortality rates 47.5 and 21.2 deaths per 100,000 population, respectively.

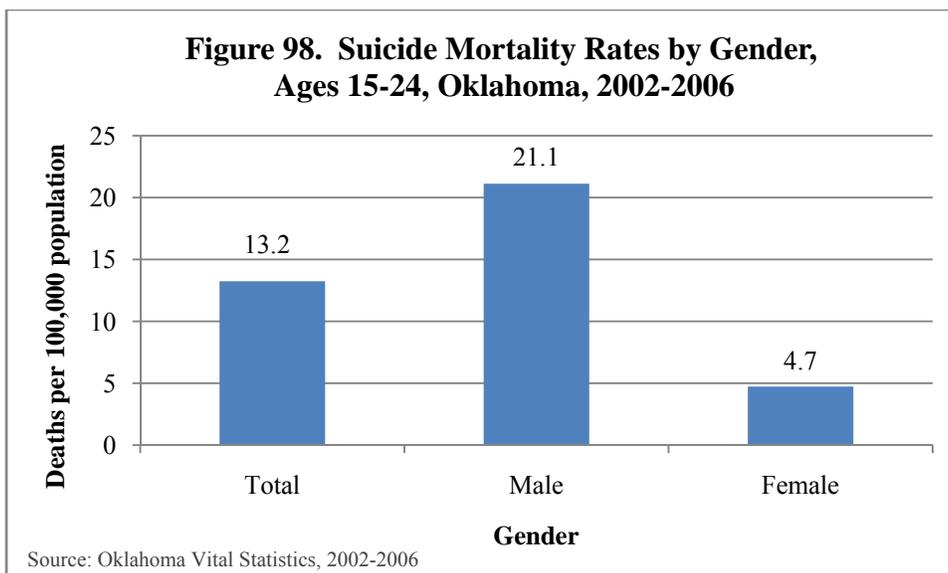


Significant differences were also observed among racial/ethnic groups (Figure 97). American Indian/Alaska Natives aged 15-24 had the highest motor vehicle mortality rate at 41.5 deaths per 100,000 population, followed by whites, Hispanics, African American/Blacks, and Asian/Pacific Islanders at 37.6, 32.3, 12.5, and 12.5 deaths per 100,000 population aged 15-24, respectively.

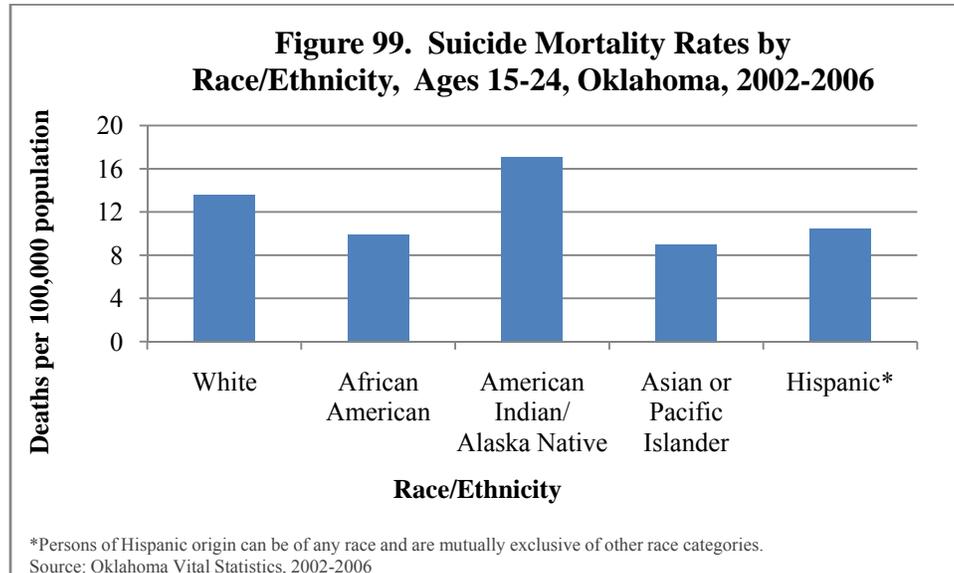


- **Suicide Mortality**

Data from the YRBS indicated that females had higher rates of suicide attempts, yet the mortality data show that males have higher completion rates. The Oklahoma Vital Statistics demonstrate suicide mortality rate for males aged 15-24 was more than four times that of females at 21.1 and 4.7 deaths per 100,000 population, respectively (Figure 98). Examining suicide methods used by gender, data indicate that 61% of suicide deaths to males were by discharge of firearms compared to 38% of females. This is only part of the explanation as there were still a high number of attempts by females but using a less effective method that does not result in a fatality. Looking at national non-fatal injury data from CDC WISQARS, the number two cause of non-fatal injury for females was self harm/poisoning whereas this method was the 4th leading cause of non-fatal injury for males [less than half the number of attempts (Centers for Disease Control and Prevention, 2010)].



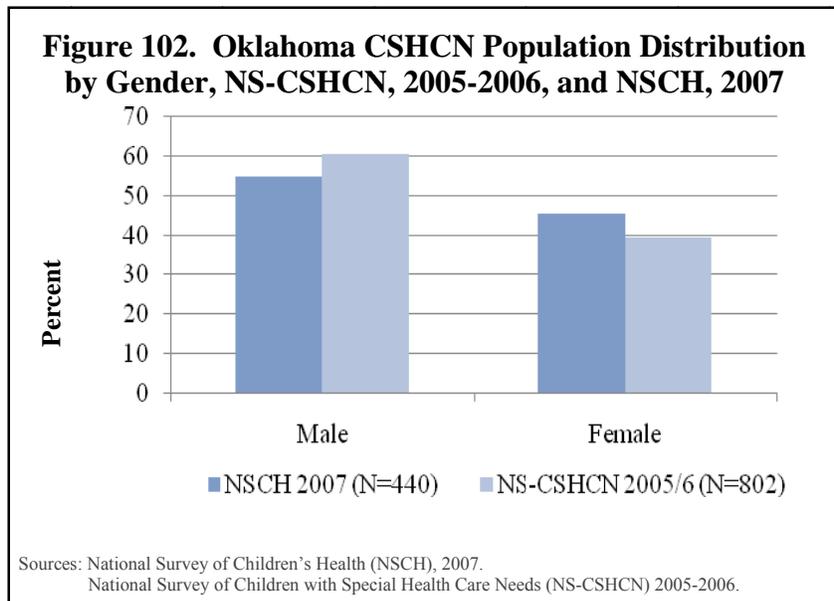
Racial/ethnic disparities exist for suicide mortality rates as the American Indian/Alaska Native rate of 17.1 deaths per 100,000 population was 25% higher than the next closest rate of 13.6 for whites. While Asian/Pacific Islanders have the lowest suicide mortality rate, this rate should be interpreted with caution as it is based on small numbers (Figure 99).



C. Children with Special Health Care Needs

In accordance with the MCHB definition of CSHCN, the OKDHS defines CSHCN as children who currently present or are more likely to present challenges due to physical, emotional, developmental, or behavioral needs.

Due to the inclusive nature of the definition of CSHCN, a wide range of children can be classified as CSHCN, making exact estimates of the numbers of CSHCN in Oklahoma difficult to attain. However, population estimates from multiple sources can help in presenting a portrait of CSHCN that best reflects reality. The 2005-2006 National Survey of Children with Special Health Care Needs (NS-CSHCN) estimates that approximately 13.9% of children below the age of 18 in the U.S. have special health care needs. In Oklahoma, a larger percentage of children are estimated to be CSHCN, 16.5% (The Child and Adolescent Health Measurement Initiative (CAHMI), 2005-2006). Based on the state population distribution and the estimated numbers of CSHCN, Sooner SUCCESS developed the following map to illustrate the possible distribution of CSHCN within Oklahoma. Greater numbers of CSHCN are expected to reside in counties with larger populations, e.g., Oklahoma County estimated at 29,769 and Tulsa County estimated at 25,169 (Figure 100).



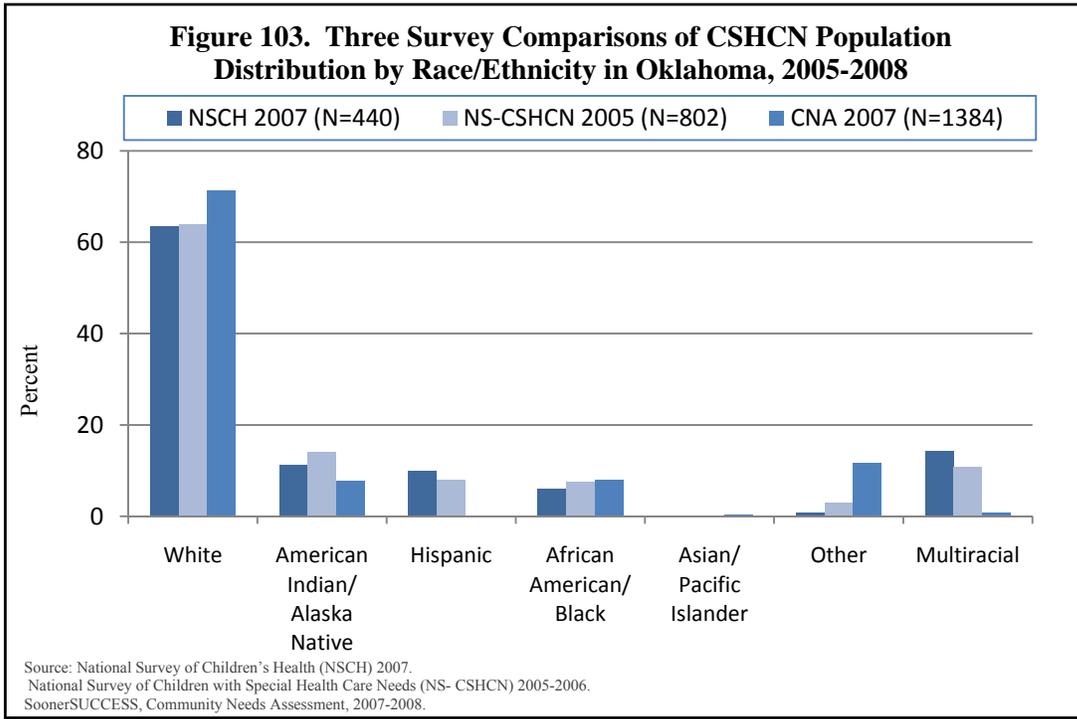
Regarding the race and ethnicity breakdown of CSHCN, the 2007 NSCH and the 2005-2006 NS-CSHCN both showed that white males make up the largest proportion of the CSHCN population in Oklahoma. The large proportion of white CSHCN in Oklahoma (63.4%) is not unusual as it reflects the percentage of white CSHCN (75.2%) in the U.S. population (Table 46).

Table 46. Race/Ethnicity and Family Structure of CSHCN in Oklahoma, Compared to U.S., NSCH, 2007

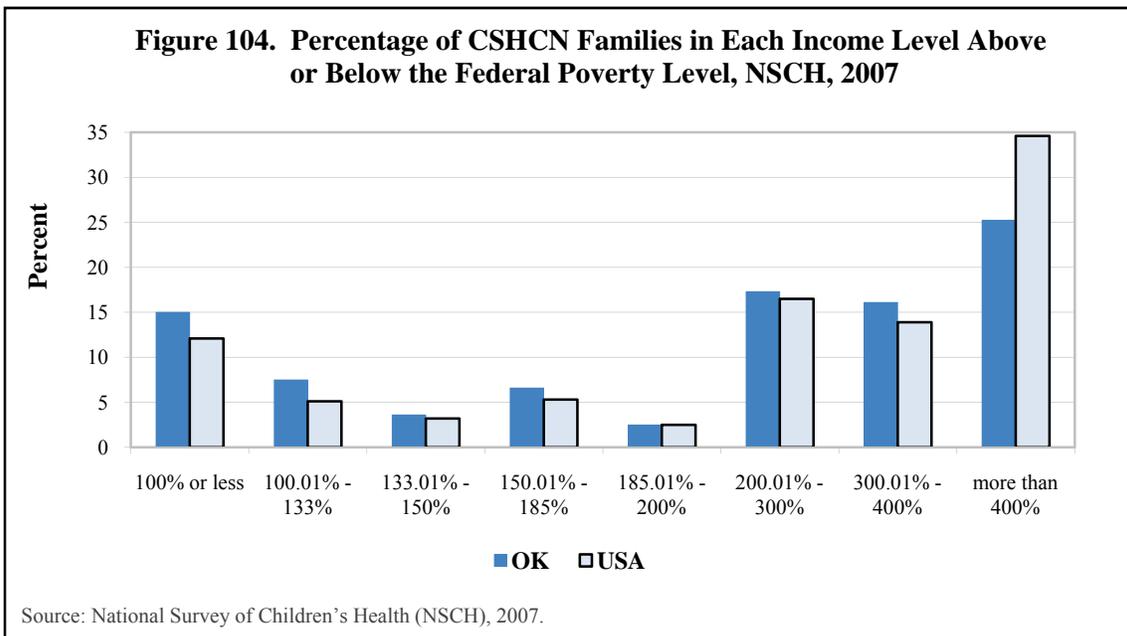
	Oklahoma	U.S.
Race/Ethnicity		
Hispanic	9.8	10.0
White	63.4	75.2
African American/Black	5.9	10.8
Multiracial	14.3	6.0
Other	0.7	3.7
American Indian/Alaska Native	11.1	-
Family Structure		
Two parent biological/adopted	57.7	61.0
Two parent stepfamily	10.2	9.1
Single mother, no father present	21.1	21.0
Other	10.2	8.3

Source: National Survey of Children's Health (NSCH), 2007.

Data on American Indian/Alaska Native CSHCN were gathered in Oklahoma and other states where the population of American Indian/Alaska Native represented a large subset of the non-white population. Eleven percent of the Oklahoma CSHCN were identified as American Indian/Alaska Native (Figure 103). More than one in twenty (5.7%) of this population received services from an Indian Health Service Hospital or clinic within the past 12 months.

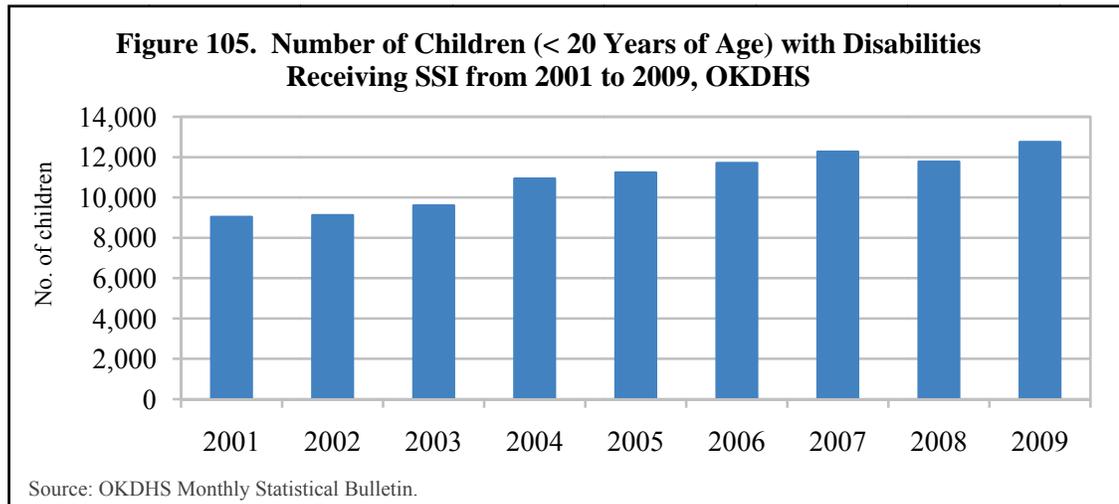


CSHCN families represent a broad range of income levels. Figure 104 shows the income distribution of CSHCN families in the NSCH 2007 survey, based on how far above or below the FPL the family income fell.

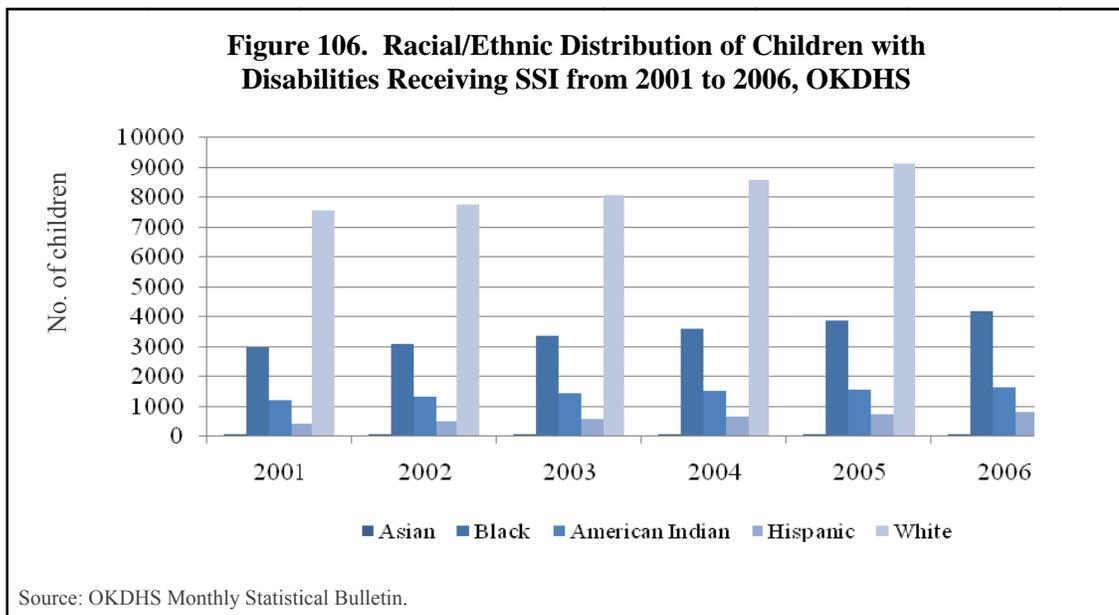


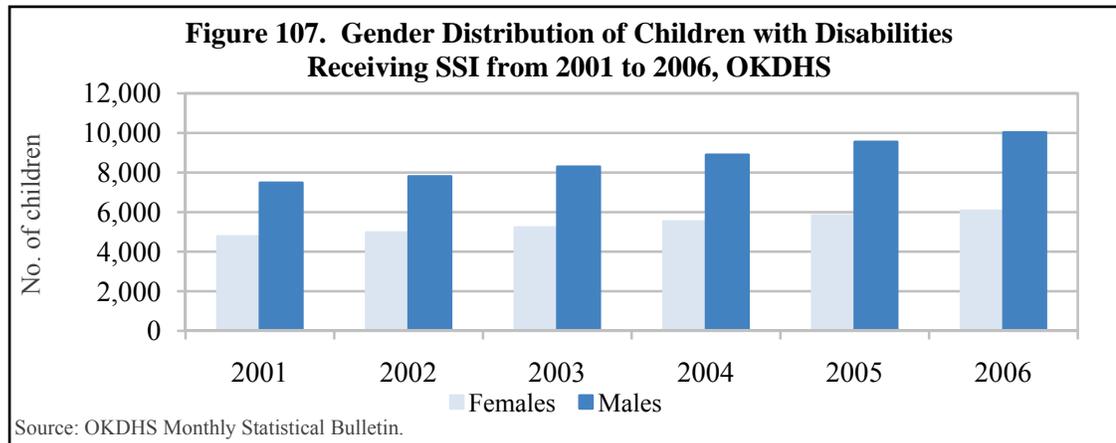
The trends in Oklahoma are generally consistent with those across the nation, whereby families of CSHCN represented a broad range of income levels. Approximately 25% of Oklahoma's families of CSHCN were above 400% of the poverty line; on the other hand, another 26% fell below 150% of the poverty level.

Data from the monthly bulletins issued by the OKDHS show that a growing number of children (less than 20 years of age), with disabilities, are receiving Supplemental Security Income [SSI, (Oklahoma Department of Human Services, 2010)]. Whether the increase in numbers also reflects an increase in numbers of children with disabilities, changes in program requirements, or changes in the numbers of children applying for SSI, is not clear (Figure 105).



The demographic profile of Oklahoma children with disabilities receiving SSI is similar to that of the CSHCN included in the national surveys (e.g., NSCH, NS-CSHCN). Children with disabilities receiving SSI were more likely to be males and white as illustrated in Figure 106 on racial identity and Figure 107 on child gender.





Special Health Care Needs and Conditions

The term, “Children with Special Health Care Needs,” encompasses children experiencing a wide range of physical, behavioral, emotional, and developmental conditions. It is difficult to identify exactly which conditions are most prevalent and to enumerate those affected by each condition. One challenge to enumeration lies in the differences in the numerous conditions identified as special health care needs. The severity of the condition and prevalence and impact on daily living could vary widely and result in children seeking and needing very different types of services and health care. As a result, data about the types of conditions and the numbers of children affected would not be available in one centralized location. For example, a child may be identified as a CSHCN as a result of a physical chronic condition such as asthma, while another may be identified as a CSHCN as a result of a severe developmental disability. The child with asthma may have to take medication regularly and make occasional visits to a primary care physician. Meanwhile, the child with a severe developmental disability, may have to take medication, deal with functional limitations that impact everyday life more pervasively, and have frequent visits with a specialized medical provider. An additional challenge to establishing prevalence lies in the variability in survey development. Without the use of a standard means of counting and assessing conditions, or even a consensus about which conditions to include in a survey of CSHCN, surveys pick and choose which conditions they ask about and how they ask. The lack of consistency in the types of conditions surveys inquire about make it challenging to track changes in prevalence rates.

Condition	Percentage that have ever had the condition	Percentage currently identified as having the condition
Autism, Asperger Syndrome or Autism Spectrum Disorder	6.8	4.3
Attention Deficit Disorder or Attention Deficit Hyperactivity Disorder	25.2	21.4
Learning Disability	NA	12.7
Developmental Delay	25.7	NA
Speech problem	NA	12.0
Tourette Syndrome	0.5	0.5
Asthma	41.6	33.2
Diabetes	1.6	1.6
Epilepsy or seizure disorder	4.3	3.2

Source: National Survey of Children's Health (NSCH), 2007.

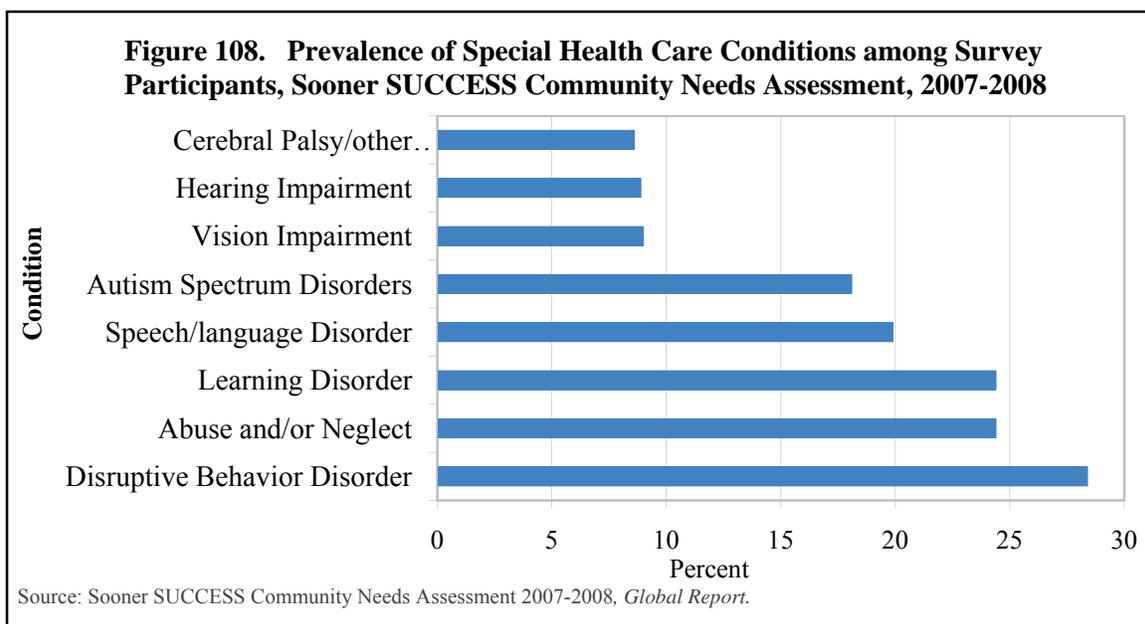
In addition to the challenges of the inclusion of numerous conditions that impact children in very different ways, and the lack of a universally accepted way of counting CSHCN, the time frame under consideration can also impact reported conditions. The NSCH 2007 provides an illustration of the difference the timing issue may make in the types of data acquired. Respondents were asked whether the children were currently identified as having a specific condition. Fewer children were identified as having the condition at the time of the survey. Whether the changes in numbers indicate that the conditions are no longer present, have been treated, or the child is no longer seeking treatment, is not clear. The results imply that surveys asking whether children have a specific condition currently or in the past year may lead to an underrepresented estimate of children that have ever had the condition (Table 47).

To address the onus of presenting a cohesive snapshot of CSHCN in Oklahoma, data from national and local surveys were examined. The primary national surveys (2003, 2007 NSCH, 2005-2006 NS-CSHCN) showed higher levels of physical special needs conditions. The 2007 NSCH found asthma to be the most prevalent condition among Oklahoma's CSHCN with 41.6% having been diagnosed with the condition in the past. Similarly, the 2005-2006 NS-CSHCN identified physical conditions as the most prevalent conditions for CSHCN with Oklahoma CSHCN survey participants presenting allergies (64.7%) and asthma (40%) respectively (Table 48).

Allergies	64.7%
Asthma	40.0%
Attention Deficit Disorder	30.7%
Emotional Problems	25.7%
Migraine/Frequent Headache	19.3%
Mental Retardation	12.3%
Autism	3.2%
Seizure Disorder	3.1%
Heart Problems	2.9%
Cerebral Palsy	2.0%
Blood Problems	1.7%
Diabetes	1.0%
Down Syndrome	1.0%
Muscular Dystrophy	0.5%
Cystic Fibrosis	0.1%

*One or more conditions reported for each child.
Source: National Survey of Children with Special Health Care Needs (NS-CSHCN), 2005-2006.

Contrary to the data from the national surveys, the Oklahoma-specific Sooner SUCCESS Community Needs Assessment identified a behavioral condition, disruptive behavior disorder, as the most prevalent diagnosis. Differences in the types of conditions identified as most prevalent may also be due to imprecise definitions of conditions. While physical conditions are often medical and thereby easily defined, behavioral and emotional conditions can be difficult to define. Emotional problems could be considered the same as disruptive behavior; however, emotional problems may include other conditions as well (Figure 108).



The 2003 and 2007 NSCH provide opportunities to look for changes in prevalence rates of relevant conditions. All conditions surveyed in both 2003 and 2007 showed an increase in the percentage of children affected by the condition. The prevalence of asthma in the survey sample rose approximately 5% from 2003 to 2007. The rates of Autism, Asperger Syndrome or Autism Spectrum Disorder, more than tripled in the same five years (Table 49). The rate changes may reflect actual changes in the prevalence of conditions in the population, more accurate diagnosis or assessment, or even improved reporting, either due to caregivers seeking more assistance or providers reaching out to families more frequently.

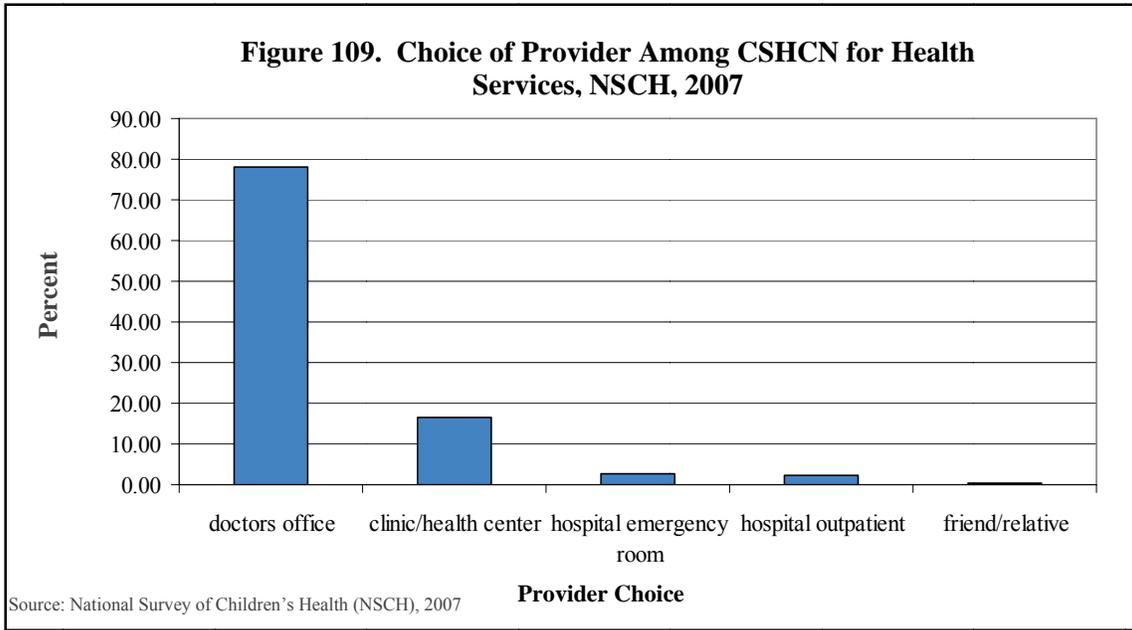
	2003	2007
Autism, Asperger Syndrome or Autism Spectrum Disorder	0.5	1.8
Attention Deficit Disorder or Attention Deficit Hyperactivity Disorder	6.3	8.3
Asthma	13.5	17.3
Diabetes	0.4	0.6
Source: National Survey of Children's Health (NSCH), 2003, 2007.		

Access to Health Care

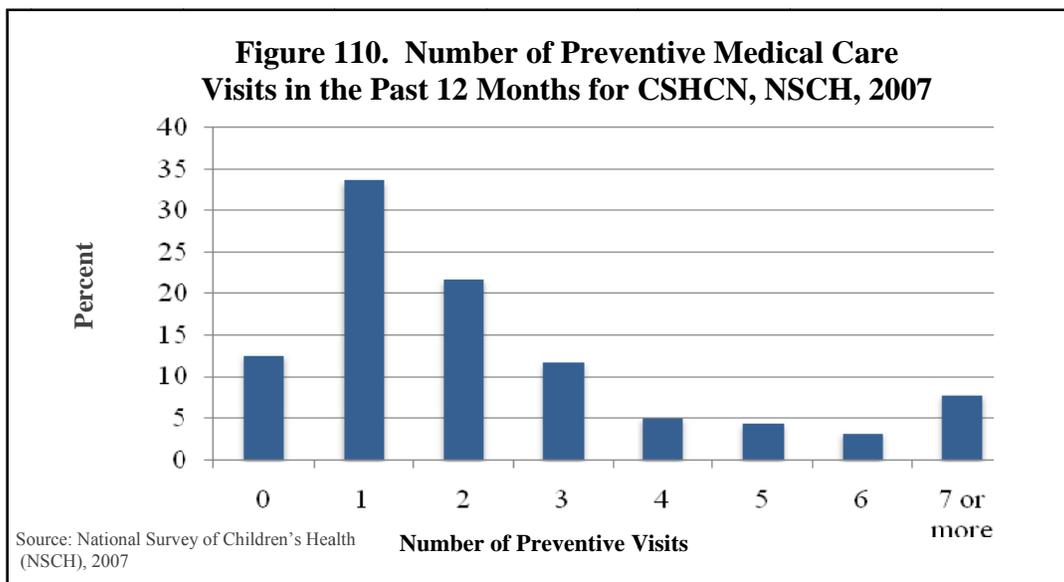
The National Initiative for Children's Healthcare Quality indicates that 80% of health care dollars spent annually on children is spent on children with special health care needs (NICHQ). This does not necessarily equate to better access to better care for CSHCN. The AAP notes that access to care involves several different components, including physical, communicative, geographic, and financial access. For health care to be accessible, the location must be easily reached, communication of relevant information must be understandable, and health care must be affordable. In addition to those components, health care must also be appropriate, available in a timely manner, and culturally relevant for it to be of use.

- **Medical Care**

According to the 2007 NSCH, almost all CSHCN have access to medical care. More specifically, 95.2 % of Oklahoma CSHCN had one place where they usually went when sick, 2.7% had more than one option to choose from when they were sick. The majority of CSHCN received medical care at a doctor's office (Figure 109). This implies that general medical care is available for most CSHCN in Oklahoma.



According to the same survey, the majority of Oklahoma CSHCN received a preventive medical care visit within the past 12 months (Figure 110). Approximately 12% of CSHCN did not have a preventive medical care visit. The findings are not surprising to researchers Van Cleave and Davis (2008) who found that CSHCN attend preventive medical visits at high rates, in some cases even higher rates than other children. Preventive medical care visits are important because they have been associated with unmet needs. This study indicated that CSHCN, who attended more preventive care visits, were less likely to have unmet medical needs (Van Cleave & Davis, 2008).

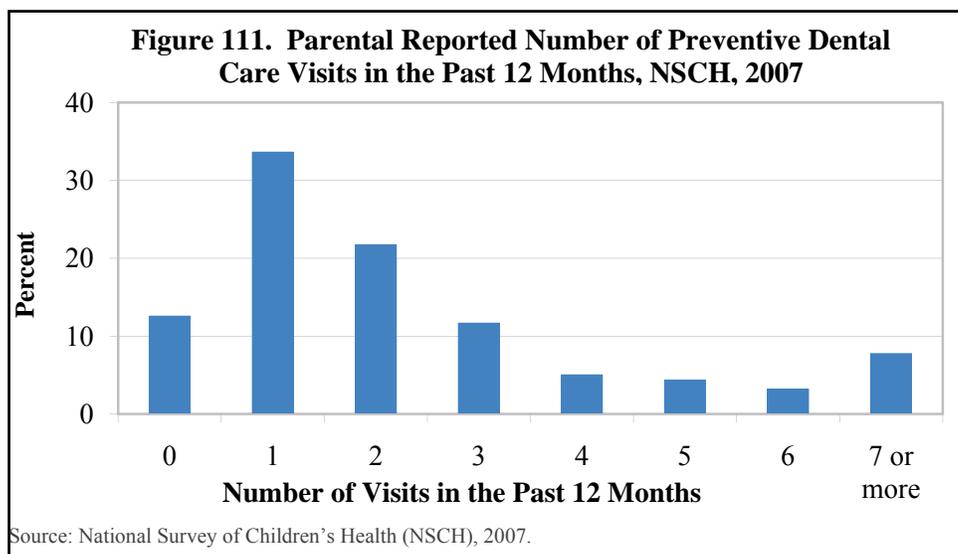


In summary, the available data on CSHCN shows that general health care services access may not be as great of a problem as access to specific services. For example preventive dental care

visits are for the most part taking place; however, CSHCN need more dental care dealing with dental problems. There is a scarcity of Oklahoma specific data on access to mental health and medical health services for all CSHCN. To speak conclusively regarding access to mental and medical services, data is needed on children who are not in foster care and who are receiving services for needs beyond preventive medical care needs.

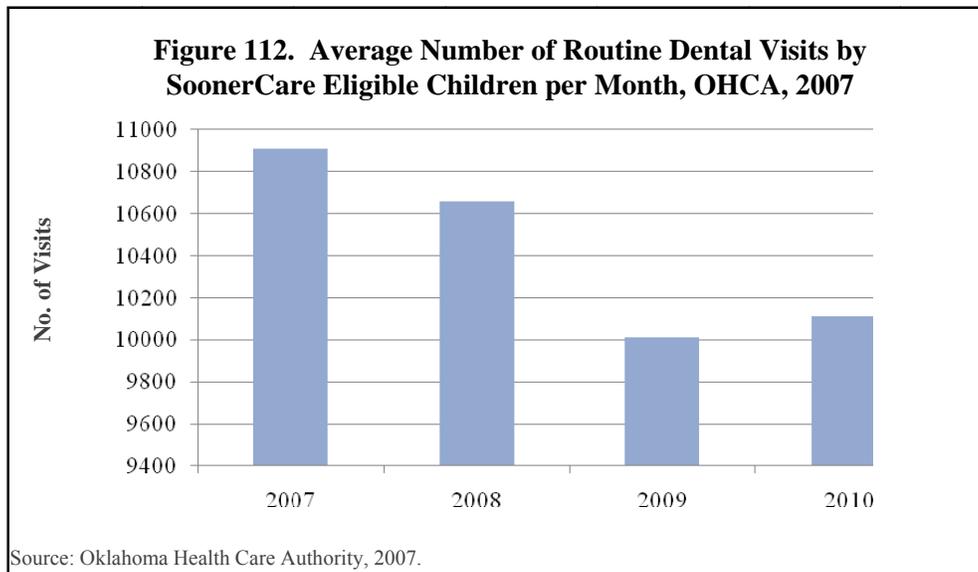
- **Oral Health**

Since the landmark publication by Newacheck and colleagues on access to health care in 2000, dental care has been routinely identified as the primary unmet need of CSHCN (Newacheck, McManus, Fox, Hung, & Halfon, 2000). A study by Lewis (2009) recently examined data from the 2005/2006 NS-CSHCN to determine whether the survey found support for the popular perspective (Lewis, 2009). Findings indicated that CSHCN reported similar amounts of unmet need for preventive/routine oral health care as non-CSHCN. The 2007 NSCH data on Oklahoma CSHCN showed similar trends.

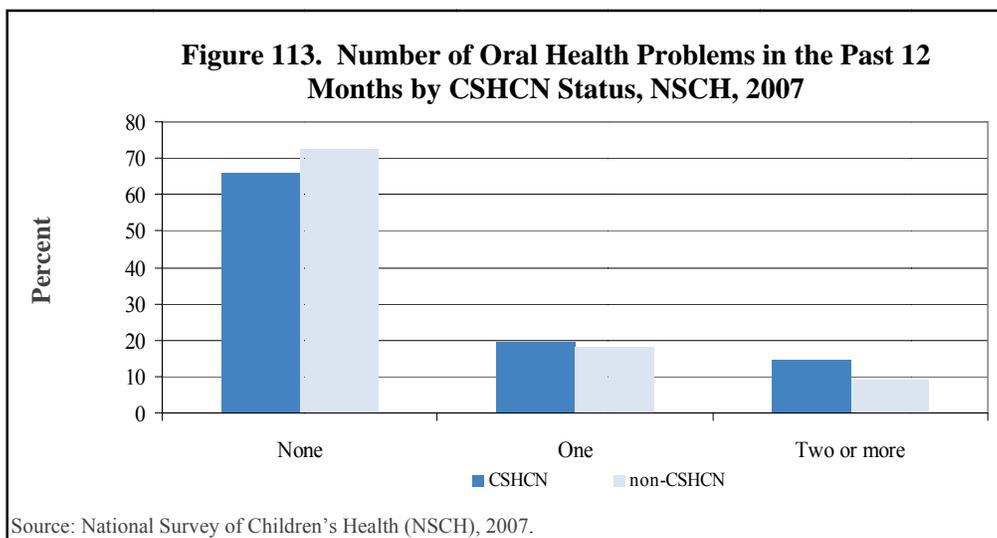


Approximately 85% of Oklahoma CSHCN saw a dentist for one or more preventive dental care visits in the past year (Figure 111). In addition, the 2005-2006 NS-CSHCN showed that 91.3% of Oklahoma CSHCN received all the preventive dental care they needed, 3.9% received only some of the needed care, and 4.8% received none of the preventive dental care needed, indicating that generally Oklahoma CSHCN received necessary preventive dental care.

Data from the OHCA provided a glimpse of the actual numbers of children with special needs attaining preventive dental care (Figure 112). In 2007, OHCA collected the first set of data on the number of routine dental encounters per month from SoonerCare eligible children who are classified as disabled or in the custody of the state.

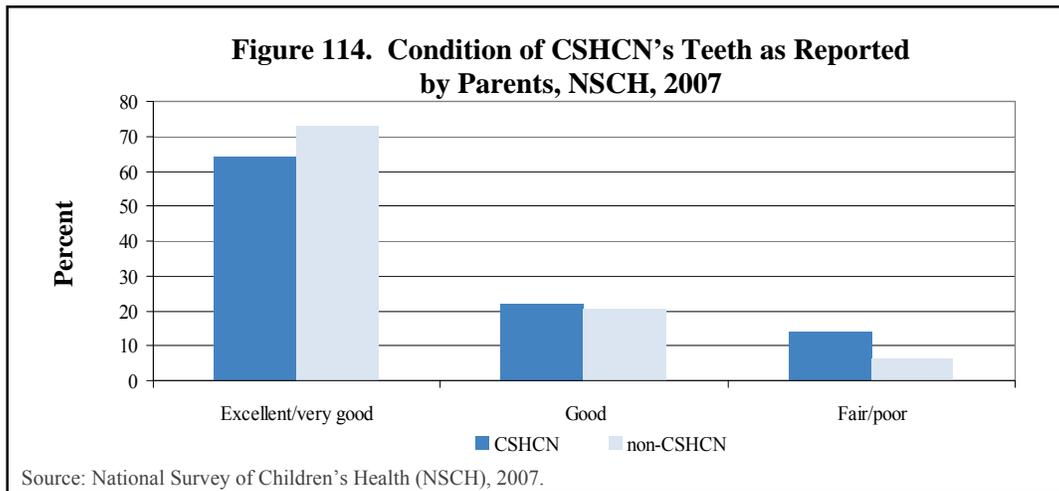


An average of 10,908 encounters per month was recorded in 2007. The following year the number decreased to an average of 10,660 routine dental encounters per month. The decrease was explained as a result of improved counting and the removal of duplicate counts. In 2009, the average number of monthly routine dental encounters decreased by approximately 649 encounters a month. The decrease was attributed to a 44% decrease in the number of children in foster care receiving dental services. In 2010, an average of 10,112 encounters per month was recorded, which indicated a stabilization of numbers.



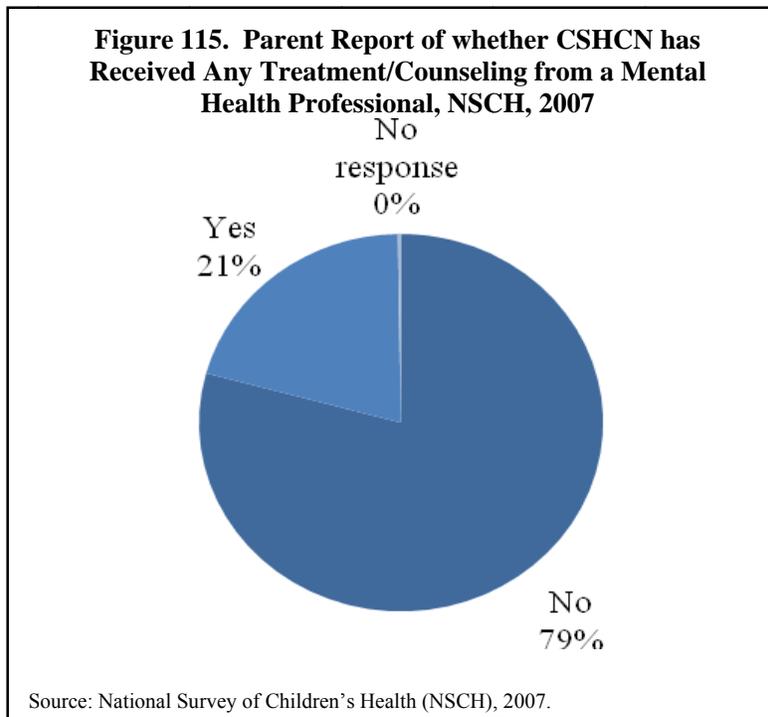
Overall, the national surveys and OHCA data show that CSHCN are generally able to access the necessary routine dental care they need. However, there is some indication that CSHCN experience a significant unmet need for non-preventive dental care. According to NSCH 2007, Oklahoma CSHCN had more oral health problems than non-CSHCN in Oklahoma, based on parent reports (Figure 113).

According to 2007 NSCH data, the disparities in the condition of oral health among the CSHCN population compared to the non-CSHCN population as reported by parents suggests that the need is great to ensure that appropriate oral health services are attained by the CSHCN population (Figure 114). Approximately 14% of CSHCN in Oklahoma have parents who reported the condition of their children’s teeth to be fair or poor compared to 6.1% of children without special health care needs.



- **Mental/Behavioral Care**

Access to mental/behavioral care presented variable findings, depending on the source. According to the 2007 NSCH, approximately 20% of CSHCN received treatment or counseling from a mental health professional (Figure 115). Of those that needed mental health services, 33% received the necessary services, while 67% did not. The 2005-2006 NS-CSHCN found that the majority (76.6%) of Oklahoma CSHCN received all of the mental health care or counseling they needed, 14.4% got some of the care they needed, and 9.0% did not get any of the care needed.

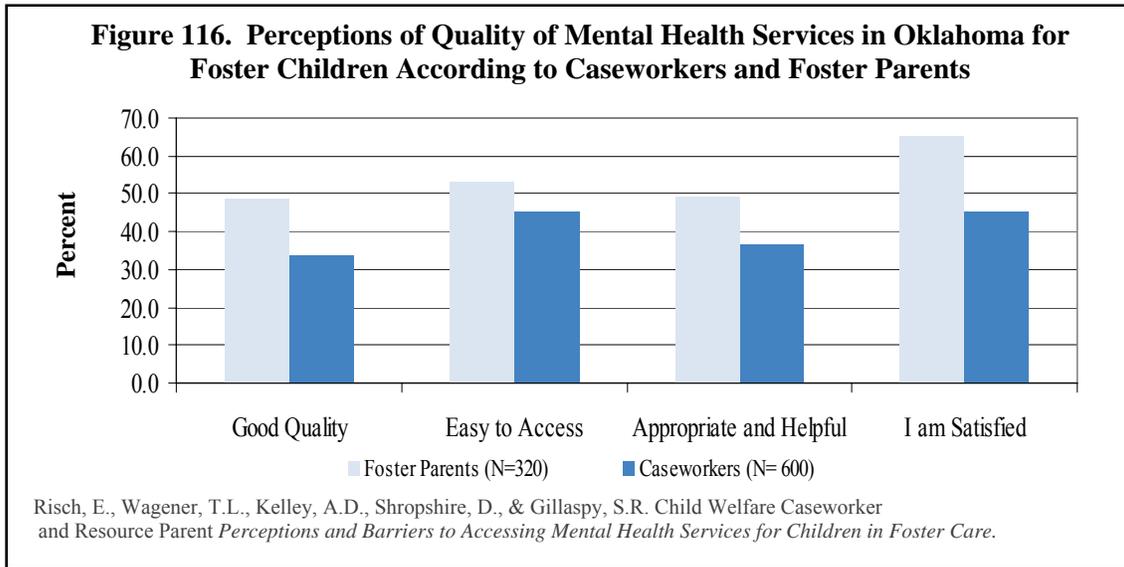


An estimated 12,000 Oklahoma children enter foster care each year, with approximately 60% identified as having emotional or behavior problems (Shropshire & Gillaspay, 2009). A study on access to services for foster children in Oklahoma was carried out by Shropshire and colleagues. The study gathered data from 320 foster parents and 600 caseworkers (Risch, Wagener, Kelley, Shropshire, & Gillaspay, 2009). The study found that perceptions of access and quality of mental health services for foster children differed among foster parents and caseworkers. Foster parents appeared to have a more positive perception of both quality and accessibility. For example, nearly a quarter of caseworkers stated that psychological medication management was not available in/near their county. Only 10% of foster parents and 9% of caseworkers reported that mental health therapy was not available (Table 50).

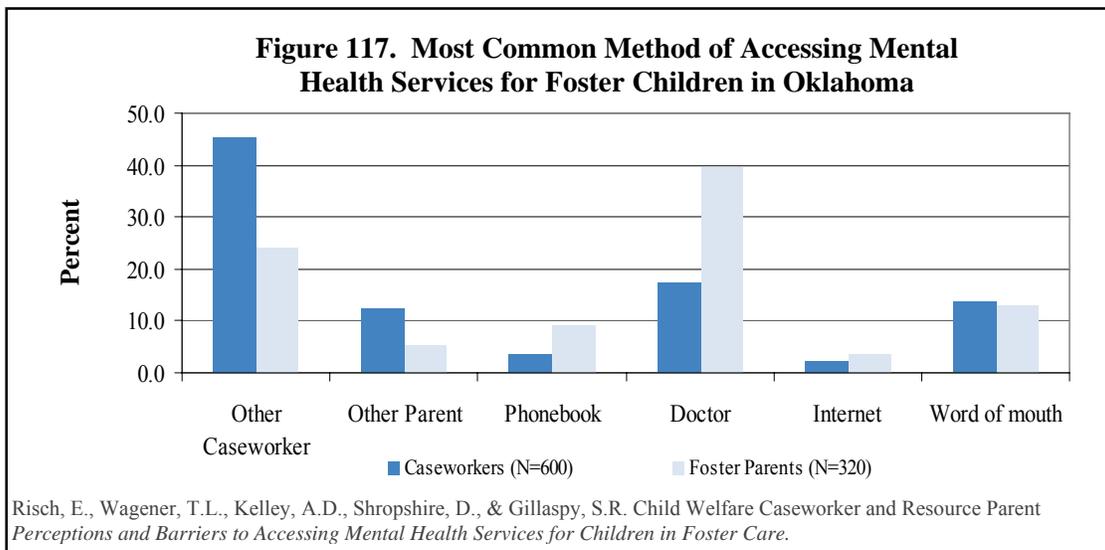
Table 50. Percentage of Oklahoma Caseworkers and Foster Parents Who Agree with the Following Statements		
	Caseworker	Foster
Psychological testing is NOT available in/near my county.	20	14
Psychological Medication Management is NOT available in/near my county.	24	21
Mental Health Therapy is NOT available in/near my county.	9	10

Source: Risch, E., Wagener, T.L., Kelley, A.D., Shropshire, D., & Gillaspay, S.R. *Perceptions and Barriers to Accessing Mental Health Services for Children in Foster Care*

Overall, foster parents were more satisfied than caseworkers, regarding the quality of mental health services available to foster children. It is important to note that 50% or fewer foster parents perceived mental health services as appropriate, helpful, easy to access, or good quality (Figure 116).

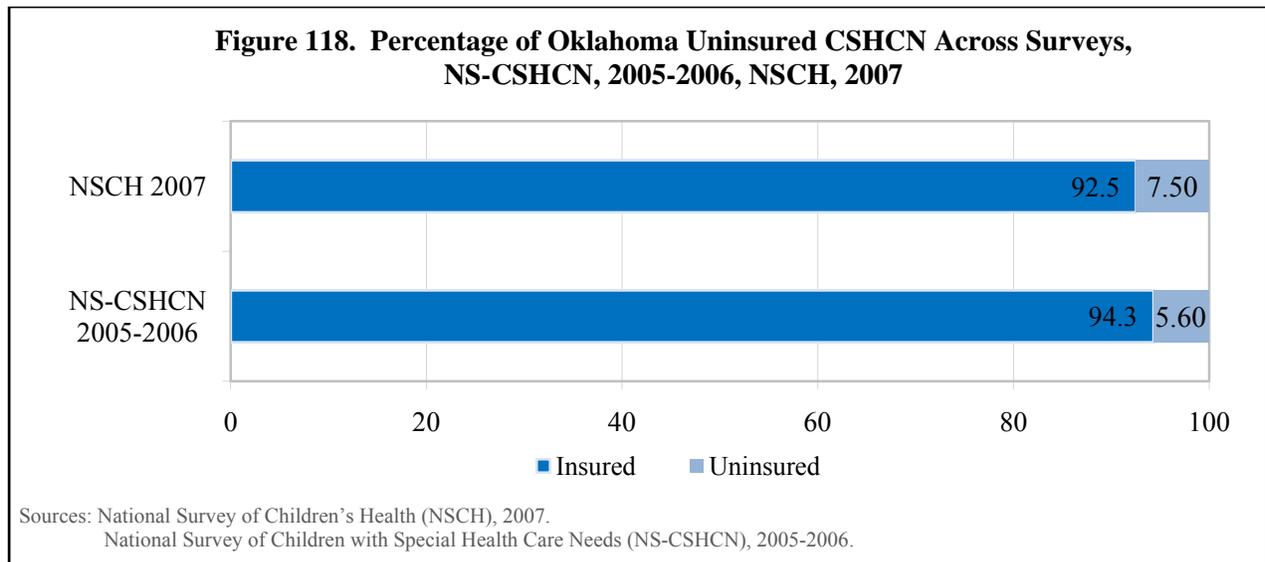


The most common methods utilized for accessing mental health for foster children are displayed in Figure 117. Foster parents considered a doctor to be their primary source for mental health care services while caseworkers considered other caseworkers as the primary source of mental health services.



- **Insurance**

Nationally, CSHCN are known to have high levels of health insurance coverage. According to the NSCH 2007, 95.1% of CSHCN in the U.S. have health care coverage. In Oklahoma according to 2007 NSCH data, the percentage of CSHCN with coverage is around 92%; the 2005-2006 NS-CSHCN reports 94% with coverage (Figure 118).



While the rates of uninsured CSHCN in Oklahoma are fairly similar to those in the rest of the nation, Oklahoma presents a larger percentage of CSHCN receiving Medicaid or coverage through the SCHIP. Nationally, 28.9% of CSHCN with insurance receive coverage from either Medicaid or SCHIP. In Oklahoma, 38.4% of CSHCN with insurance receive coverage from either Medicaid or SCHIP.

- **Medical Home**

One of the challenges of providing CSHCN access to care is the broad definition of CSHCN and the different conditions that require care. The AAP developed the medical home concept as a means of consolidating all of the components of an effective, comprehensive health care delivery system to meet the needs of all CSHCN. According to the AAP a medical home would provide care that is “...accessible, continuous, comprehensive, family-centered, coordinated, compassionate, and culturally effective...” The care would be available at the community level and would involve collaboration between the care provider, service providers, and the families. The care would not be interrupted as the child grows and would promote overall healthy development for the individual child. While the concept of a medical home has been embraced widely, there have been some challenges associated with putting it into practice.

Oklahoma has made some progress in implementing the medical home concept within CSHCN service delivery systems. Oklahoma was one of ten states to participate in a “National Initiative on Children’s Healthcare Quality’s Medical Home Learning Collaborative.” The 2003 Collaborative supported Sooner SUCCESS, a partnership between the University of Oklahoma Child Study Center and the State’s Title V CSHCN Program, to develop a network of

interagency providers and promote collaborative service provision for CSHCN. In 2005 a “State Implementation Grant for Integrated Community Systems of Services for CSHCN” was received. The grant supported the implementation of the Sooner SUCCESS model in an urban region further promoting the medical home concept in Oklahoma. Sooner SUCCESS continues to provide leadership in the support of a comprehensive service delivery system for CSHCN in Oklahoma, with an emphasis on building community capacity, family, and provider partnerships. Sooner SUCCESS has received funding from other sources, including the OHCA which has also developed initiatives to promote the medical home concept among Medicaid providers.

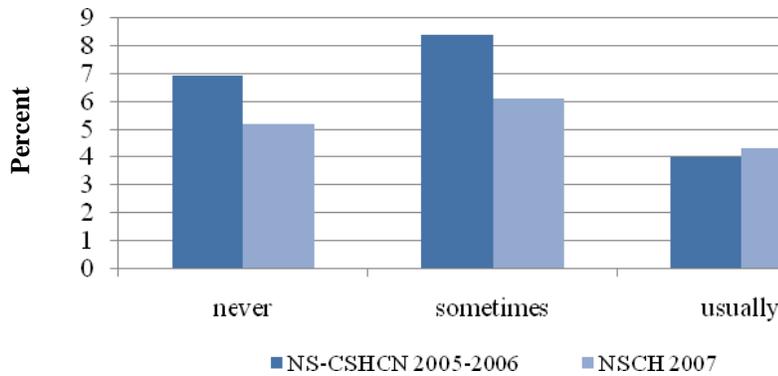
The OHCA’s medical home initiative began in 2007 with the formation of a Medical Advisory Task Force (MAT). The primary goals of the task force were to impact payment structure, credentialing, and access to medical homes. The initiative has resulted in the OHCA developing a medical home tier system. Providers have to meet and maintain certain requirements for each tier level. The system is specifically developed to target providers for SoonerCare. According to OHCA’s April 2010 provider fast facts report, there are 488 Tier 1 Patient-Centered Medical Homes (PCMH), 234 Tier 2 PCMH’s and 46 Tier 3 PCMH’s. While the OHCA’s numbers show that some medical homes are available, it is important to note that OHCA works primarily with providers targeting state insured children. In Oklahoma approximately 30% of the insured utilize state programs for insurance, so the majority would probably seek care outside of the OHCA targeted health care providers. In addition, OHCA does not identify which PCMH’s are providing for CSHCN. Therefore, other ways to measure or assess CSHCN medical home providers need to be found.

The 2007 NSCH data provides some ideas about the extent to which some of the components of a medical home are being addressed for CSHCN. Specifically, survey items regarding the amount of help caregivers need are useful in understanding the extent to which caregivers feel the care received addressed needs in a comprehensive and effective way. Table 51 indicates that the percentage of parents of CSHCN needing help was slightly higher among Oklahoma parents than in the nation.

Table 51. Percentage of Parents of CSHCN Who Needed or Received Help Arranging or Coordinating Care Concerning CSHCN, NSCH, 2007		
	Oklahoma Percentage	National Percentage
Parents who received help arranging or coordinating care for CSHCN	24.3	22.9
Parents who needed extra help arranging or coordinating care during the past 12 months	15.7	14.3
Source: National Survey of Children’s Health (NSCH), 2007.		

Among those who needed extra help arranging or coordinating care during the past 12 months, 7% never received the necessary help, only 4% felt that they usually received help, while more than 8% felt they received help sometimes (Figure 119).

Figure 119. How Often CSHCN Parents Received the Extra Help They Needed, NSCH, 2007, NS-CSHCN, 2005-2006

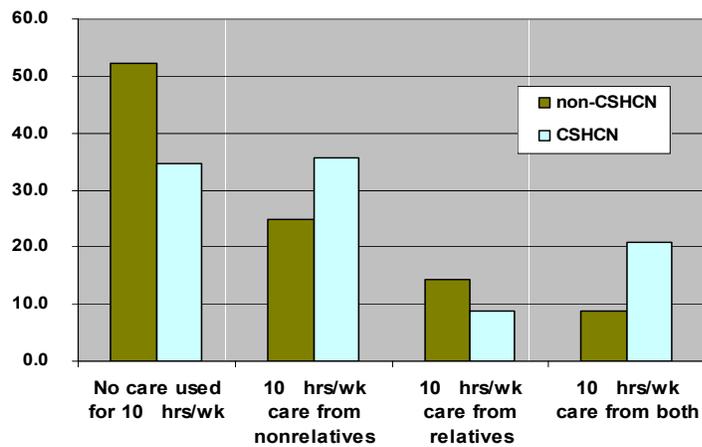


Sources: National Survey of Children’s Health (NSCH), 2007.
National Survey of Children with Special Health Care Needs (NS-CSHCN), 2005-2006.

Child Care

According to 2007 NSCH data, families of CSHCN use child care from non-relatives more often than non-CSHCN families, at 10 or more hours per week. CSHCN are also more likely to receive child care from both relative and non-relative providers compared to non-CSHCN (Figure 120).

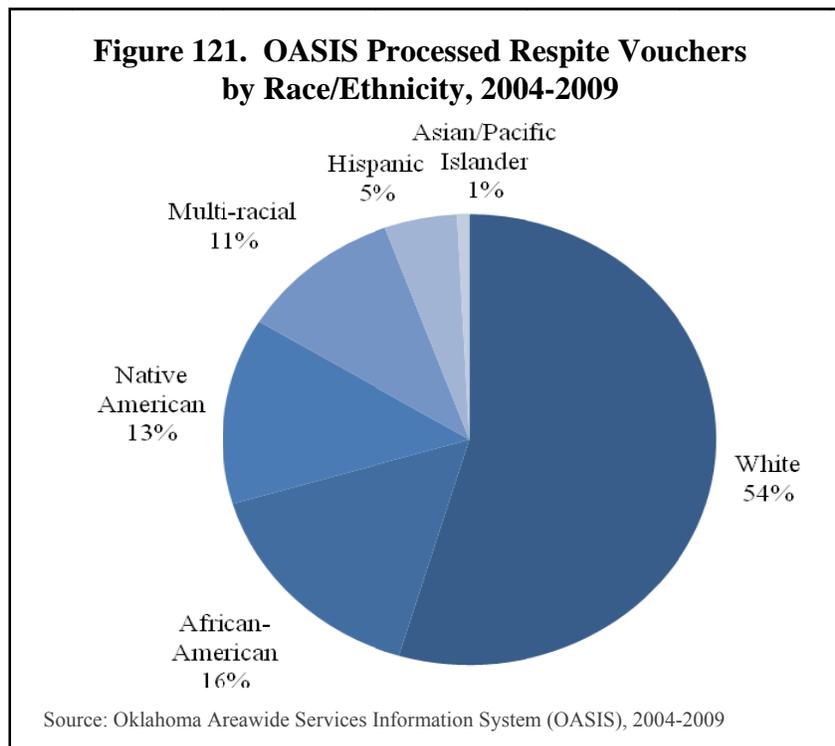
Figure 120: Child Care Usage for CSHCN, NSCH 2007



Therefore, it is not surprising that one of the needs from the CNA was also child care for CSHCN. During this past year, the Sooner SUCCESS State Interagency Coordinating Council focused on this topic at some of their meetings. The challenging issues from the child care provider’s perspective were not having enough trained staff to provide for the children’s needs and disruption to the activities of the other children. Families agreed that lack of trained staff is the major issue.

Respite

The Oklahoma Areawide Services Information System (OASIS) is a resource center that provides information and referrals to persons in Oklahoma who have disabilities and/or special health care needs. The OASIS is available statewide and has a database of thousands of service providers across the state, as well as state and local support groups. The OASIS also serves as the home of the Oklahoma Respite Resource Network (ORRN) and is the primary point of contact for individuals applying for the Respite Voucher Program. Between January 2004 and December 2009, the OASIS received 1,433 respite voucher applications for caregivers providing care to youth aged 21 or below. The majority of care recipients were males, (880) with 553 female care recipients. The racial/ethnic identities of the 1,369 (95%) who chose to indicate their race/ethnicity are presented in Figure 121. Similar to the general race/ethnicity group trends the majority identified as white (54%). Sixty-two percent (884) identified their specific condition/disability as a developmental disability. Thirty nine percent (558) identified with the chronic or special health care needs option. Almost one-fourth (323) of the care recipients were being raised by a grandparent (McCollom, 2009).



Transition

Transition is of great importance among CSHCN, their parents and providers. Educators often consider transition issues as they relate to Individualized Education Plans (IEP's), graduation rates, and preparing children to either attend higher education or take on a post-graduation job. Parents and some service providers are quick to acknowledge that the issue of transition involves more than academic planning. Transition planning is also necessary for preparing children to live more independent lives and receive the appropriate medical services they need as they age.

The OSDE, Special Education Services (SES), gathers information on education transition in their annual performance reports and state performance plans. Table 52 provides a brief overview of the education transition rates.

Table 52. Indicators in the Oklahoma State Department of Education, Oklahoma State Performance Plans, 2005-2007			
Percentage			
	2005	2006	2007
Graduation rates			
<ul style="list-style-type: none"> percent of students with disabilities in Grade 12 who graduated 	88.26	82.89	84.22
Drop-out rates			
<ul style="list-style-type: none"> percent of students with disabilities in Grades 9-12 who dropped out 	4.65	4.65	7.25
Secondary transition			
<ul style="list-style-type: none"> percent of youth (16 and older) with an IEP that includes coordinated, measurable, annual IEP goals and transition services that will reasonably enable student to meet post-secondary goals 	97.53	99.67	98.81
Post-school outcomes			
<ul style="list-style-type: none"> percent of youth with IEP's, who are no longer in secondary school, and who have been competitively employed, enrolled in some type of post-secondary school, or both, within one year of leaving high school 	Data not available	87.00	78.00

Source: Oklahoma State Department of Education, Oklahoma State Performance Plans, 2005-2007.

While supporting academic transition is important, of particular interest to the CSHCN Program is promoting transition planning associated with independent living and having access to adult health care services. The only available source of data on how well Oklahoma is doing with providing transition services to CSHCN is found in the 2005-2006 NS-CSHCN. The survey found that 43.7% of CSHCN, ages 12-17, successfully received the services needed to transition to adult health care, work, and independence. The remaining 56.3% did not receive the necessary services for transitioning. It is difficult to make any conclusions regarding transition as a result of the minimal data.

Gaps and Needs

- Measurement and Assessment Issues**

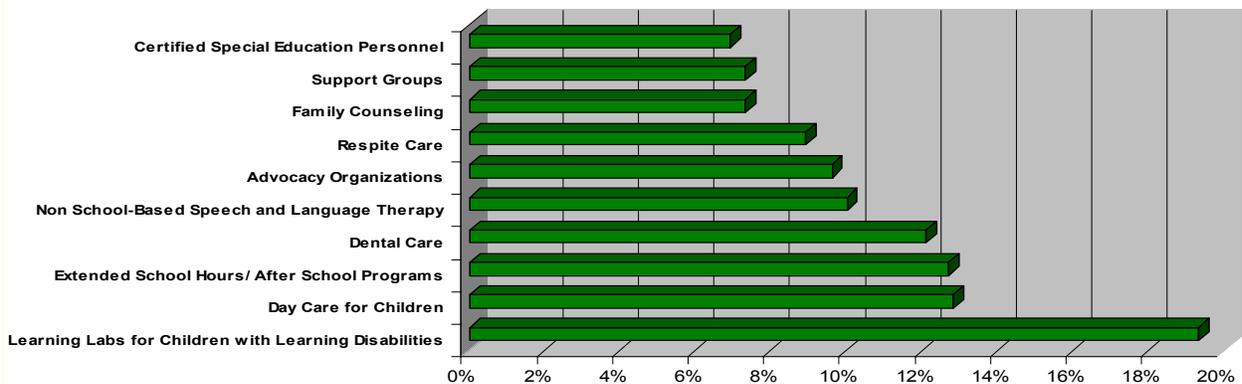
The greatest challenge to documenting the needs of CSHCN lies in the measurement and assessment issues. As discussed earlier in this needs assessment it is difficult to identify exactly who Oklahoma's CSHCN are, due to the broad definition of CSHCN and also the differences in the types of conditions providers and researchers are interested in. It is important that national surveys such as the NSCH and the NS-CSHCN continue to ask about the same conditions in upcoming surveys. This would greatly facilitate the enumeration process and the ability for states to track changes in conditions of the CSHCN population.

Another challenge to assessing needs, gaps, and being able to see how well Oklahoma serves CSHCN lies with medical, dental, and mental health services data shortages. Up until now, most of the focus on access to services has had to do with how many preventive care visits a child has. There needs to be a move toward recognizing that access involves more than having one preventive care visit, especially among CSHCN who have traditionally high levels of insurance and tend to access preventive care. It would be valuable to be able to measure whether or not, or to what extent medical or dental problems were addressed. Advancements in the medical home concept may allow for a better assessment of access to services. Overall, Oklahoma appears to be making progress; however, more consistent and rigorous measurement would increase access to more precise data of CSHCN in Oklahoma.

- **Perspective of Caregivers and Providers**

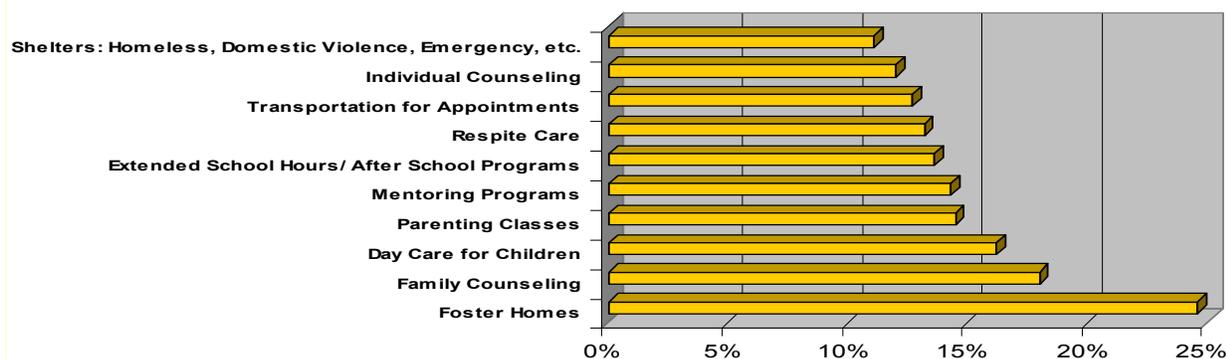
Results of the CNA showed that caregivers and providers agree that there is still a need for more respite care (Figures 122, 123). They also agree that qualified child care providers are needed for CSHCN, as well as extended school/after school programs and family counseling programs. Families reported that learning labs, after school programs, dental care, advocacy organizations, support groups, and certified special education personnel were what they needed. Providers also reported that their perceptions of what was most needed were foster homes, parenting classes, mentoring programs, and transportation for appointments.

Figure 122. Most Frequently Identified Needs, Family Perspective, CNA, 2007-2008



Source: Sooner SUCCESS Community Needs Assessment, 2007-2008.

Figure 123. Most Frequently Identified Needs, Provider Perspective, CNA, 2007-2008



Source: Sooner SUCCESS Community Needs Assessment, 2007-2008.

IV. MCH Program Capacity by Pyramid Levels

A. Direct Health Care Services

One of the foremost health needs in Oklahoma is access to comprehensive health services for the MCH population. Providers and services for high-risk children and children with special health care needs are always limited, and access for many of the specialty services is available only in Oklahoma’s major metropolitan areas, Oklahoma City and Tulsa. While some regional services are available, they are inadequate for the children in need of publicly supported health care. Lack of access to health services creates barriers, including travel time and transportation costs, for families residing outside the metropolitan centers. Moreover, workplace leave policies often prevent parents and families from gaining access to special services in a manner that is timely, convenient, and productive.

Recent statewide budget shortfalls have been acutely felt by social services and health programs, challenging the capacity of Oklahoma to meet population health needs. State funds to support SoonerCare program enrollment and participation have declined as state dollars for these activities have been curtailed.

In April 2010, a targeted Voluntary Out Benefits Offer (VOBO) was extended to eligible staff in the OSDH Child Guidance Program. The VOBO option was offered as a mechanism to reduce agency expenses vis-a-vis the budget shortfall and to enable employees wishing to separate voluntarily from the OSDH to do so. The VOBO option/opportunity will terminate on June 30, 2010. As of May 28, 2010, a total of 40 employees have been approved to receive the VOBO. As a result, a Reduction in Force (RIF) will not be implemented to achieve the reduced staffing pattern outlined in the Child Guidance Business Plan for reorganization. Currently, there are 24 open positions, covering 14 counties, in the Child Guidance Program. These vacancies cover disciplines of Psychological Clinicians, Child Development Specialists, and Speech Language Pathologists.

Maternity care across Oklahoma has continued to shrink. It is currently believed that two primary factors contribute to the loss of providers: insufficient Medicaid reimbursement rates, particularly for high-risk mothers, and escalating costs for liability insurance. Consequently, more pressure is being placed upon the limited MCH funds available to support existing, but declining, direct prenatal care services. Rural areas of the state are particularly hard hit by the diminishing availability and accessibility of maternity services in the state. Federally Qualified Health Centers (FQHCs) are filling some of the need for comprehensive primary health care, yet, they too have been impacted by the national economic downturn that has led to restrictions on budget funding.

FQHCs are community owned and operated organizations that provide comprehensive primary and preventive care services, including health, oral health, mental health, and substance abuse to persons of all ages, regardless of their ability to pay. FQHCs are located in federally-designated Medically Underserved Areas, playing an important role in serving citizens in rural areas, as well as the homeless and migrant worker population groups. In addition to health care, FQHCs offer services providing transportation, case management, and health education.

Currently, in Oklahoma, there are 13 FQHCs receiving federal grants, four similar state-funded look-a-like FQHCs (clinics that provide services but are not FQHC grant funded), and 19 satellite FQHCs. In 2008, staff at the 13 federally-funded FQHCs served 101,954 patients for a total of 369,836 encounters. Over 40 percent of these patients (42,584) had incomes at or below 100% of the FPL, while 47.6 % (48,499) were uninsured. Compared to the general population, a disproportionately large number of patients seen at the federally-funded FQHCs were female, African-American or Hispanic. These population groups made up 59.4%, 14.6%, and 19%, respectively, of all visits. Elderly patients, those aged 65 years and older, make up a considerable share of visits, representing 13.5%. Prenatal care was provided to 1,724 women, and physicians at FQHCs delivered 833 infants in 2008. Homeless patients (5,331) and seasonal migrant workers (428) were seen with some regularity (Department of Health and Human Services, 2008).

Child health care continues to be a challenge. Although enrollment and eligibility thresholds for SoonerCare health care coverage increased for children across the state, the lack of available providers persists. Rural families are disproportionately affected by the shortage of providers accepting SoonerCare patients. While OHCA is required to identify providers of child care services, the agency cannot guarantee those providers are conveniently accessible for families. Distance to health care is a significant barrier. Direct health services supplied by the OSDH are limited, with most resources being directed toward assisting families in identifying private health care providers who are willing to accept SoonerCare patients. Similar to maternity care, state funds have not increased for perinatal or child health care programs.

Table 53 indicates that a leading barrier to direct health services is the ratio of health care professionals to the number of people in the state. Oklahoma lags behind national ratios for non-federal physicians, registered nurses, and dentists (Kaiser Family Foundation, 2008). In rural areas, the shortage is even more pronounced. A review of all active physicians practicing in Oklahoma in 2007, including students in graduate medical programs and those working for state and federal agencies, found that 73% practiced in urban areas, 25% in rural locations, with just

2% delivering care in mixed settings. The county with the largest number of physicians was Oklahoma County, where Oklahoma City, the state’s capitol, is located. Five counties in rural Oklahoma had only one practicing physician (Oklahoma State University Center for Rural Health, 2008).

Table 53. Ratio of Health Care Professionals to the Population, Oklahoma and U.S., 2008			
	Non-Federal Physicians	Registered Nurses	Dentists
	n=8,712	n=26,760	n=2,210
Oklahoma	1 physician for every 417 people	1 nurse for every 136 people	1 dentist for every 1,667 people
	n=991,066	n=2,542,760	n=233,104
U.S.	1 physician for every 310 people	1 nurse for every 120 people	1 dentist for every 1,250 people

Source: Kaiser Family Foundation, State Health Facts, 2008

Many rural communities have aging populations with higher rates of chronic health conditions and disability. The residents of these communities face economic hardships due to declining local economies, marginal household incomes, and diminished purchasing power. Because of their rural locations, transportation for residents to regional or metropolitan centers for health care is problematic. For those counties with limited providers, accessing needed preventive and primary care can be out of reach due to expense or travel distance. The state’s aging population impacts the availability of services not just in the aging of patients but also in the aging of health care providers. Many of Oklahoma’s providers are approaching retirement age. In 2007, 60% of practicing physicians in rural counties were older than 50 years of age, and approximately half of physicians in urban areas were past that age milestone (Oklahoma State University Center for Rural Health, 2008).

Contributing to the provider shortage for health care practitioners just beginning their careers are capacity limitations faced by health care professional education programs. A study published in 2004 on higher education found that in the nursing and allied health graduate education programs 79% of applicants were qualified but only 57% of those qualified were admitted. Faculty shortages and lack of clinical space and practicum facilities were cited as reasons for some of this discrepancy (Governor’s Council on Workforce and Economic Development, 2006).

The Oklahoma Governor’s Council for Workforce and Economic Development published a report, *Oklahoma’s Health Care Industry Workforce: 2006 Summary*, which examined health care worker vacancies as of 2005, projecting shortages for a number of medical and technical occupations. Anticipated shortages will worsen until 2012 for the following professions: 1) nurses; 2) lab technicians; 3) physical therapists; 4) surgical technologists; 5) occupational therapists; 6) pharmacists; and 7) radiology and respiratory professionals (Governor’s Council on Workforce and Economic Development, 2006). In a follow-up study completed by the Oklahoma Healthcare Workforce Center in 2008, it was noted that there were also high vacancy rates and predicted shortage concerns for emergency medical technicians and chemical dependency counselors (Oklahoma Health Care Workforce Center, 2009).

The findings of the Governor’s workforce report overlap with those noted at the national level.

In the U.S., public health workforce studies report that there are: 1) insufficient numbers of health professionals within specific skilled public health occupations, such as public health nurses and epidemiologists; 2) trends toward additional shortages of experienced workers who are approaching retirement age; 3) inadequate workplace incentives for recruitment, retention, and recognition of qualified professionals and students into the field of study; and 4) insufficient preparation in professional education programs and orientation and assimilation into the public health system. If the Governor's workforce report is accurate and not sufficiently confronted by the public health community, severe strains will continue and exacerbate the tensions at work on the national and Oklahoma public health system (Oklahoma Health Improvement Plan, 2010-2014).

MCH provides gap filling clinical services through county health departments and contract providers. Child and adolescent health clinical services include outreach, physical examination and treatment, anticipatory guidance, social work, nutrition, and health education. Family planning and maternity services include outreach, risk assessment, physical examination and treatment, social work, nutrition, and health education. Dental health services are also provided to include oral examinations, clinical procedures, and treatment. Through contracted providers the CSHCN Program provides direct health care services to neonates, children with Sickle Cell Disease, children with Autism Spectrum Disorders and children who have been placed in custody of the state. The CSHCN Program provides formula, diapers, and adaptive equipment through the Supplemental Security Income (SSI) Disabled Child Program (DCP) to children who receive SSI, as well as specialized formulas to children who have no other resource for receiving formula. The CSHCN Program also provides respite care for the parents/caretakers of children who are medically fragile.

A sizable portion of Oklahoma has been designated as a Health Professional Shortage Area (HPSA) as defined by Health Resources and Services Administration (HRSA). Designation of a Health Professional Shortage Area is determined by having shortages of primary medical care, dental care, or mental health providers and may be geographic (a county or service area) or a population group (e.g., a low income population). The following map (Figure 124) displays the areas in Oklahoma that meet the designation as a HPSA. This provides further documentation that primary care services cluster in metropolitan areas, although small sections in the metropolitan areas have also been designated as shortage areas. The general assessment is that there is an over-supply of primary care services in most sections of the metropolitan areas, with rural areas struggling to maintain the current level of limited services.

Figure 124. Primary Care Health Professional Shortage Areas (HPSA), February 2010

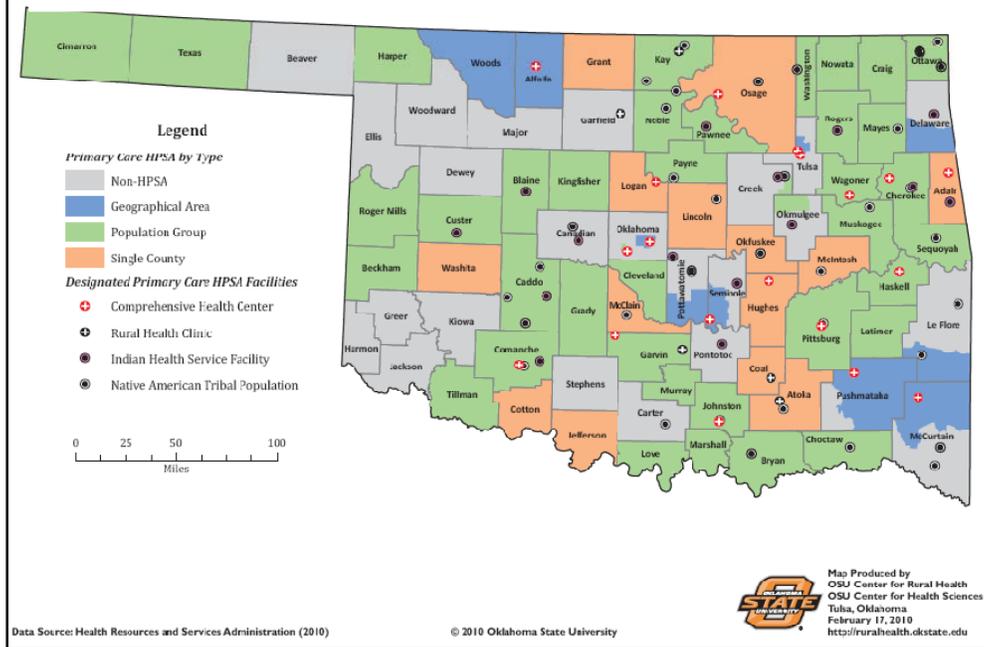
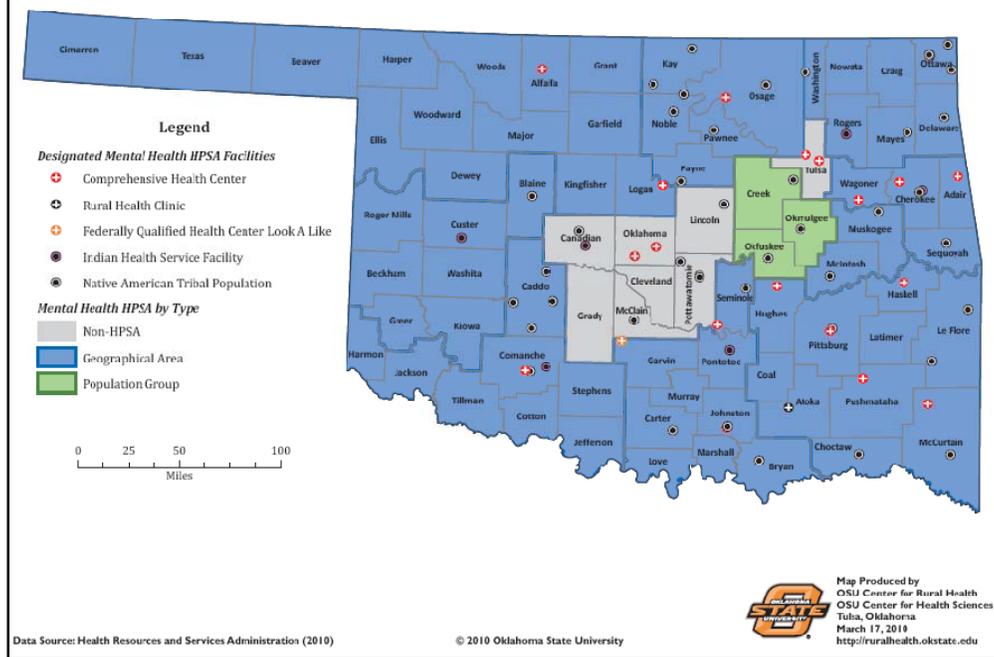


Figure 125 indicates areas of the state designated as either mental health HPSAs by geographic area or by population. With the exception of the two major metropolitan areas of Oklahoma City and Tulsa, the entire state is designated as a HPSA for mental health care services. This coupled with the high rates of mental health illness prevalent in the state are strong indicators of a major public health need for Oklahoma’s most vulnerable populations. The map of mental health HPSAs also provides a snapshot of current facilities for comprehensive health centers, rural health centers, IHS facilities, FQHC look-a-like clinics, and areas where tribal populations are located throughout the state. Southwestern and Northwestern Oklahoma have few to no services provided through any of the above mentioned facilities.

Figure 125. Mental Health Professional Shortage Areas (HPSA), March 2010



B. Enabling Services

The presence of health disparities within a population is the result of multiple factors (cultural, socioeconomic, behavioral, geographical, and structural) rather than the effect of a single determinant, such as the lack of direct health care services. Health care utilization and health status often vary by characteristics within each of these factorial domains. When assessing the relationship among these many contributing variables, it frequently becomes clear that services, which further the ability of clients and patients to access community resources, are a significant need for a fully operational and beneficial health care system.

Often there appears to be an indirect relationship between the need for direct health care services and the need for enabling services. That is, with the pull of the increasing need for direct health care services, there is an opposing force which diminishes the capacity to expand enabling services. Thus, a trade-off seems to exist between the state's ability to provide direct services and the assistance the state can supply to clients in their pursuit of timely and adequate health care. This challenge may be exacerbated in economic downturns like that currently being experienced by states within the U.S.

The OHCA administers the SoonerCare and Insure Oklahoma health coverage programs. The state created the Insure Oklahoma program to bridge the gap in health care coverage for low-income working adults. Under the Employer Sponsored Insurance (ESI) program, premium costs are shared by the state (60%), the employer (25%), and the employee (15%). Under the Individual Plan (IP), individuals unable to access benefits via their employer, including those who are self-employed or those temporarily unemployed, have the ability to buy health insurance

directly through the state. Individuals with incomes up to 200% of the FPL are eligible for the Insure Oklahoma program. Cumulative total enrollment for the year ending June 2010 was 31,860 individuals; 59% were enrolled in the ESI, while the remaining 41% were enrolled in the IP. Each successive month has seen an increase in the participation of the Insure Oklahoma program. Federal poverty level breakdown of total enrollment reveals that 28% of enrollees were at or below 100% of FPL, 24% were 101-133% of FPL, 14% were 134-150% of FPL, and 34% were 151-200% of FPL. Total average monthly cost per member per month over the period May 2009 to May 2010 was \$278.

As mentioned above under Direct Health Care Services, the state of Oklahoma faces a supply shortage in the number of health care providers, particularly in geographically remote areas. Accordingly, transportation continues to be a significant health-related issue for various populations, though it has not been readily identified in health surveys as problematic. Oklahoma does not have a mass transit system; even the transit system available within the Oklahoma City and Tulsa metropolitan areas is inadequate to population commuter needs. Rural residents have become accustomed to driving extended distances for their household needs. In part, this may explain the inability of surveys to identify transportation as a legitimate barrier to health care access. As transportation becomes more costly during economically depressed periods, many more individuals go without appropriate health care.

Another easily identifiable need for the state is translation services for the Spanish-speaking migrants living and working in Oklahoma. With a burgeoning population of Hispanics, this need continues to grow in rural as well as in the metropolitan centers. The majority of the need is in the greater metropolitan Oklahoma City and Tulsa areas, but other more rural areas continue to grow as well. A large number of the rural migrants work in the livestock industry, and this business does not guarantee long-term employment. As a result, it is difficult to predict a stable need for multi-lingual providers and culturally appropriate translators.

Access to specialty care is particularly difficult for the rural poor. Without a state-recognized system of perinatal care, a high-risk mother often has no option but to deliver in a hospital not equipped to handle a complicated birth. Transportation services are not available to assure the mother can be transferred to a facility appropriate for her risks or those of the infant.

There is a transportation service that is offered as an attempt to serve Oklahoma's low-income population. SoonerRide is Oklahoma's non-emergency transportation program for people being served by Medicaid. An individual is eligible for SoonerRide transportation services if he/she has a valid Medicaid Card (except Qualified Medicare Beneficiary and Specified Low-Income Medicare Beneficiary-only clients, clients enrolled in SoonerCare Plus, and clients who are institutionalized). Although SoonerRide assists individuals in accessing medical services, without which they would either get inadequate care or possibly no care at all, the service has limitations, often leaving many in need of services without consolation. Reservations for routine medical services must be made a minimum of three business days in advance, which can be problematic for some individuals, since often, due to work inflexibility or severity of illness, they cannot meet this requirement. Also, since only transportation for the Medicaid client is allowed (children may not accompany adults when the appointment is for the adult), many non-English speaking clients face language barriers when attempting to obtain services. Many of these

individuals with Limited English Proficiency (LEP) often rely on their bilingual children to serve as their interpreters and therefore receive more adequate services and a less frustrating experience.

Families with CSHCN report there is a lack of child care providers for CSHCN in Oklahoma. The only facility in the state that specifically caters to CSHCN is in Oklahoma City. Information compiled by the Oklahoma Child Care Resource and Referral Association showed that 3,275 child care centers and homes indicated they accept children with special needs, but families indicated their children are often turned down because of various issues the facilities are not equipped to handle. The OKDHS provides financial support in the form of a “special needs rate” which is an enhanced child care subsidy payment, but there is an income requirement to qualify for the child care subsidy and many families of CSHCN do not qualify.

Respite care is always a need for the families and caregivers of CSHCN. The OKDHS provides respite vouchers through the ORRN which is housed within the OASIS. Each voucher is for \$400 quarterly and families can use any caregiver they choose. The OASIS reported receiving 1433 respite voucher applications between January 2004 and December 2009 for children and youth under age of twenty-one. The ORRN is the only public provider of financial assistance for respite care in Oklahoma.

C. Population-Based Services

MCH provides education and training for health care providers, communities, schools, women, men, children, and families on health topics such as nutrition and physical activity, prevention of Sudden Infant Death Syndrome (SIDS), infant safe sleep, teen pregnancy prevention, school health, injury prevention, suicide prevention and violence prevention, including bullying. MCH works with child care providers statewide on health and safety issues and provides leadership with the state Early Childhood Comprehensive Systems (ECCS) Initiative. In addition, community education and training on female and male preventive health care, maternity care, and female and male reproductive health is provided. Ordinarily, the ability to improve capacity for working with other agencies and organizations involved with maternal and child health services is limited by available funds. In the wake of the national economic recession that began in December 2007, this limited ability has been more acute and lasting.

Despite the financial constraints, recent years have seen a significant improvement in interagency and organizational collaboration in many areas. MCH supports and provides technical assistance for FIMR, Maternal Mortality Review and Child Death Review activities. Oral health education, including the benefits of water fluoridation, is provided to communities, children, and families. All newborns are screened for metabolic disease and hearing loss and followed to assure appropriate intervention is received. The CSHCN Program provides education to health care providers and communities on issues impacting children with special health care needs.

D. Infrastructure Building Services

MCH provides leadership in formulating state policy for services targeted to the maternal and child health population, including children with special health care needs. The CSHCN program provides leadership in devising state policy for services directed toward children with special

health care needs and their families. On a statewide level, MCH provides education, training, and technical assistance to public and private health care providers on current health policies and standards of practice. Collaborative relationships with other state agencies, including institutions of higher education, serve to advance these efforts. CSHCN services can be obtained through local OKDHS offices located in every county of the state. The leadership role played by the MCH and CSHCN programs extends to Title V related activities to help assure communities have the necessary resources to identify health care needs of the MCH population and to develop or modify systems of care.

MCH continues to collaborate regularly with the OHCA and the OKDHS to determine health access barriers and the health needs for that segment of the MCH population which is in need of publicly funded health services. Working relationships with these sister agencies are strong with group processes and outcomes best described as shared efforts. The MCH Chief co-chairs, with a representative from OHCA, the PATF and CHATF. These task forces work to improve perinatal and child health for the SoonerCare and SoonerCare-eligible population in the state. Recent achievements for the PATF and the CHATF include SoonerCare/Medicaid-funded coverage of ultrasounds for women in the first trimester of pregnancy, funding of dental services to pregnant women enrolled in SoonerCare, and increased visibility of faxed referrals to the state's Tobacco Helpline.

In May 2007, MCH, along with other internal OSDH programs, structured activities targeted at reducing the state's infant mortality rates. These activities received the full support of the OSDH's Commissioner of Health, including the selection of infant mortality as an agency priority with the expectation of active and engaged participation for OSDH programs. The past three years have seen the effort expand into a statewide initiative, "Preparing for a Lifetime, It's Everyone's Responsibility," which engages both public and private partners at the state, regional, and community levels. Through the interaction and efforts of ten workgroups (Communications/Media; Preconception/Interconception Care and Education; Maternal Infections; Prematurity; Postpartum Depression; Breastfeeding; Tobacco Use Prevention; Infant Safe Sleep; Infant Injury Prevention; and Data), partners are engaged in the assessment of resources and capacity, planning, and development of strategic action steps to bring about change, or more accurately, a reduction in Oklahoma infant mortality. The initiative seeks to create a climate in which families, businesses, advocacy groups, health associations, and, more broadly, the public health community, actively become involved in this public health priority.

MCH utilizes various surveillance tools to monitor and evaluate the health care received by the Oklahoma MCH population. By using data from PRAMS, TOTS, the IGHS, and the YRBS, MCH analysts are able to determine and describe the health status, behaviors, service utilization, and health care access of the MCH population. Data collected by survey instruments are translated by MCH into information that can then be used to assist policy and program development in addressing issues to improve health conditions in Oklahoma. The State Systems Development Initiative (SSDI), a Maternal and Child Health Bureau funded grant project, enables the Title V program to link health-related data systems in an effort to create a richer understanding of the state's health system and outcomes. Data targeted for linkage include vital statistics data (e.g., births and deaths) with Medicaid eligibility and claims records, as well as data obtained through encounters with program clients. The latter records, collected in the

OSDH's PHOCIS, include program services for maternity, child health, family planning, immunization, and WIC clients. While some linkages have been developed, the SSDI is dedicated to expanding this work. MCH has a dedicated staff position assigned with the responsibility of linking SoonerCare/Medicaid data to records from vital statistics, PRAMS, and PHOCIS. In April 2010, MCH began a linking project that brings together PRAMS and TOTS data with records from the immunization registry, the Oklahoma State Immunization Information System (OSIIS). Initial findings and linking methods have been documented with an abstract submission to the Maternal and Child Health Epidemiology Conference to be held in Atlanta, Georgia in November 2010. Beyond these linkages, MCH has plans to link MCH surveillance data with that collected in the hospital discharge database, a repository of data maintained in Health Care Information, Center for Health Statistics, at the OSDH.

Other data systems are routinely used by analysts in MCH, particularly data from the U.S. Bureau of the Census (population data) and BRFSS. Personal contacts with OSDH program analysts are frequently called on for data requests and for details about program activities. These informal connections are invaluable to the evaluation and assessment process. Moreover, official and unofficial channels are exploited, in the best sense of the word, to collect data that are incorporated into the Title V Information System and the Five-Year Needs Assessment. Contacts are made with the Oklahoma Department of Commerce, the Oklahoma Department of Human Services, the Oklahoma Health Care Authority, the Oklahoma Department of Mental Health and Substance Abuse Services, and the Oklahoma State Department of Education. Internal and external data systems are utilized by MCH to monitor goal compliance, conduct program evaluation, respond to grant funding opportunities, and to provide for education or training purposes. Findings from data analysis, descriptive and inferential, are shared with the general public, legislative bodies, OSDH program areas, health care providers, and health advocacy groups.

V. Selection of State Priority Needs

After a thorough examination of the current data and health capacity in Oklahoma, it has been determined that the following priorities will move the state towards its overarching goal of reducing infant mortality and improving the health of Oklahoma's MCH population (Table 54). The process used in making these selections included the utilization of newly available electronic resources, such as online surveys and video conferencing during meetings.

The process of priority selection for this current Title V Needs Assessment was approached differently from previous Title V Needs Assessments for Oklahoma. MCH and CSHCN found a way to better capture what was otherwise considered an inaccessible population. Staff took advantage of available electronic resources through the internet, more specifically, SurveyMonkey, in an attempt to gather more input from all sectors of the state's diverse populations. Community and family involvement improved significantly with the development of the online survey tools which were widely disseminated through partner networks (Appendix G). The surveys included both open ended questions about the health needs of the three Title V population groups (A, B, C) and questions on ranking the importance of selected health conditions. The results from over 700 completed online surveys were received and the evaluation and analysis of the input guided MCH, CSHCN, and OFN to create a smaller subset of 10-12 health concerns for each of the Title V population groups. These proposed health

concerns were then presented to the PATF and CHATF (“expert” groups of professionals, stakeholders, and partners). The PATF and CHATF determined, via a process of organized meetings, review of data, and group discussion, recommendations for Oklahoma Title V priorities for MCH, CSHCN, and OFN to consider in order to gain the best possible outcomes for the MCH population.

A. List of Potential Priorities:

Initially over 60 potential priorities were selected from review of the community surveys; data on the MCH population groups; current priorities for the Oklahoma Health Improvement Plan (OHIP) and OSDH Strategic Targeted Action Teams (STAT); ongoing work by the OFN, Sooner SUCCESS, and CSHCN; and current Title V program priorities. Using a matrix tool (Appendix C), MCH, CSHCN and OFN further prioritized this list identifying the following for review and input from the PATF and CHATF:

- Access to care for a variety of mental and physical health issues among all population groups, including specialist care for CSHCN
- Tobacco use among all population groups
- Preconception care
- Obesity among all population groups
- Preterm birth
- Infant mortality
- Health disparities
- Infant safe sleep
- Oral health
- Unintended pregnancy/family planning
- Mental health
- Inductions and c-sections
- Child abuse
- STDs/risky sexual behavior
- Bullying
- Asthma
- Motor vehicle injury/death
- Youth depression/suicide
- Teen pregnancy
- Access to child care for CSHCN
- Respite care for CSHCN
- Transition for youth with special health care needs
- Family support/parenting classes for CSHCN
- Increased knowledge for families and providers about services available for CSHCN

B. Methodologies for Ranking/Selecting Priorities:

MCH, CSHCN and OFN presented the above list of potential priorities to the PATF and CHATF who then engaged in data review and discussions of the potential priorities over several meetings. This process initially resulted in three to five priorities being proposed for each of the Title V population groups: Part A: Access to Care, Unintended Pregnancy, Infant Safe Sleep; Part B: Access to Care, Depression, Obesity, Tobacco Use; and Part C: Child Care, Transition, Access to Care. Upon further discussion and input from both groups, MCH, CSHCN, and OFN determined that Access to Care was an overarching priority for all three population groups as was Tobacco Use Prevention, Obesity, and Preconception Health. Related specifically to Part A, unintended pregnancy and infant safe sleep were identified as priorities; depression and suicide among youth and motor vehicle injuries were identified as priorities for Part B; and child care for CSHCN and transition to adulthood for CSHCN were identified as priorities for Part C.

In finalizing the state priorities, MCH, CSHCN, and OFN made the decision to remove depression and suicide among youth from the priority list and consider these health concerns under the Access to Care priority. Infant mortality was added to the priority list as MCH, CSHCN, and OFN felt it was important to be consistent with the priorities of the OSDH and the OHIP.

C. Priorities Compared with Prior Needs Assessment:

The following table reflects the current priorities of Oklahoma’s Title V Program with those that have been initially selected for the next five years (Table 54). The change in some of the previous priorities is not intended to suggest that the former priorities have been adequately addressed, or are no longer areas of concern. Instead, the new issues have now grown to a higher level of importance based upon the conditions of current systems of care and the health status of the three MCH population groups. Due to high prevalence rates and the impact on the health of Oklahoma’s MCH population groups, the following priorities were maintained: obesity, transition services for CSHCN, and unwanted/unplanned pregnancies. Substance abuse behaviors was modified to focus solely on tobacco use prevention due to the public health crisis in Oklahoma concerning the alarmingly high rates of tobacco use across all MCH groups. Access was adapted to include all aspects of health care, including oral, mental, behavioral, and physical. In order to impact the pregnancy outcomes at an earlier point, prenatal care was removed and replaced with preconception care. Prenatal care and immunization fell under access to services and are addressed by national performance measures. Respite care was modified to include all sources of child care for families with CSHCN. Breastfeeding is a national performance measure with very strong advocates in the state working to address this issue. Data access and data linkage will be wrapped into access to care in an effort to improve health care access by improving health care data systems and data sharing.

A departure from previous needs assessments and priority lists, this list of state priorities is ranked, in that the first priority, “Reduce infant mortality” is the number one priority for Title V. The remaining nine priorities are listed in order of Parts A, B, and C of the MCH Title V population groups and are not ranked in any particular order.

Table 54. Oklahoma Title V Priorities		
Proposed 2011-2015 Priorities		2006-2010 Priorities
1	Reduce infant mortality	Reduce the prevalence of obesity among the MCH populations
2	Improve access to comprehensive health services for the MCH population	Reduce substance abuse behaviors in the MCH populations
3	Reduce the prevalence of tobacco use among the MCH population	Improve access to dental health services by pregnant women and children
4	Reduce the prevalence of obesity among the MCH population	Increase access to prenatal care
5	Improve preconception health for females and males of reproductive age	Improve the system of respite care for CSHCN families
6	Reduce unwanted, unplanned pregnancies	Improve transition services for children with special health care needs
7	Improve infant safe sleep practices	Reduce unwanted, unplanned pregnancies
8	Reduce motor vehicle injuries among children and youth	Increase the proportion of fully immunized children entering school
9	Improve transition services for CSHCN	Increase the proportion of mothers who breastfeed their infants
10	Improve the system of child care for families of CSHCN	Improve data access and file linkages of public health databases

D. Priority Needs and Capacity:

The Oklahoma Title V Program’s capacity to address the identified state priorities will be impacted by the recent economic downturn. With less state funds, there are challenges presenting, yet at the same time, these challenges are being viewed as opportunities. Relationships are being redefined, use of funds and staff are being evaluated for impact and realigned, new ways to sustain key activities (leveraging of multiple funding sources versus depending on one funding source) are being identified, and better engagement of the public in awareness of the issues is occurring.

The State priorities will require activities to occur within all levels of the pyramid. The Title V Program will continue to provide direct health care services as a safety net provider for child health and maternity clinical services. A larger role within the state will continue for family planning clinical services with support from fee and Medicaid revenue, and state, local and other federal funds. Linkage of clients to needed services will occur through enabling services such as outreach and education, assisting with navigation of health and social services systems, completion of necessary documentation to apply for needed services, and provision of support to

understand information received/requested (e.g., interpreter services; toll free hot lines; web sites). A focused effort will continue to increase the provision of population-based and infrastructure building services. Activities in these areas of the pyramid are key to impacting population groups as a whole, and facilitating changes in population health status. Public outreach and education, screening for medical conditions, and community-based prevention activities are just a few examples of populations-based services that will impact identified state priorities. Training of health care providers, accomplishing needs assessments, performing evaluation of services, building relationships to assure coordination of efforts and development or improvement in systems, and using data to inform policy and services development as well as quality improvement activities are infrastructure building services to be provided.

Being aligned with the priorities of the OHIP and OSDH (children's health, tobacco prevention and control, obesity reduction) strengthens the capacity for the Title V Program to address the identified state priorities. State and OSDH leadership have put into writing their commitment to support efforts to impact these issues to improve the health status of Oklahomans.

E. MCH Population Groups

The needs assessment process required input for all three MCH population groups. Priorities were reviewed and selected with no preference allocated to any one particular MCH population group though the process did assure priorities were identified for each of the population groups: access to care, tobacco use prevention, obesity, and preconception health cross the three population groups; unintended pregnancies, infant safe sleep, and infant mortality are Part A, Pregnant Women, Mothers, and Infants; motor vehicle injury is specific to Part B, Children; and priorities for Part C, Children with Special Health Care Needs are child care and transition to adulthood for CSHCN.

All priorities are considered to be of equal importance and therefore no priority takes precedence over another, with the exception of infant mortality. Related, priorities were not selected solely for the reason that they represent a specific pyramid service. As already indicated, the priorities will be addressed through ongoing activities in each of the pyramid levels. The Title V Program does not consider any issue singular in nature that would require only one pyramid service level to achieve desired results.

F. Priority Needs and State Performance Measures

Success in addressing the priority needs will be determined through input received from those receiving services as well as progress made in national and state performance measures. New state performance measures were developed to facilitate the evaluation of services aimed at providing quality preconception care and enhancing the child care system for families with CSHCN. Two state performance measures, dental care services for CSHCN and infant safe sleep were modified from the previous years' measures to better incorporate identified needs. Five state performance measures were determined to still be appropriate for the identified priorities and were not changed (unintended pregnancy, adolescents smoking tobacco products, adolescents overweight and obese, develop and maintain capacity to access and link health-related data, respite care for CSHCN). It is anticipated that an additional new state performance measure related to mental health will be added next year. More specifically, the states in Region VI are exploring a regional performance measure on postpartum depression that each state would

measure through their PRAMS projects. All priority needs are linked to state and national performance measures (Table 55).

As previously indicated, identified state priorities are not ranked except for infant mortality. Infant mortality in Oklahoma is a priority driven by the Title V Program and the statewide initiative “Preparing for a Lifetime, It’s Everyone’s Responsibility” as well as the OHIP and OSDH identified priorities. It has therefore been determined by the Title V Program that although infant mortality is a key outcome of the MCH Title V Block Grant Program and many of the identified state priorities as well as national and state performance measures address infant mortality, identifying infant mortality as a state priority in the written grant application will ensure this important measure of health stays visible as work is accomplished. Also, as an identified priority, infant mortality will provide a basis for moving toward incorporation of the life course perspective in Title V efforts. The life course perspective looks at health over the life span acknowledging that each life stage influences the next. Social, economic, and neighborhood environments acting across the life course also impact individual and community health.

Table 55. National and State Performance Measures by Selected State Priorities (and data sources)

<u>Priority</u>	
1. Reduce infant mortality	See National Performance Measures 1, 7, 8, 11, 15, 17, 18 See State Performance Measures 1,6,7,8
<u>Overarching Priorities (in no particular order):</u>	
2. Improve access to comprehensive health services for the MCH population	National Performance Measure 01: The percent of screen positive newborns who received timely follow up to definitive diagnosis and clinical management for condition(s) mandated by their State-sponsored newborn screening programs. (Screening Services)
	National Performance Measure 02: The percent of children with special health care needs age 0 to 18 years whose families partner in decision making at all levels and are satisfied with the services they receive. (CSHCN survey)
	National Performance Measure 03: The percent of children with special health care needs age 0 to 18 who receive coordinated, ongoing, comprehensive care within a medical home. (National CSHCN Survey)
	National Performance Measure 04: The percent of children with special health care needs age 0 to 18 whose families have adequate private and/or public insurance to pay for the services they need. (National CSHCN Survey)
	National Performance Measure 05: Percent of children with special health care needs age 0 to 18 whose families report the community-based service systems are organized so they can use them easily. (CSHCN Survey)
	National Performance Measure 07: Percent of 19 to 35 month olds who have received full schedule of age appropriate immunizations against Measles, Mumps, Rubella, Polio, Diphtheria, Tetanus, Pertussis, Haemophilus Influenza, and Hepatitis B.
	National Performance Measure 09: Percent of third grade children who have received protective sealants on at least one permanent molar tooth. (3 rd Grade Dental Health Survey)
	National Performance Measure 12: Percentage of newborns who have been screened for hearing before hospital discharge.
	National Performance Measure 13: Percent of children without health insurance. (U.S. Census Bureau)
	National Performance Measure 16: The rate (per 100,000) of suicide deaths among youths aged 15 through 19. (Vital Records)
	National Performance Measure 17: Percent of very low birth weight infants delivered at facilities for high-risk deliveries and neonates. (Vital Records)
	National Performance Measure 18: Percent of infants born to pregnant women receiving prenatal care beginning in the first trimester. (Vital Records)
	State Performance Measure 8: The extent to which the MCH program area develops and maintains the capacity to access and link health-related data relevant to targeted MCH populations.
	State Performance Measure 9: The percent of Medicaid eligible children with special health care needs who report receiving dental services other than routine dental care. (OHCA)

Table 54 (Cont'd). National and State Performance Measures by Selected State Priorities (and data sources)

<p><u>Overarching Priorities</u> <u>(in no particular order):</u></p>	
<p>3. Reduce the prevalence of tobacco use among the MCH population</p>	<p>National Performance Measure 15: Percentage of women who smoke in the last three months of pregnancy. (PRAMS)</p>
	<p>State Performance Measure 02: The percent of adolescents grades 9-12 smoking tobacco products (YRBS)</p>
<p>4. Reduce the prevalence of obesity among the MCH population</p>	<p>National Performance Measure 11: The percent of mothers who breastfeed their infants at 6 months of age (TOTS)</p>
	<p>National Performance Measure 14: Percentage of children, ages 2 to 5 years, receiving WIC services with a Body Mass Index (BMI) at or above the 85th percentile. (WIC measures at 95th percentile)</p>
	<p>State Performance Measure 04: The percentage of adolescents overweight or obese (greater than or equal to 85th percentile of gender-specific body mass index [BMI] distribution). (YRBS)</p>
<p>5. Improve preconception health for females and males of reproductive age</p>	<p>State Performance Measure 06: The percent of women receiving quality [American College of Obstetrics and Gynecology (ACOG) standards] preconception care. (PRAMS)</p>
<p><u>Part A: Pregnant Women, Mothers, and Infants</u></p>	
<p>6. Reduce unwanted, unplanned pregnancies</p>	<p>National Performance Measure 08: The rate of birth (per 1,000) for teenagers aged 15 through 17 years.(Vital Records)</p>
	<p>State Performance Measure 01: The percent of women who have an unintended pregnancy (mistimed or unwanted) resulting in live birth. (PRAMS)</p>
<p>7. Improve infant safe sleep practices</p>	<p>State Performance Measure 07: The percentage of infants who are put to sleep on their backs. (PRAMS)</p>

Table 55. (Cont'd.) National and State Performance Measures by Selected State Priorities (and data sources)	
<u>Part B: Children</u>	
8. Reduce motor vehicle injuries among children and youth	National Performance Measure 10: The rate of deaths to children aged 14 years and younger caused by motor vehicle crashes per 100,000 children. (Injury Prevention Service)
<u>Part C: Children with Special Health Care Needs</u>	
9. Improve the system of child care for families of CSHCN	State Performance Measure 03: The number of families with a child with special health care needs receiving respite care provided through the CSHCN program. (CSHCN staff)
	State Performance Measure 05: The percentage of children with special health care needs who receive child care services at licensed child care facilities and homes. (CSHCN staff)
10. Improve transition services for CSHCN	National Performance Measure 06: The percentage of youth with special health care needs who received the services necessary to make transitions to all aspects of adult life, including adult health care, work, and independence. (CSHCN Survey)

VI. Outcome Measures, Federal and State

Following the selection of the priorities for the next five years, MCH, CSHCN, and OFN reviewed the national performance measures and the most recent state performance measures to assess their ability to address the new priorities. Each measure was matched to the priorities to evaluate their effectiveness in making a positive impact on each priority. Performance targets are nominally set to challenge the program in making improvements, given the limitations created by static objectives within the agency setting.

The state has not selected any additional outcome measures beyond the federally established six measures. One of the limitations of outcome measures for MCH programs is that they tend to be mortality-based. Because public health is prevention-oriented, Oklahoma has not been able to select additional outcome measures that it believes are indicative of its goals. In addition, many variables have positive and negative effects upon the outcomes specified that are beyond the control of MCH. Thus, MCH must be responsive to external change that impacts outcomes, and it must use its resources to adjust and provide gap-filling services or to change systems where possible and most effective.

Bibliography

Alan Guttmacher Institute. (2001). *Teenage sexual and reproductive behavior in developed countries: can more progress be made?* Alan Guttmacher Institute. New York: Alan Guttmacher Institute.

American Academy of Pediatrics. (2010). *Recommendations for Preventive Pediatric Health Care (Periodicity Schedule)*. Retrieved October 10, 2009, from American Academy of Pediatrics (AAP) Web Site: <http://practice.aap.org/content.aspx?aid=1599>

Blumberg, S.J., et al. (2005). Design and operation of the National Survey of Children with Special Health Care Needs, 2005-2006. *Vital Health Statistics 1,1* , 45.

CDC and the Association of State and Territorial Dental Directors. (2010, April 16). *Oral Health Resources, Oklahoma- 2009* . Retrieved April 22, 2010, from Synopses of State and Territorial Dental Public Health Programs :
<http://apps.nccd.cdc.gov/synopses/StateDataV.asp?StateID=OK&Year=2009>

Centers for Disease Control and Prevention. (2010). *Alcohol Related Disease Impact (ARDI)*. Retrieved February 3, 2010, from Centers for Disease Control and Prevention, Alcohol Related Disease Impact (ARDI): <http://apps.nccd.cdc.gov/ardi/Homepage.aspx>

Centers for Disease Control and Prevention. (2009). *Compressed Mortality File 1999-2006, Series 20 No. 2L, 2009*. Retrieved March 15, 2010, from WONDER On-line Database:
<http://wonder.cdc.gov/>

Centers for Disease Control and Prevention. (2010, January 13). *National Immunization Survey*. Retrieved March 17, 2010, from Centers for Disease Control and Prevention:
<http://www.cdc.gov/nis/>

Centers for Disease Control and Prevention. (2008). *National Immunization Survey Data for 2008*. Retrieved April 23, 2010, from Centers for Disease Control and Prevention, National Immunization Program: http://www.cdc.gov/vaccines/stats-surv/nis/data/tables_2008.htm

Centers for Disease Control and Prevention. (2010). *National Immunization Survey-Teen Data for 2008* . Retrieved April 23, 2010, from Centers for Disease Control and Prevention, National Immunization Program: http://www.cdc.gov/vaccines/stats-surv/nisteen/data/tables_2008.htm

Centers for Disease Control and Prevention. (2009). *Unintended Pregnancy Prevention*. Retrieved 12 21, 2009, from CDC:
<http://www.cdc.gov/reproductivehealth/UnintendedPregnancy>

Centers for Disease Control and Prevention. (2010). *WISQARS (Web-based Injury Statistics Query and Reporting System)*. Retrieved February 16, 2010, from Injury Prevention & Control: Data & Statistics (WISQARS): <http://www.cdc.gov/injury/wisqars/index.html>

Cohen, R. A., & Bloom, B. (2010, February). *Access to and Utilization of Medical Care for Young Adults Aged 20-29 Years: United States, 2008*. Retrieved March 17, 2010, from NCHS Data Brief: <http://www.cdc.gov/nchs/data/databriefs/db29.pdf>

Conway, K. S., & Kutinova, A. (May 2006). Maternal health: does prenatal care make a difference? *Health Economics* , 461-88.

Dental Health Service. (2009). *Oklahoma Oral Health Needs Assessment 2007-2008*. Retrieved April 22, 2010, from Oklahoma State Department of Health: <http://www.ok.gov/health/documents/DHS%20FINAL%20REPORT%202007-2008.pdf>

Department of Health and Human Services. (2008). *2008 Uniform Data System Report for Oklahoma*. Retrieved May 25, 2010, from Department of Health and Human Services, Health Resources and Services Administration: http://www.hrsa.gov/data-statistics/health-center-data/StateData/2008/OK/2008_ok_summary.pdf

Finer, L. (2007). Trends in premarital sex in the United States, 1954-2003. *Public Health Reports* , 122 (1), 73-78.

Gaming News. (2009, December 14). *Casino City releases 2009-2010 Indian Gaming Industry Report*. Retrieved 15 January, 2010, from Gaming News: <http://www.casinocitytimes.com/news/article/casino-city-releases-2009-2010-indian-gaming-industry-report-191882>

Governor's Council on Workforce and Economic Development. (2006). *Oklahoma's Health Care Industry Workforce: 2006 Report*. Retrieved April 15, 2010, from Governor's Council on Workforce and Economic Development: http://www.okcommerce.gov/Libraries/Documents/Health_Care_Industry_Analysis_Report_Part_1_0206061888.pdf

Guttmacher Institute. (2009-2010). *Contraceptive Needs and Services, 2006*. Retrieved 05 21, 2010, from Guttmacher Institute: www.guttmacher.org/pubs/win/index.html

Harachi, T., Catalano, R., & Hawkins, J. (1999). United States. In Y. M.-T. P. Smith (Ed.), *The Nature of School Bullying: A Cross-National Perspective*. London and New York: Routledge.

Healy, A. J., Malone, F. D., Sullivan, L. M., & Porter, T. F. (2006). Early Access to Prenatal Care: Implications for Racial Disparity in Perinatal Mortality. *Obstetrics and Gynecology* , 625-663.

Heron, M., Hoyert, D. L., Murphy, S. L., Xu, J. Q., Kochanek, K. D., & Tejada-Vera, B. (2009). *National Vital Statistics Reports. Deaths: Final data for 2006*. National Center for Health Statistics. Hyattsville, MD: National Center for Health Statistics.

Horwitz, S. M., Briggs-Gowan, M. J., Storfer-Isser, A., & Carter, A. S. (2007). Prevalence, Correlates, and Persistence of Maternal Depression. *Journal of Women's Health* , 16 (5), 678-691.

Interagency Coordinating Council for Early Childhood Intervention. (2009, January). *SoonerStart Annual Report 2008*. Retrieved June 2, 2010, from Oklahoma Department of Human Services: www.okkids.org/ICC/documents/2008SoonerStart_AnnualReport.pdf

Kaiser Family Foundation. (2007). *Health Coverage and the Uninsured*. Retrieved April 13, 2010, from Kaiser Family Foundation: Kaiser Family Foundation

Kaiser Family Foundation. (2008). *Oklahoma: Estimated Underserved Population Living in Primary Care Health Professional Shortage Areas (HPSAs), as of September, 2008*. Retrieved May 10, 2010, from Kaiser Family Foundation: <http://www.statehealthfacts.org/profileind.jsp?cmprgn=1&cat=8&rgn=38&ind=682&sub=156>

Kitagawa, E. M. (1955). Components of difference between two rates. *J. Am. Stat. Assoc.* , 50, 1168-1194.

Krueger, P., & Scholl, T. (2000). Adequacy of prenatal care and pregnancy outcome. *Journal of American Osteopathic Association* , 485-492.

Lewis, C. (2009). Dental care and children with special health care needs: a population-based perspective. *Academic Pediatrics* , 9, 420-426.

March of Dimes. (2008, October). *Physical and Emotional Abuse During Pregnancy*. Retrieved 05 21, 2010, from March of Dimes: http://www.marchofdimes.com/pnhec/159_528.asp

March of Dimes. (2010, February). *Preconception Risk Reduction: Folic Acid*. Retrieved May 5, 2010, from March of Dimes: http://www.marchofdimes.com/professionals/19695_1151.asp

McCollom, M. (2009, November and December). Oklahoma Areawide Services Information System (OASIS) Coordinator. (M. K. Abai, Interviewer)

Miller, J. W., Naimi, T. S., Brewer, R. D., & Jones, S. E. (2006). Binge drinking and associated health risk behaviors among high school students. *Pediatrics* , 119, 76-85.

Morton, S., Spicer, R., Korn, A., Thomas, S., & Jones, P. (2007, May). *The Safe Kids U.S. Summer Safety Ranking Report*. Retrieved 10 November, 2009, from Safe Kids Worldwide: <http://www.safekids.org/assets/docs/ourwork/research/research-report-safe-kids-week-2007.pdf>

National Center for Health Statistics (NCHS). (2009). *National Health and Nutrition Examination Survey Data*. Centers for Disease Control and Prevention (CDC). Hyattsville, MD: U.S. Department of Health and Human Services.

National Center for Health Statistics. (2009). *Births: Final data for 2006*. Retrieved January 17, 2010, from National Vital Statistics Reports:
http://www.cdc.gov/nchs/data/nvsr/nvsr57/nvsr57_07.pdf

National Coalition Against Domestic Violence. (2007, July). *Domestic Violence Fact Sheet*. Retrieved January 20, 2010, from National Coalition Against Domestic Violence:
[http://www.ncadv.org/files/DomesticViolenceFactSheet\(National\).pdf](http://www.ncadv.org/files/DomesticViolenceFactSheet(National).pdf)

National Highway Traffic Safety Administration. (2006). *Traffic Safety Facts Research Note 2005: Misuse of Child Restraints: Results of a Workshop to Review Field Data Results*. Retrieved January 15, 2010, from Department of Transportation (U.S.):
http://www.nhtsa.dot.gov/people/injury/research/TSF_MisuseChildRestraints/images/809851.pdf

Newacheck, P. W., McManus, M., Fox, H. B., Hung, Y., & Halfon, N. (2000). Access to health care for children with special health care needs. *Pediatrics* , 105, 760-766.

NP Yost, et al. (2005). A prospective observational study of domestic violence during pregnancy. *Obstetrics & Gynecology* , 61-65.

Offenbacher, S., Boggess, K. A., Murtha, A. P., Jared, H. L., Lieff, S., McKaig, R. G., et al. (2006). Progressive periodontal disease and risk of very preterm delivery. *Obstetrics and Gynecology* , 107 (1), 29-36.

Oklahoma Child Death Review Board. (2009). *Oklahoma Child Death Review Board 2008 Annual Report*. Retrieved December 10, 2009, from <http://okcdrb.ouhsc.edu/>

Oklahoma Dental Association. (2009, August). *Governor's Task Force on Children and Oral Health- Final Report*. Retrieved February 13, 2010, from Oklahoma Board of Dentistry:
<http://www.dentist.state.ok.us/taskforce.htm>

Oklahoma Department of Human Services. (2010, February). *Monthly Statistical Bulletin- February 2010*. Retrieved March 22, 2010, from Oklahoma Department of Human Services:
<http://www.okdhs.org/library/stats/sb/default.htm>

Oklahoma Department of Human Services. (2009). *OKDHS 2009 Annual Report: We are Oklahoma*. Retrieved December 22, 2010, from Oklahoma Department of Human Services:
http://okdhs.org/NR/rdonlyres/22988CC7-06E6-42C7-AD0D-ED2B769B8BF8/0/2009AnnualReport_oprs_10012009.pdf

Oklahoma Department of Mental Health and Substance Abuse Services. (2008). *State of the State Children's Behavioral Health in Oklahoma*. Oklahoma City, OK: Oklahoma Department of Mental Health and Substance Abuse Services.

Oklahoma Governor's and Attorney General's Blue Ribbon Task Force: Mental Health, Substance Abuse and Domestic Violence. (2006, 02). *Task Force Recommendations*. Retrieved 05 21, 2010, from Oklahoma State Department of Mental Health and Substance Abuse: <http://www.odmhsas.org/web%20page%20publications/BR.pdf>

Oklahoma Health Care Workforce Center. (2009, April). *Trends in Oklahoma Hospital Professions Supply, Vacancies, Turnover & Educational Capacity Expansion*. Retrieved May 2010, from Oklahoma Health Care Workforce Center: <http://www.okhealthcareworkforce.com/documents/NewDataTrends04.20.09.pdf>

Oklahoma Health Improvement Plan. (2010-2014). *Oklahoma Health Improvement Plan*. Retrieved March 22, 2010, from <http://www.ok.gov/health/documents/OHIP-viewing.pdf>

Oklahoma Hospital Association. (2009, February). *Oklahoma Hospitals 101, A Resource Guide for Elected Officials, February 2009*. Retrieved March 15, 2010, from Oklahoma Hospital Association: www.okoha.com

Oklahoma State Bureau of Investigation. (2008). *State of Oklahoma Uniform Crime Report Annual Report January-December 2008*.

Oklahoma State Department of Commerce. (2008). *Data and Research*. Retrieved March 15, 2010, from Oklahoma State Department of Commerce: <http://www.okcommerce.gov/Data-And-Research>

Oklahoma State Department of Health Center for Health Statistics, Vital Records Division. (2009). *Behavioral Risk Factor Surveillance Systems (BRFSS) Data*. Retrieved 05 2010, from OK2SHARE: <http://www.ok.gov/health/pub/wrapper/ok2share.html>

Oklahoma State Department of Health. (2009). *Oklahoma Central Cancer Registry*. Retrieved February 12, 2010, from OK2SHARE On-line Database: <http://www.ok.gov/health/pub/wrapper/ok2share.html>

Oklahoma State University Center for Rural Health. (2008). *State of the State's Rural Health, Workforce Issues: Physicians & Hospitals*. Retrieved April 28, 2010, from Oklahoma State University Center for Rural Health: <http://www.healthsciences.okstate.edu/ruralhealth/docs/SOSRH%20-%202008%20Edition.pdf>

Peoples-Sheps, M. D. (2005). Planning Maternal and Child Health Programs. In J. B. Kotch (Ed.), *Maternal and Child Health: Programs, Problems, and Policy in Public Health* (pp. 535-582). Sudbury, Massachusetts: Jones and Bartlett.

PRAMS Working Group. (2005). *Adolescent Pregnancy*. Oklahoma City: Oklahoma State Department of Health.

PRAMS Working Group. (2005). *Breastfeeding Part II: Duration*. Oklahoma City: Oklahoma State Department of Health.

PRAMS Working Group. (2007). *Infant Safe Sleep in Oklahoma*. Oklahoma City: Oklahoma State Department of Health.

Pratt, L. A., & Brody, D. J. (2008, September). *Depression in the United States Household Population, 2005-2006*. *NCHS Data Brief, No. 7*. Retrieved June 01, 2010, from National Center for Health Statistics: <http://www.cdc.gov/nchs/data/databriefs/db07.htm>

Risch, E., Wagener, T., Kelley, A., Shropshire, D., & Gillaspy, S. (2009). *Poster entitled Child Welfare Caseworker and Resource Parent Perceptions and Barriers to Accessing Mental Health Services for children in Foster Care*. Oklahoma City: DHS.

Say, L., Souza, J. P., & Pattinson, R. (2009). WHO working group on Maternal Mortality and Morbidity classifications. Maternal near miss – towards a standard tool for monitoring quality of maternal health care. *Best Practice and Research: Clinical Obstetrics and Gynaecology*, 23 (3), 287-96.

Shropshire, D., & Gillaspy, S. (2009). *Presentation entitled Fostering Hope for Health Care for Foster Kids*. Oklahoma City: Oklahoma Department of Human Services.

Substance Abuse and Mental Health Services Administration. (2008). *National Survey on Drug Use and Health, 2005 and 2006*. Retrieved January 12, 2010, from Substance Abuse and Mental Health Services Administration, Office of Applied Studies: <http://www.oas.samhsa.gov/>

Substance Abuse and Mental Health Services Administration. (2009). *Results from the 2008 National Survey on Drug Use and Health: National Findings*. Rockville, MD.: Office of Applied Studies NSDUH Series H-36, HHS Publication No. SMA 09-4434.

The American College of Obstetrics and Gynecology (ACOG). (2002). *Antepartum Record Form E. Version 5*. . Washington DC : ACOG .

The Child and Adolescent Health Measurement Initiative. (2003, 2007). *Data Resource Center*. Retrieved January 28, 2010, from National Survey Children's Health (NSCH): <http://www.nschdata.org/Content/Default.aspx>

The Child and Adolescent Health Measurement Initiative (CAHMI). (2005-2006). *Data Resource Center*. Retrieved January 28, 2010, from National Survey of Children with Special Health Care Needs: <http://www.cshcndata.org/Content/Default.aspx>

The PEW Center on the States. (2010, February 23). *The Cost of Delay: State Factsheets*. Retrieved April 27, 2010, from The PEW Center on the States: http://www.pewcenteronthestates.org/uploadedFiles/wwwpewcenteronthestatesorg/Initiatives/Childrens_Dental_Health/011_10_DENT%20Cost%20of%20Delay%20Factsheets_Oklahoma.pdf

U.S. Department of Education. (2006–2007). *NCES Common Core of Data State Dropout and Completion Data File, Version 1a*. Washington, D.C.: National Center for Education Statistics, Common Core of Data (CCD).

U.S. Department of Health and Human Services. (2000). *Healthy People 2010. 2nd ed. With Understanding and Improving Health and Objectives for Improving Health. 2 vols.* Washington, DC: U.S. Government Printing Office.

U.S. Department of Health and Human Services. (2006). *The Health Consequences of Involuntary Exposure to Tobacco Smoke: A Report of the Surgeon General.* . U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics.

U.S. Department of Justice. (2000). *Extent, Nature, and Consequences of Intimate Partner Violence.* Washington, DC: U.S. Department of Justice.

Van Cleave, J., & Davis, M. (2008). Preventive care utilization among children with and without special health care needs: associations with unmet need. *Academic Pediatrics* , pp. 305-311.

Vintzileos, A., Ananth, C., Smulian, J., & Scorza, W. E. (2002). Prenatal Care and Black–White Fetal Death Disparity in the United States. *Obstetrics and Gynecology* , 483-489.

Appendix A

Title V Needs Assessment Online
Survey



Oklahoma State Department of Health
Creating a State of Health



Title V Needs Assessment

Public input is needed for the development of a State Plan for Services for fiscal years 2010 through 2014 for the Maternal and Child Health Block Grant (Title V of the Social Security Act). The grant provides federal funds for the Maternal and Child Health program, whose primary goal is to improve the health status of pregnant women, mothers, infants, and children, including children with special health care needs. Funds from the block grant assure that these groups, particularly those with low income or with limited availability of services, have access to quality maternal and child health care services.

Answer questions to the best of your ability, if you do not know or feel uncomfortable about a question, then skip to the next question.

1. Title V Needs Assessment Survey

1. What are your comments or suggestions regarding the health needs of pregnant women, mothers, and infants in Oklahoma? Please write your answer(s) in the space below.

2. What are your comments or suggestions regarding the health needs of children, and adolescents in Oklahoma? Please write your answer(s) in the space below.

3. What are your comments or suggestions regarding the health needs of children, and youth with special health care needs in Oklahoma? Please write your answer(s) in the space below.

Title V Needs Assessment

2. Prioritizing the Health Needs of Oklahoma's Families

1. In your opinion, how would you prioritize the following needs of Oklahoma's pregnant women, mothers, and infants?

Of the needs listed below, please list in order of importance, with 1 highest priority and 7 lowest priority, the following topics. If you have additional topics please explain in the space provided below "other".

- Breastfeeding _____
- Newborn screening and follow-up
for newborns Hearing screening _____
- Prenatal care in first Trimester _____
- Tobacco use before, during,
and after pregnancy _____
- Unintended pregnancies _____
- Very low birth weight babies
Delivered at high risk hospitals _____
- Other (please specify): _____

2. In your opinion, how would you prioritize the needs of Oklahoma's children and adolescents?

Of the needs listed below, please list in order of importance, with 1 highest priority and 10 lowest priority, the following topics. If you have additional topics please explain in the space provided below "other".

- Dental Health _____
- Children who are overweight
or very overweight (BMIs at
or above the 85th percentile) _____
- Suicide prevention _____
- Tobacco Use _____
- Children without health insurance _____
- Alcohol use among adolescents _____
- Overweight and/or obese
adolescents _____
- Immunizations _____
- Motor vehicle injuries and deaths _____
- Teen pregnancy prevention _____
- Other (please specify): _____

Title V Needs Assessment

2. Prioritizing the Health Needs of Oklahoma's Families continued...

3. In your opinion, how would you prioritize the needs of Oklahoma's children and youth with special health care needs?

Of the needs listed below, please list in order of importance, with 1 highest priority and 7 lowest priority, the following topics. If you have additional topics please explain in the space provided below "other".

- Community-based services organized so that families can easily access them _____
- Respite Care _____
- Families as partners at all levels of care and satisfied with services _____
- Receiving coordinated, comprehensive, ongoing care within a medical home _____
- Dental Health _____
- Adequate health insurance _____
- Transition to adulthood _____
- Other (please specify): _____

(Please turn over, survey is continued on the next page)

Title V Needs Assessment

3. Helpful Information About You

1. What is your primary occupation? (Choose all that apply.)

- Faith-based organization _____
- Health care clinician _____
- Educator (or related field) _____
- Concerned parent _____
- Local or state government _____
- Social services provider _____
- Community-based organization _____
- Public Health worker _____
- Clerical/Support Staff _____
- Other (please specify): _____

2. What is your zip code? _____

Please provide your email address if you wish to be contacted again for follow-up about your responses.

Email address: _____

3. What is your race and ethnicity? (Choose all that apply.)

- White _____
- African American _____
- Native American _____
- Hispanic _____
- Other (please specify): _____

4. How many years have you lived in Oklahoma? _____

Thank you for your participation with this survey.

Please return in the postage paid envelope provided.

Children with Special Health Care Needs— A Survey to Determine the State’s Priorities

Demographic information: please complete following information and check the boxes that best describe you. An asterisk * indicates that a response is required for that item. You cannot continue taking the survey without completing the item with the asterisk.

Section 1.

- 1) *How are you affiliated with children with special health care needs (CSHCN)?
[mark only ONE option]
 I am a family member or caregiver. [continue on to 2])
 I am a provider. [skip the rest of this section and go on ahead to Section 2, question 5)]
 I am both a family member and a provider. [continue on to 2)]

- 2) *How many CSHCN are in your family or under your care?
 1 2 3 4 5 Other _____

- 3) *Complete the following information for each CSHCN in your family or under your care. If you are a provider only complete information for 5 CSHCN.

	Age (Yrs)	Gender	Ethnicity	Race
CSHCN #1	_____	<input type="checkbox"/> Male <input type="checkbox"/> Female	<input type="checkbox"/> Hispanic/ Latino <input type="checkbox"/> Other	<input type="checkbox"/> Caucasian/White <input type="checkbox"/> African American/Black <input type="checkbox"/> Native American/Alaska Native <input type="checkbox"/> Hawaiian/Pacific Islander <input type="checkbox"/> Asian <input type="checkbox"/> Multi-racial <input type="checkbox"/> Other
CSHCN #2	_____	<input type="checkbox"/> Male <input type="checkbox"/> Female	<input type="checkbox"/> Hispanic/ Latino <input type="checkbox"/> Other	<input type="checkbox"/> Caucasian/White <input type="checkbox"/> African American/Black <input type="checkbox"/> Native American/Alaska Native <input type="checkbox"/> Hawaiian/Pacific Islander <input type="checkbox"/> Asian <input type="checkbox"/> Multi-racial <input type="checkbox"/> Other
CSHCN #3	_____	<input type="checkbox"/> Male <input type="checkbox"/> Female	<input type="checkbox"/> Hispanic/ Latino <input type="checkbox"/> Other	<input type="checkbox"/> Caucasian/White <input type="checkbox"/> African American/Black <input type="checkbox"/> Native American/Alaska Native <input type="checkbox"/> Hawaiian/Pacific Islander <input type="checkbox"/> Asian <input type="checkbox"/> Multi-racial <input type="checkbox"/> Other

Children with Special Health Care Needs— A Survey to Determine the State's Priorities

4) What is your family's annual income?

- | | | |
|--|--|--|
| <input type="checkbox"/> Under \$20,000 | <input type="checkbox"/> \$20,000 - \$29,999 | <input type="checkbox"/> \$30,000-\$39,999 |
| <input type="checkbox"/> \$40,000 - \$49,999 | <input type="checkbox"/> \$50,000 - \$59,999 | <input type="checkbox"/> \$60,000 - \$69,999 |
| <input type="checkbox"/> \$70,000 - \$79,999 | <input type="checkbox"/> \$80,000 and over | |

Section 2. Which of the issues below represents an area of unmet need for CSHCN and their families in Oklahoma?

5) *Choose the top three needs that the state should address for CSHCN. Please read the description of each issue carefully.

- Access to health care**
A need for improved access to dental, medical, and/or behavioral health care for CSHCN.

 ___ - Dental

 ___ - Medical

 ___ - Mental/behavioral

- Access to service information**
A need for more knowledge among the public, providers, and county health departments about what services and programs are available to CSHCN and their families.

- Transition to adulthood**
The need to help youth develop their own individual skills and abilities so they can lead healthy, safe, independent and productive lives when they become adults.

- Respite care**
A need for temporary relief for caregivers from the daily responsibility of caring for a child with special health care needs.

- Foster home**
A need for more foster homes that care for children with special health care needs.

- Daycare for children**
A need for safe, reliable child care while parents are out at work.

- Family support**
A need for more support for families in the form of parenting classes, family counseling, and mentoring programs.

 ___ - Mentoring programs

 ___ - Family counseling

 ___ - Parenting classes

Children with Special Health Care Needs— A Survey to Determine the State's Priorities

- Accessible community based services
A need for services in the community that address the needs of CSHCN.
- Care within a medical home
A need for a central source of ongoing routine health care in the community where providers and families work as partners to meet the needs of children and families.
- Coordination of non-medical services
A need for persons involved in the care for CSHCN to coordinate the provision of non-medical services, e.g. school, child care, etc.

Section 3. Indicate the barriers to meeting the needs you identified in the previous section.

6) *Choose the three most important barriers for each issue.

Access to Health Care

- cost of care too high
- hours/days health care is available is limited
- no insurance
- provider is not knowledgeable about child's medical condition
- a lack of providers in the community
- service not accessible due to a lack of transportation
- stigma of going to mental/behavioral health providers
- other, please explain _____

Access to service information

- information is hard to find
- information is not in the language that child and/or family members can understand
- information limited due to a lack of transportation to provider
- stigma of asking for help
- other, please explain _____

Children with Special Health Care Needs— A Survey to Determine the State's Priorities

Transition to adulthood

- lack of community resources
- difficulty in accessing resources
- difficulty in developing IEP/IFSP goals
- professionals focus on disability rather than child's abilities
- school districts do not have the money to provide services
- transition services begin too late (age 16)
- cannot find places for child(ren) to work
- other, please explain _____

Respite care

- cost of services too high
- CSHCN not eligible for this service
- waiting list is too long
- no providers in the community
- other, please explain _____

Foster home

- lack of access to medical records
- child(ren) lacks self-advocacy skills
- no foster homes in the community
- other, please explain _____

Daycare for children

- hours/days available are limited
- cost of services too high
- untrained providers
- caregivers prefer that relatives provide child care
- providers are not willing to take child
- lack of quality daycare in the area
- other, please explain _____

Children with Special Health Care Needs— A Survey to Determine the State's Priorities

Family support services

- service invades privacy of child and/or family
- limited family support services are available in the community
- do not know where to get family support services
- do not know what family support services are available
- waiting list is too long
- cost of services too high
- other, please explain _____

Accessible community based services

- no community based services available in the county
- do not know what services are available in the community
- do not know what child(ren) needs
- do not know how to find out what is available
- other, please explain _____

Care within a medical home

- hard to make appointments with providers
- providers do not communicate with each other
- only one or two providers in the community
- provider does not treat caregiver as a team member
- hard to communicate with provider
- other, please explain _____

Coordination of non-medical services

- lack of communication between providers
- do not have time to communicate with all service providers
- do not want information about child or family to spread
- other, please explain _____

Children with Special Health Care Needs—
A Survey to Determine the State's Priorities

Section 4. Thank you for completing the survey! If you can think of any other unmet needs that were not mentioned in the survey, please discuss and identify the barriers to meeting the need below.

Appendix B

Title V Needs Assessment Online Results Summary

Title V Needs Assessment Survey Results

Public input was sought for the development of a State Plan for Services for fiscal years 2010 through 2014 for the Maternal and Child Health Block Grant (Title V of the Social Security Act). An internet survey was created asking respondents to provide input for the health needs of pregnant women, mothers, and infants; children and adolescents; and, children with special health care needs in Oklahoma. The survey also asked respondents to rank the current Title V priorities in order of importance. Responses were solicited by email invitation during April and May 2009. Invitations were directed at specific individuals and groups associated within each target population, who in turn, were encouraged to solicit additional responses from others they felt would provide further insight into priorities for health services in Oklahoma. In addition to the online survey, hardcopies (both in English and Spanish) were made available along with a postage paid return envelope. There were 700 respondents to this survey, mostly white (84.9%) followed by Native American (13.5%), African American (5.6%), and Asian (1.0%). Ethnicities among respondents were reported as follows: Non-Hispanic (97.4%) and Hispanic (2.6%). The mean years of residence in Oklahoma were 35.9 years. The respondents' primary occupation, more than one choice could be checked, were listed as follows: local or state government employee (36.1%), public health worker (25.3%), social services provider (22.1%), concerned parent (21.8%), health care clinician (14.5%), educator (or related field) (13.0%), clerical/support staff (11.7%), community-based organization (7.9%), and faith-based organization (1.9%).

Overarching themes among all three MCH target populations related to the priorities of access and education. There were a few subtle differences in relation to education, which are discussed among the different populations.

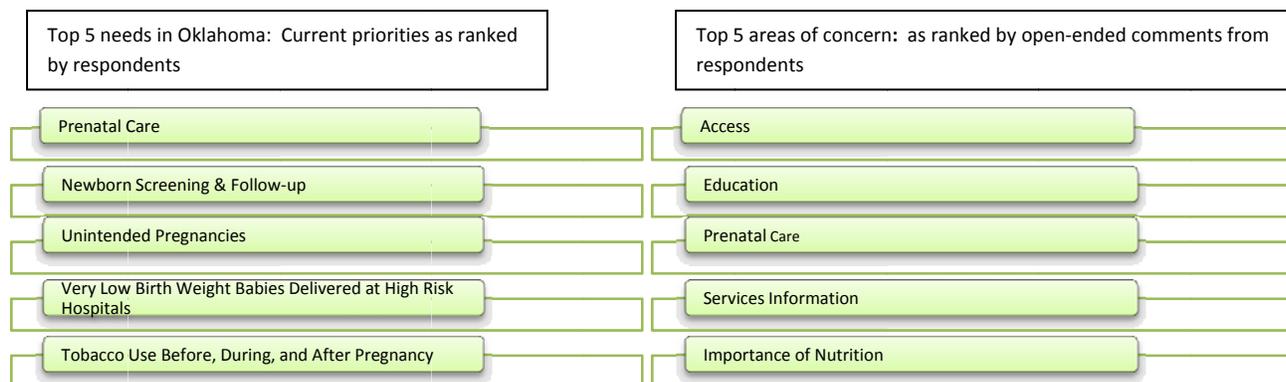
Access:

- Lack of insurance, services, providers, and specialties in the rural areas of the state
- Difficulties with long wait times, hours of operation, paperwork, applications, and processing
- Lowering and making more consistent qualifying events which would allow for easier, more agreeable ways to obtain insurance and services
- Problems with obtaining reliable and consistent transportation to and from facilities and services

Education:

- Informing the public and healthcare providers on services offered
- Parenting and child rearing

Pregnant Women, Mothers, and Infants



Education:

- Breastfeeding information and knowledge
- Sex education and birth control including abstinence

Prenatal Care:

- Importance of educating and providing target population about the benefits of early, good, and consistent prenatal care

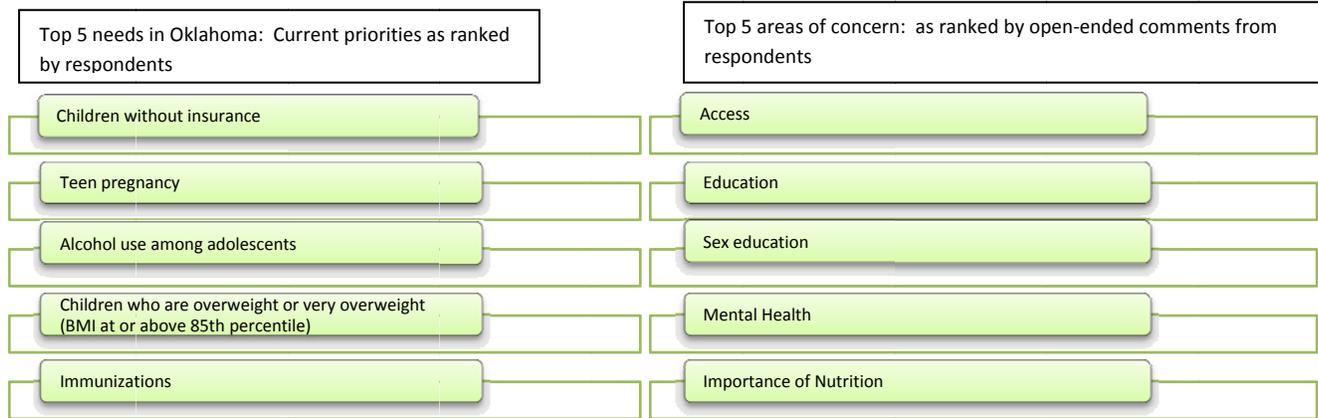
Services Information:

- Frustration with lack of knowledge by providers and the county health departments about what services and programs are available
- How public can qualify for services
- Where and how to access and coordinate services

Importance of Nutrition:

- Importance of education, teaching, and training the population about the benefits of nutritious meals
- Concern for those children and adolescents that are not getting the proper nutrition
- Concern for the increase in obesity and lack of fitness among target population

Children and Adolescents



Education:

- Emphasize the importance of completing education, aspiring to higher education
- Providing the proper training to both public and private sectors about population concerns such as, health, nutrition, fitness, mental health, dental, and vision.
- Providing correct and accurate information regarding healthy relationships, and substance and alcohol abuse along with their consequences

Sex Education:

- Concerned with the amount, thoroughness, and accuracy of information provided including STD's
- Process by which our children and adolescents receive their education on the subject of health and human sexuality and pregnancy prevention

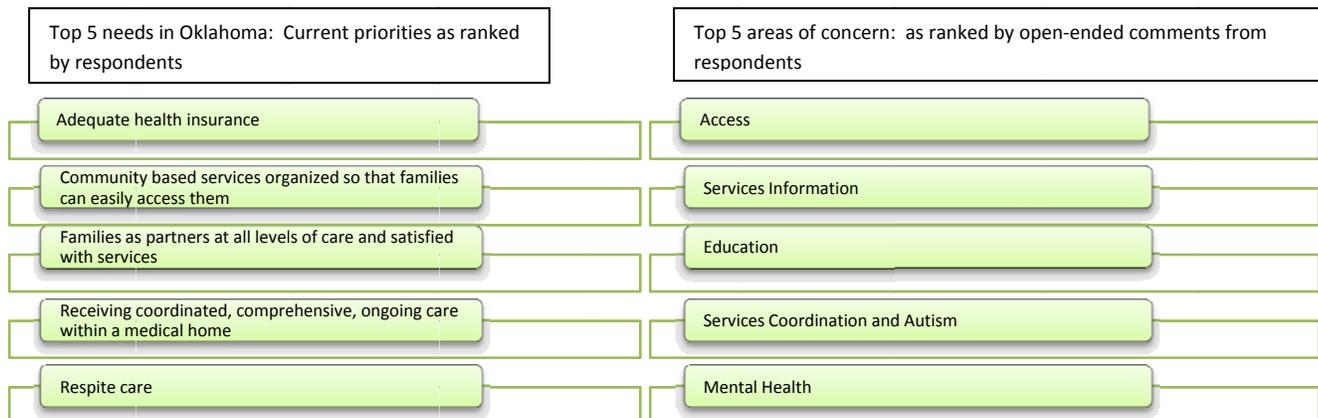
Mental and Behavioral Health:

- Lack of support, services, and qualified professionals available to them
- Confidentiality was also mentioned as a possible obstacle to these services

Importance of Nutrition:

- Importance of educating, teaching, and training the population about the benefits of nutritious meals
- Concern for those children and adolescents that are not getting the proper nutrition
- Concern for the increase in obesity and lack of fitness among target population

Children and Youth with Special Health Care Needs



Services Information:

- Frustration with lack of knowledge by providers and the county health departments about what services and programs are available and how to access and qualify for those services

Education:

- Informing and training the public, teachers, parents, and healthcare professionals about their children's disabilities
- How to lessen parents' frustrations while improving their capacity to better enhance their capabilities to improve their family members' quality of life

Services Coordination and Autism (tie):

- Request finding ways to streamline, organize, and track all aspects of the complicated services that are required
- Increasing access to insurance, therapies, equipment, specialists, and services

Mental and Behavioral Health:

- Access to support and qualified professionals that assist in learning behaviors on how best to cope with disabilities
- Confidentiality was also mentioned as a possible obstacle to these services

Appendix C

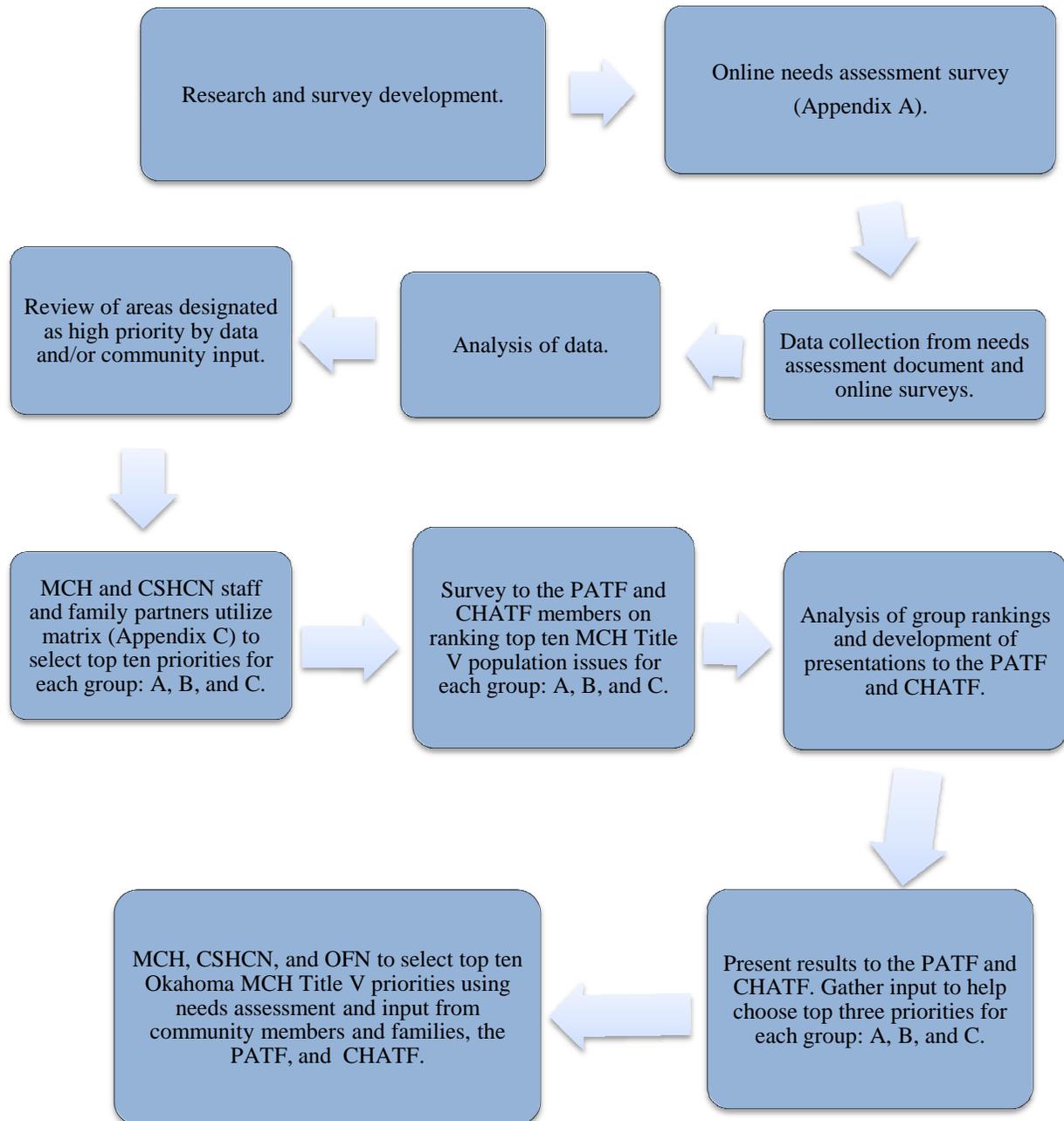
Perinatal and Child Health Priority Matrix

Appendix D

Process for Soliciting Community and
Stakeholder Input for the
2011-2015 Oklahoma Title V Priorities

Flowchart

Process for Soliciting Community and Stakeholder Input for the 2011-2015 Oklahoma Title V Priorities



Appendix E

Acronyms

Acronyms

1GHS	First Grade Health Survey
AAP	The American Academy of Pediatrics
ACIP	Committee on Immunization Practices
ACMG	American College of Medical Genetics
ACOG	American College of Obstetrics and Gynecology
ADHD	Attention-Deficit/- Hyperactivity Disorder
AGI	Alan Guttmacher Institute
AIDS	Acquired Immune Deficiency Syndrome
AMCHP	Association of Maternal and Child Health Programs
BMI	Body Mass Index
BRFSS	Behavioral Risk Factor Surveillance System
CAH	Congenital Adrenal Hyperplasia
CAHMI	Child and Adolescent Health Measurement Initiative
CDC	Center for Disease Control and Prevention
CHATF	Child Health Advisory Task Force
CHD	County Health Department
CF	Cystic Fibrosis
CNA	Community Needs Assessment
CSHCN	Children with Special Health Care Needs
CY	Calendar Year
DASH	Division of Adolescent and School Health
DCP	Disabled Child Program
DDSD	Developmental Disabilities Services Division
DTaP	Diphtheria, Tetanus, and Pertussis
ECCS	Early Childhood Comprehensive Systems
ESI	Employer Sponsored Insurance
FIMR	Fetal Infant Mortality Review
FFY	Federal Fiscal Year
FPL	Federal Poverty Level
FQHC	Federally Qualified Health Center
GDP	Gross Domestic Product
HepB	Hepatitis B
Hib	Haemophilus Influenzae type B vaccine
HIV	Human Immunodeficiency Virus
HMO	Health Maintenance Organization
HPSA	Health Provider Shortage Areas
HPV	Human Papillomavirus

HRSA	Health Resources Services Administration
ICD-10	International Classification of Diseases, Tenth Revision
IDEA	Individuals with Disabilities Education Act
IEP	Individualized Education Plans
IMR	Infant Mortality Rate
IP	Individual Plan
IPV	Intimate Partner Violence
LBW	Low Birth Weight
LEP	Limited English Proficiency
LTFU	Long-term Follow-up
MCAD	Medium chain acyl CoA dehydrogenase deficiency
MCH	Maternal and Child Health
MCHB	Maternal and Child Health Bureau
MCV	Meningococcal Conjugate Vaccine
MMR	Measles, Mumps and Rubella
MMR	Maternal Mortality Rate
MMR	Maternal Mortality Review Committee
MSA	Metropolitan Statistical Areas
NCHS	National Center for Health Statistics
NHANES	National Health and Nutrition Examination Survey
NHIS	National Health Interview Survey
NICHQ	National Initiative for Children's Health Care Quality
NIS	National Immunization Survey
NSCH	National Survey of Children's Health
NS-CSHCN	National Survey of Children with Special Health Care Needs
NSP	Newborn Screening Program
OASIS	Oklahoma Areawide Services Information System
OBB	Operation Buzzer Beater
OCAP	Office of Child Abuse Prevention
ODMHSAS	Oklahoma Department of Mental Health and Substance Abuse
OFN	Oklahoma Family Network
OFPP	Oklahoma Family Planning Program
OHCA	Oklahoma Health Care Authority
OHIP	Oklahoma Health Improvement Plan
OICA	Oklahoma Institute of Child Advocacy
OK	Oklahoma
OK PRAMS	Oklahoma Pregnancy Risk Assessment Monitoring System
OKDHS	Oklahoma Department of Human Services
OMB	Office of Management and Budget
OPHA	Oklahoma Public Health Association
ORRN	Oklahoma Respite Resources Network

OSDE	Oklahoma State Department of Education
OSDH	Oklahoma State Department of Health
OSIIS	Oklahoma State Immunization Information System
PATF	Perinatal Advisory Task Force
PCMH	Patient-Centered Medical Home
PE	Physical Education
PHOCIS	Public Health Oklahoma Client Information System
PID	Pelvic Inflammatory Disease
PKU	Phenylketonuria
PLICO	Physician Liability Insurance Company
PNC	Prenatal Care
PPD	Postpartum Depression
PPOR	Perinatal Periods of Risk
PRAMS	Pregnancy Risk Assessment Monitoring System
PROM	Premature rupture of membranes
PTSD	Post Traumatic Stress Disorder
RIF	Reduction in Force
SAMHSA	Substance Abuse and Mental Health Services Administration
SCAD	Short-chain acyl-coenzyme A (CoA) dehydrogenase deficiency
SCHIP	State Children's Health Insurance Program
SES	Special Education Services
SFY	State Fiscal Year
SHL	Schools for Healthy Lifestyles
SIDS	Sudden Infant Death Syndrome
SGA	Small for Gestational Age
SLAITS	State and Local Area Integrated Telephone Survey
SMART	Selected Metropolitan/Micropolitan Area Risk Trends
Sooner	Sooner State Unified Children's Comprehensive Exemplary Services for
SUCCESS	Special Needs
SSDI	State Systems Development Initiative
SSI	Supplemental Security Income
STAT	Strategic Targeted Action Teams
STD	Sexually Transmitted Disease
STFU	Short-term Follow-up
TANF	Temporary Assistance for Needy Families
TBI	Traumatic Brain Injuries
TDaP	Tetanus, Diphtheria, and acellular Pertussis
TOTS	The Oklahoma Toddler Survey
TV	Television
U.S.	United States
VBAC	Vaginal Birth After Cesarean Section

VLBW	Very Low Birth Weight
VOBO	Voluntary Out Benefits Offer
WHO	The World Health Organization
WIC	Women, Infants, and Children Supplemental Nutrition Program
YRBS	Youth Risk Behavior Survey
YTS	Youth Tobacco Survey

Appendix F

Perinatal and Child Health Advisory
Task Forces PowerPoint Presentations

**2010 Title V Block Grant
Needs Assessment**

 OKLAHOMA STATE DEPARTMENT OF HEALTH · CREATING A STATE OF HEALTH · WWW.HEALTH.OK.GOV

Title V Block Grant

- The grant provides federal funds for the Maternal and Child Health program, whose primary goal is to improve the health status of pregnant women, mothers, infants, and children, including children with special health care needs
- Funds from the block grant assure that these groups, particularly those with low income or with limited availability of services, have access to quality maternal and child health care services

 OKLAHOMA STATE DEPARTMENT OF HEALTH · CREATING A STATE OF HEALTH · WWW.HEALTH.OK.GOV

Part A

**Pregnant Women, Mothers, and
Infants**

 OKLAHOMA STATE DEPARTMENT OF HEALTH · CREATING A STATE OF HEALTH · WWW.HEALTH.OK.GOV

Top Eight (in alphabetical order) Perinatal Reproductive Health Matrix Priority List 2010 Needs Assessment

1. Access to Care
2. Health Disparities
3. Infant Mortality
4. Infant Safe Sleep
5. Obesity
6. Preterm Birth
7. Tobacco
8. Unintended Pregnancy

 OKLAHOMA STATE DEPARTMENT OF HEALTH · CREATING A STATE OF HEALTH · WWW.HEALTH.OK.GOV

Data

 OKLAHOMA STATE DEPARTMENT OF HEALTH · CREATING A STATE OF HEALTH · WWW.HEALTH.OK.GOV

Access to Care

 OKLAHOMA STATE DEPARTMENT OF HEALTH · CREATING A STATE OF HEALTH · WWW.HEALTH.OK.GOV

Access

- Cost prohibitive
- Lack of transportation
- Lack of adequate and/or specialized care
- Too complex a system to easily navigate
- Lack of appropriate services

H OKLAHOMA STATE DEPARTMENT OF HEALTH · CREATING A STATE OF HEALTH · WWW.HEALTH.OK.GOV

Access

- More than one-fourth (26.7%) of women aged 18-44 needed a doctor during the previous year but the cost was prohibitive.
- Over one-fourth (26.8%) of women aged 18-44 did not have any health care coverage.

Data source: Behavioral Risk Factor Surveillance System (BRFSS), 2008

H OKLAHOMA STATE DEPARTMENT OF HEALTH · CREATING A STATE OF HEALTH · WWW.HEALTH.OK.GOV

Access

- 47.1% of women had non-Medicaid health insurance prior to their most recent pregnancy resulting in a live birth. This has declined since 2000, when 56.2% of women indicated insurance before pregnancy.
- American Indian/Alaskan Native (AI/AN) women were the least likely to have insurance prior to pregnancy (26.5%, compared to 42.7% of African American (AA) women and 50.8% of white women).
- African American women were more likely to report Medicaid prior to pregnancy than other women (22.3% vs. 8.9% white and 10.7% AI/AN).
- The number of women reporting Medicaid prior to pregnancy has not changed significantly since 2000.

Data source: Pregnancy Risk Assessment Monitoring System (PRAMS), 2007

H OKLAHOMA STATE DEPARTMENT OF HEALTH · CREATING A STATE OF HEALTH · WWW.HEALTH.OK.GOV

Reproductive Health

- The 2006 estimates for Oklahoma indicate that more than half (52.4%) of women age 13-44 are in need of contraceptive services and supplies, a 9.6% increase from 2002.
- Of those women in need of contraceptive services and supplies in 2006, more than half (54.7%, n = 221,210) are in need of publicly funded contraceptive services and supplies.
- The percent of women aged 13-44 in need of contraceptive services and supplies for whites and African Americans were 46.4% and 48.1%, respectively.
- More than half (50.4%) of women of Hispanic origin were in need of contraceptive services and supplies.

Data source: Guttmacher Institute, *Contraceptive Needs and Services 2006*, available for viewing at <http://www.guttmacher.org/pubs/wcr/index.html> accessed September 2009.

Prenatal Care

Percentage of Mothers Beginning Prenatal Care in the First Trimester, 2006

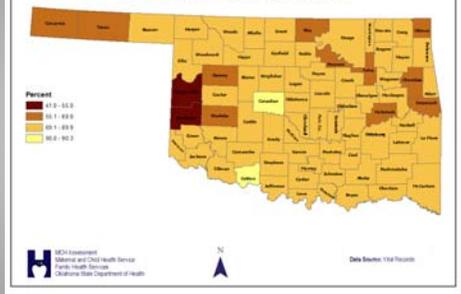
OK	US
75.6%	83.2%

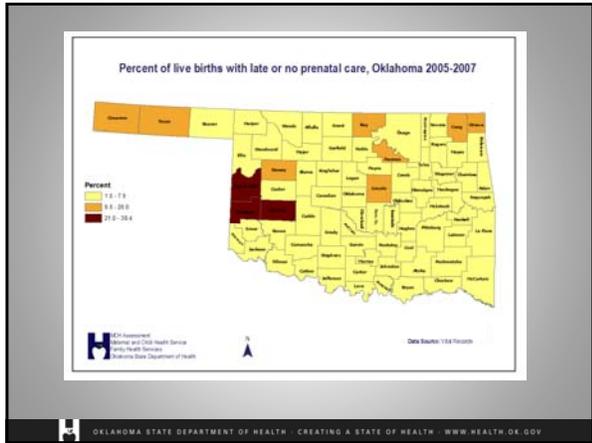
Percentage of Mothers Beginning Prenatal Care in the First Trimester by Race/Ethnicity, 2006

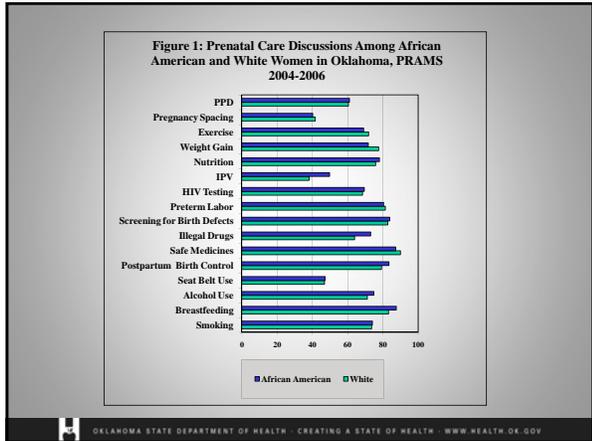
	OK	US
Non-Hispanic White	79.5%	88.1%
Non-Hispanic Black	69.7%	76.1%
Hispanic	64.5%	77.3%

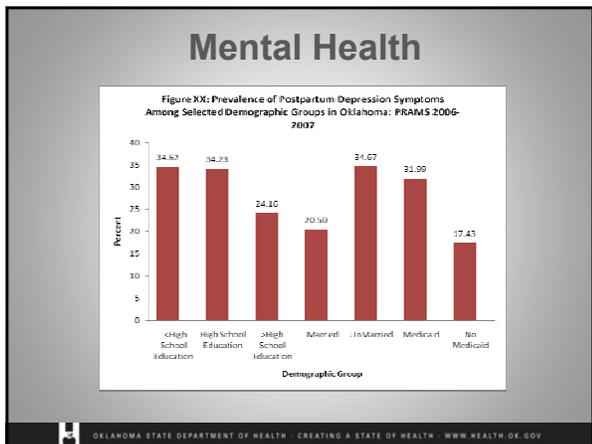
Data source: <http://www.okstatehealthfacts.org> The Henry J. Kaiser Family Foundation

Percent of live births whose prenatal care began in the first trimester, by county, 2005-2007









Oral Health

- Approximately 40% of women saw a dentist during the 12 months before pregnancy in Oklahoma. Due to the potential impact tooth decay and gum disease have on the health of the pregnancy, this number is far too low.
- No differences existed between racial groups, however Hispanic women were far less likely to have dental care prior to pregnancy than non-Hispanic women (16.4% vs. 41.9%).

Data source: Pregnancy Risk Assessment Monitoring System (PRAMS), 2006-2007



Oral Health

- Women over the age of 30 were more likely to have had a dental visit prior to pregnancy compared to women 20-29.
- Having a high school education or less was also associated with lack of dental care, only one in five women (21.1%) with a high school education and one in eight women (13.0%) with less than a high school education received a dental checkup or visit, compared to close to half of women with more than a high school education (42.6%).
- Marital status, Medicaid status during pregnancy, and parity also impact the woman's likelihood of getting dental care prior to pregnancy.

Data source: Pregnancy Risk Assessment Monitoring System (PRAMS), 2006-2007



Oral Health

Adults aged 18+ who have visited a dentist or dental clinic in the past year

- Number of dentists licensed by state: 2,097
- Number of dentists in the state: 1,801
- Number of dental hygienists in the state: 1,506
- Number of dental hygienists licensed by state: 1,767
- Number of counties in state: 77
- Number of counties without a dentist: 7
- Number of counties in state without an enrolled Medicaid dentist: 13

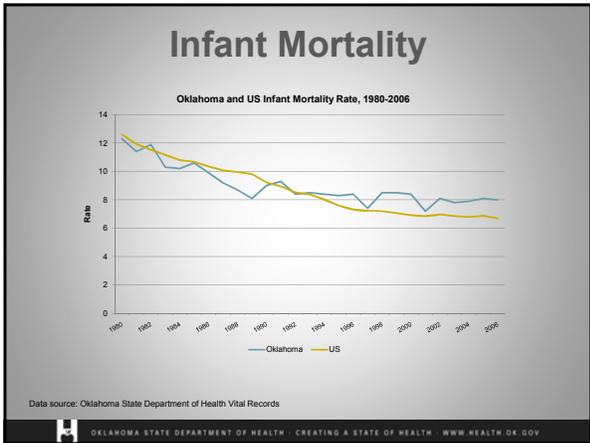
Data source: CDC National Oral Health Surveillance System, BRFSS, 2008



Infant Mortality

OKLAHOMA STATE DEPARTMENT OF HEALTH · CREATING A STATE OF HEALTH · WWW.HEALTH.OK.GOV





Top five related causes to infant mortality in Oklahoma

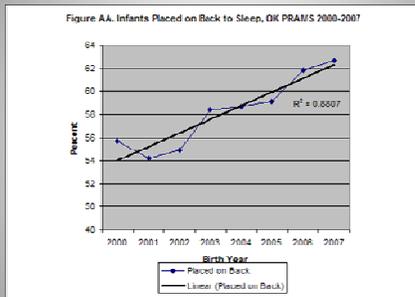
- Congenital malformations, deformations, and chromosomal abnormalities
- Disorders due to short gestation and low birth weight
- SIDS
- Accidents (unintentional injuries)
- Bacterial sepsis of newborn

OKLAHOMA STATE DEPARTMENT OF HEALTH · CREATING A STATE OF HEALTH · WWW.HEALTH.OK.GOV

Infant Safe Sleep

OKLAHOMA STATE DEPARTMENT OF HEALTH · CREATING A STATE OF HEALTH · WWW.HEALTH.OK.GOV

Infant Safe Sleep



OKLAHOMA STATE DEPARTMENT OF HEALTH · CREATING A STATE OF HEALTH · WWW.HEALTH.OK.GOV

Infant Safe Sleep

Unsafe Sleep Practices

A total of 78 deaths were reviewed related to unsafe sleeping practices

- 57 were ruled Unknown manner of death, with the pathologist stating unsafe sleep conditions might have contributed to the death.
- 15 deaths were classified as Natural (SIDS).
- 6 were accidental

Sleep position of infant

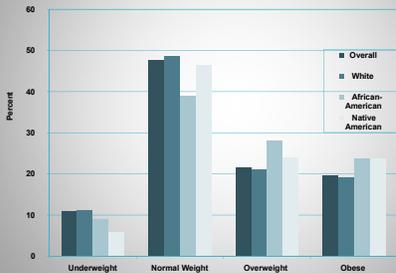
- 15 children were sleeping on their stomach
- 10 were sleeping on their backs
- 3 were sleeping on their side
- 39 of the children was unknown.

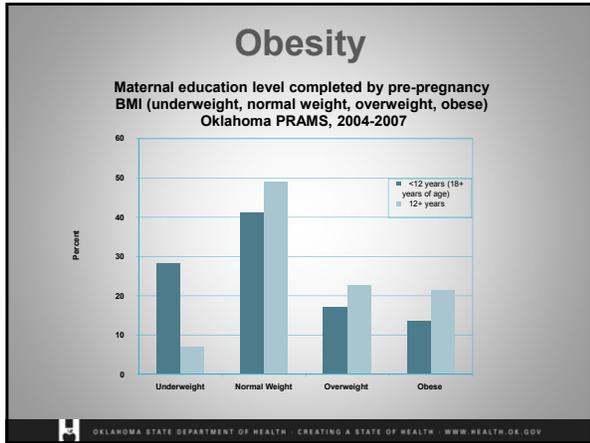
Data source: The Oklahoma Child Death Review Board 2008 Annual Report

Obesity

Obesity

Maternal race by pre-pregnancy BMI (Underweight, Normal Weight, Overweight, Obese) Oklahoma PRAMS, 2004-2007





Preterm Births

OKLAHOMA STATE DEPARTMENT OF HEALTH • CREATING A STATE OF HEALTH • WWW.HEALTH.OK.GOV

Preterm Births

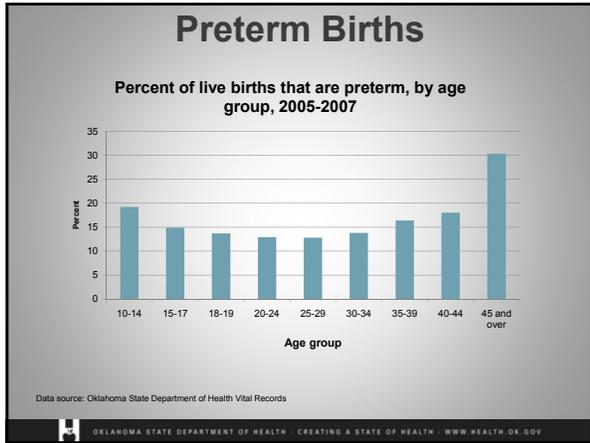
Infant mortality rates by gestation weeks and race/ethnicity, 2002-2006

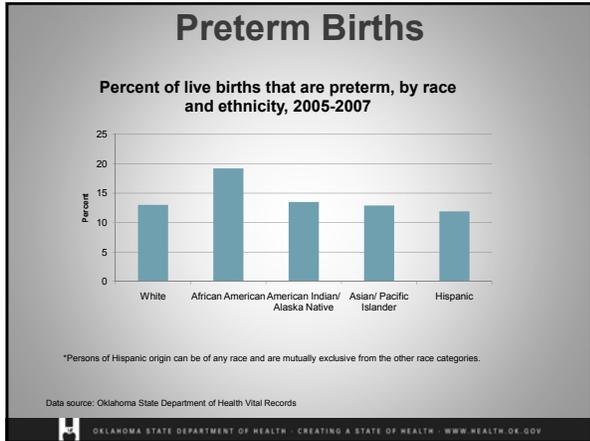
Gestation in Weeks	African American		American Indian	Asian/Pacific Islander	Hispanic ¹
	White	American	Indian	Islander	
< 32 (very preterm)	162.9	212.0	138.1	131.6	137.1
33-34 (moderate preterm)	23.3	23.1	15.0	25.3	10.6
34-36 (late preterm)	8.8	8.3	12.2	9.9	8.2
37+ (term plus)	3.8	4.1	4.4	2.2	2.5

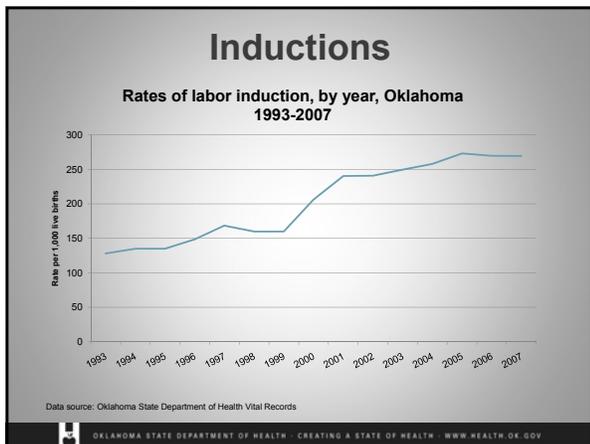
¹Persons of Hispanic origin can be of any race and are mutually exclusive from the other race categories.

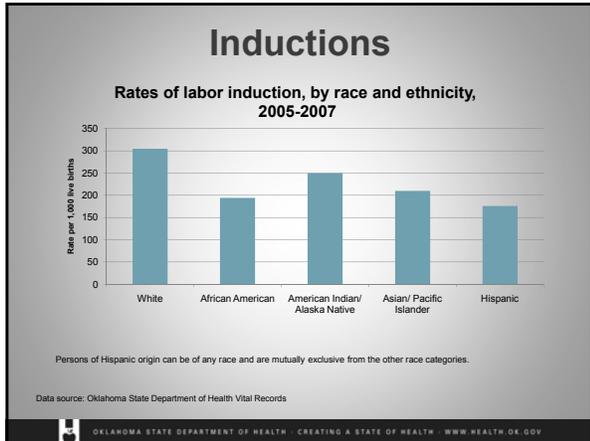
Data source: Oklahoma State Department of Health Vital Records

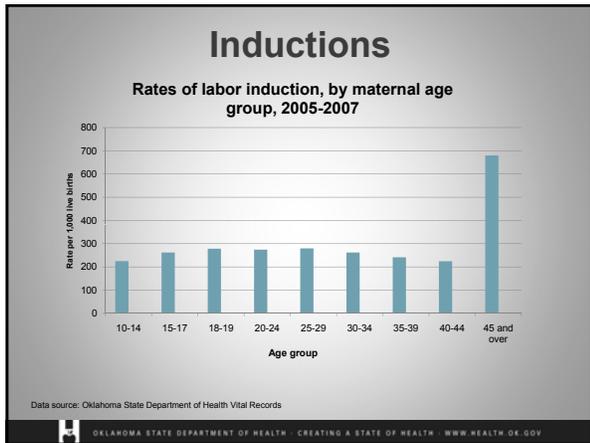
OKLAHOMA STATE DEPARTMENT OF HEALTH • CREATING A STATE OF HEALTH • WWW.HEALTH.OK.GOV

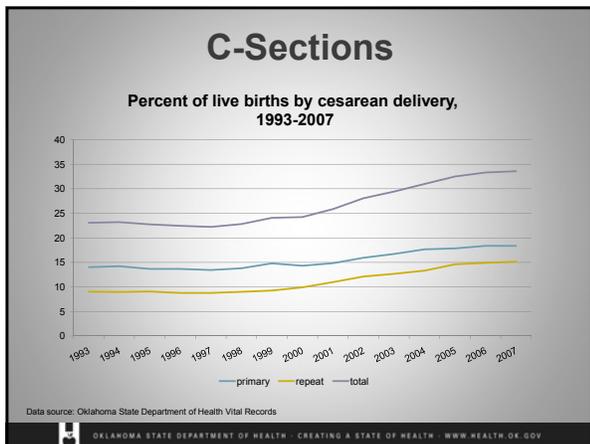


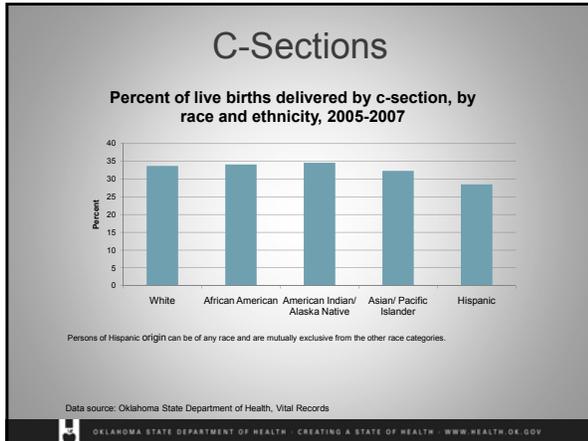












C-Sections

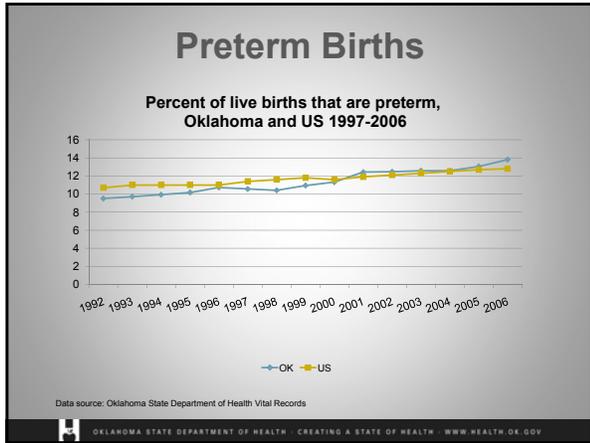
- Data from the Oklahoma Hospital Association show that the average charge for an uncomplicated c-section delivery in 2007 was \$11,002 with an average length of stay of 3 days.
- This compares to \$6,867 and 2 days for a vaginal delivery without complications.
- C-sections with complications the costs were an average of \$13,854 and length of stay of 3.7 days.
- A vaginal delivery with complications was \$9,325 with a stay of 2.6 days, significantly lower than an uncomplicated c-section.

OKLAHOMA STATE DEPARTMENT OF HEALTH · CREATING A STATE OF HEALTH · WWW.HEALTH.OK.GOV

Preterm Births

- A preterm birth is defined as any live birth with a gestational age <37 completed weeks.
- Data from the Oklahoma Hospital Association show the hospital stay for a normal, full-term baby in 2007 cost an average of \$1,844 and had an average length of stay of 2 days.
- This compares to \$13,006 and stay of 5.6 days for preterm birth without any major problems.
- The average cost for a preterm birth with major problems was \$57,571 with an average stay of 15.6 days.

OKLAHOMA STATE DEPARTMENT OF HEALTH · CREATING A STATE OF HEALTH · WWW.HEALTH.OK.GOV



Tobacco

OKLAHOMA STATE DEPARTMENT OF HEALTH · CREATING A STATE OF HEALTH · WWW.HEALTH.OK.GOV

- ### Tobacco
- Miscarriage
 - Childhood cancers
 - Ectopic pregnancy
 - Premature birth
 - Spontaneous abortion
 - Stillbirth
 - SIDS
 - Placental abruption
 - Cleft palates and cleft lips
 - Decreased fetal growth and low birth weight
- OKLAHOMA STATE DEPARTMENT OF HEALTH · CREATING A STATE OF HEALTH · WWW.HEALTH.OK.GOV

Interconception Care

Logistic Regression of Factors Influencing Two Consecutive Unintended Pregnancies; TOIS 2004-2007

Maternal Characteristic	Adjusted Odds Ratio	95% CI
Age*		
<20	3.2	1.6, 6.2
20+ (Reference)	1.0	1.0, 1.0
Medicaid*		
Yes	2.7	1.4, 5.2
No (Reference)	1.0	1.0, 1.0
Marital Status*		
Married (Reference)	1.0	1.0, 1.0
Unmarried	2.5	1.3, 4.8
Birth Control Use**		
Yes	1.0	1.0, 1.0
No	4.3	2.2, 8.2
Postpartum checkup		
Yes (Reference)	1.0	1.0, 1.0
No	2.0	1.0, 3.7

OKLAHOMA STATE DEPARTMENT OF HEALTH - CREATING A STATE OF HEALTH - WWW.HEALTH.OK.GOV

Postpartum checkup percentage among Oklahoma women delivering live births PRAMS, 2004-2007

Overall: 84.3%

Maternal Race
 White: 86.1%
 African-American: 75.0%
 Native American: 79.5%
 Other: 85.4%

Maternal Age (years)
 < 20: 74.0%
 20-24: 81.8%
 25-29: 87.5%
 30-34: 89.8%
 35+: 85.6%

Maternal Ethnicity
 Hispanic: 74.5%
 Non-Hispanic: 85.7%

Maternal Education
 Less than high school: 67.4%
 High school or college: 88.1%

OKLAHOMA STATE DEPARTMENT OF HEALTH - CREATING A STATE OF HEALTH - WWW.HEALTH.OK.GOV

Perinatal Task Force Survey Results

OKLAHOMA STATE DEPARTMENT OF HEALTH - CREATING A STATE OF HEALTH - WWW.HEALTH.OK.GOV

Perinatal Task Force Survey Results

33 total responders to the survey
Areas listed in order of priority are as follows:

1. Access to Care
2. Infant Mortality
3. Preterm Births
4. Health Disparities
5. Tobacco
6. Unintended Pregnancies
7. Obesity
8. Infant Safe Sleep



OKLAHOMA STATE DEPARTMENT OF HEALTH · CREATING A STATE OF HEALTH · WWW.HEALTH.OK.GOV

Discussion

OKLAHOMA STATE DEPARTMENT OF HEALTH · CREATING A STATE OF HEALTH · WWW.HEALTH.OK.GOV

2010 Title V Block Grant Needs Assessment

James Marks, MSW
Director, Child and Adolescent Health Division

Thad Burk, MPH
Epidemiologist, MCH Assessment
Maternal and Child Health Service

Title V Block Grant

- The grant provides federal funds for the Maternal and Child Health program, whose primary goal is to improve the health status of pregnant women, mothers, infants, and children, including children with special health care needs
- Funds from the block grant assure that these groups, particularly those with low income or with limited availability of services, have access to quality maternal and child health care services

Part E

Children and Adolescents

Data



Access to Care

No Health Insurance	%
• Two year olds ¹	5.5
• 1 st graders ²	9.1
• 0-17 year olds ³	12.9
• 18-24 year olds ⁴	35.8



Access to Care

No Personal Doctor	%
• Two year olds ¹	19.2
• 1 st graders ²	13.9
• 18-24 year olds ⁴	38.5



Access to Care

Bar had tooth decay	%
• Two year olds ¹	2.5
• 1 st graders ²	29.4
• 3 rd graders ⁵	71.5

• 9.1% of first graders' parents reported their child could not get the dental care they needed in the 12 months before the survey².

OKLAHOMA STATE DEPARTMENT OF HEALTH - CREATING A STATE OF HEALTH - WWW.HEALTH.OK.GOV

Provider Shortages

Patient to physician ratio ⁶	Rank
• Oklahoma	51 st

• 50% of Oklahoma's medical school graduates leave the state for their residencies

• 50% of those completing their medical residency in Oklahoma leave the state upon completion

OKLAHOMA STATE DEPARTMENT OF HEALTH - CREATING A STATE OF HEALTH - WWW.HEALTH.OK.GOV

Provider Shortages

By 2012 Oklahoma is projected to be short⁷:

- 3000 nurses
- 500 lab technicians
- 400 physical therapists
- 300 surgical technologists
- 200 occupational therapists

OKLAHOMA STATE DEPARTMENT OF HEALTH - CREATING A STATE OF HEALTH - WWW.HEALTH.OK.GOV

Provider Shortages

OK Counties without ⁸ ...	Number
• A practicing dentist	6
• A dental hygienist	5

OKLAHOMA STATE DEPARTMENT OF HEALTH - CREATING A STATE OF HEALTH - WWW.HEALTH.OK.GOV

Barriers to Care

Reasons given by parents of first graders²

- Insurance costs too much
- Did not qualify for StonerCare
- Insurance does not cover dental
- Transportation problems
- No doctor available in their area
- Difficulty getting an appointment
- Inconvenient office hours

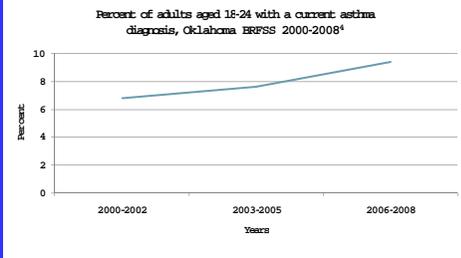
OKLAHOMA STATE DEPARTMENT OF HEALTH - CREATING A STATE OF HEALTH - WWW.HEALTH.OK.GOV

Asthma

Prevalence of children with asthma, aged 0-17, NSCH 2007 ⁹			
	Had at some point but not currently	Currently have asthma	Ever had asthma
U.S.	4.5	9.0	13.5
OK	5.7	11.7	17.4

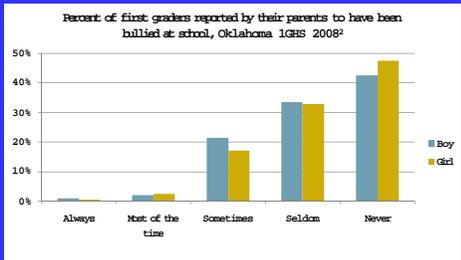
OKLAHOMA STATE DEPARTMENT OF HEALTH - CREATING A STATE OF HEALTH - WWW.HEALTH.OK.GOV

Asthma



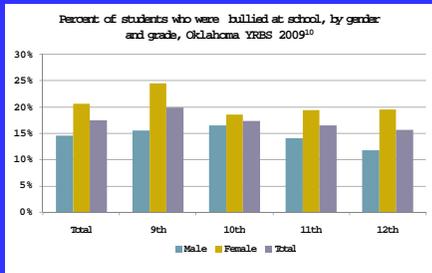
OKLAHOMA STATE DEPARTMENT OF HEALTH - CREATING A STATE OF HEALTH - WWW.HEALTH.OK.GOV

Bullying



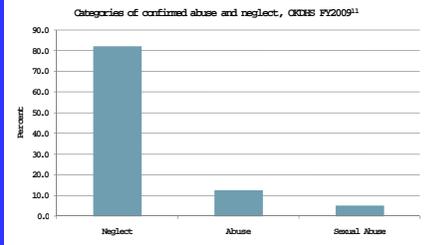
OKLAHOMA STATE DEPARTMENT OF HEALTH - CREATING A STATE OF HEALTH - WWW.HEALTH.OK.GOV

Bullying



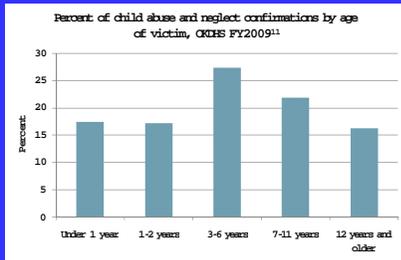
OKLAHOMA STATE DEPARTMENT OF HEALTH - CREATING A STATE OF HEALTH - WWW.HEALTH.OK.GOV

Child Abuse and Neglect



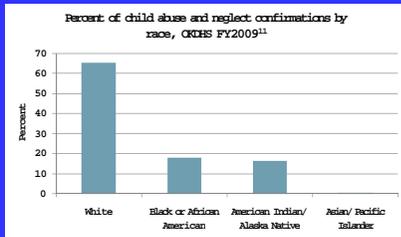
OKLAHOMA STATE DEPARTMENT OF HEALTH - CREATING A STATE OF HEALTH - WWW.HEALTH.OK.GOV

Child Abuse and Neglect



OKLAHOMA STATE DEPARTMENT OF HEALTH - CREATING A STATE OF HEALTH - WWW.HEALTH.OK.GOV

Child Abuse and Neglect

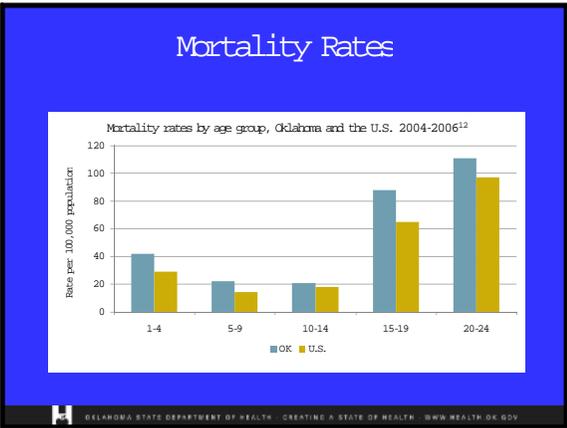


OKLAHOMA STATE DEPARTMENT OF HEALTH - CREATING A STATE OF HEALTH - WWW.HEALTH.OK.GOV

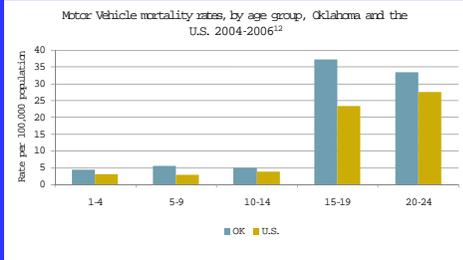
Child and Adolescent Mortality

Leading causes of death by age group, Oklahoma 2004-2006¹²

Rank	1-4	5-9	10-14	15-19	20-24
1	Unintentional injury				
2	Congenital anomalies	Malignant neoplasms	Homicide	Suicide	Suicide
3	Homicide	Homicide	Suicide	Homicide	Homicide
4	Malignant neoplasms	Congenital anomalies	Malignant neoplasms	Malignant neoplasms	Malignant neoplasms
5	Heart disease	Benign neoplasms	Congenital anomalies	Heart disease	Heart disease
6	Influenza and pneumonia	Cerebrovascular diseases	Chronic lower respiratory disease	Congenital anomalies	Complicated pregnancy
7	Septicemia	Chronic lower respiratory disease	Heart disease	Influenza and pneumonia	Congenital anomalies
8	Benign neoplasms	Influenza and pneumonia	Influenza and pneumonia	Chronic lower respiratory disease	Diabetes mellitus
9	Cerebrovascular diseases	Five tied	Four tied	Complicated pregnancy	Cerebrovascular diseases
10	Chronic lower respiratory disease	Five tied	Four tied	Benign neoplasms	Chronic lower respiratory disease

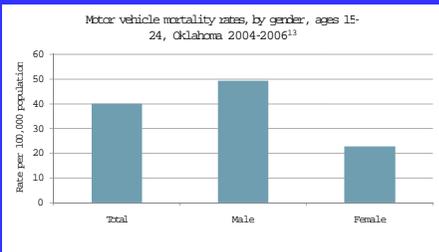


Motor Vehicle Mortality



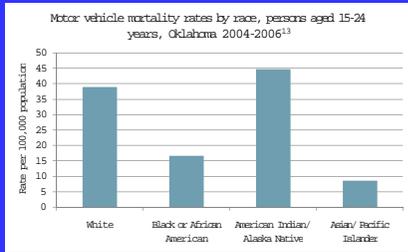
OKLAHOMA STATE DEPARTMENT OF HEALTH - CREATING A STATE OF HEALTH - WWW.HEALTH.OK.GOV

Motor Vehicle Mortality

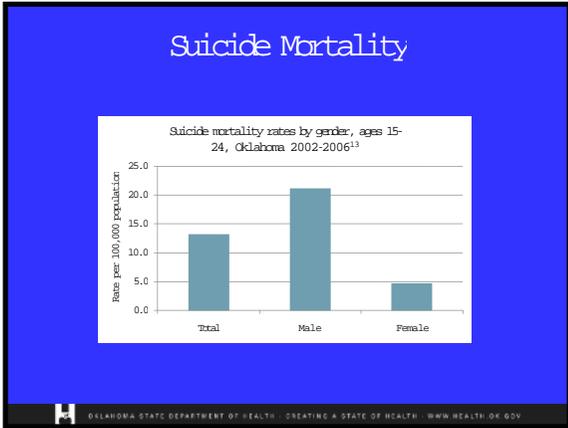


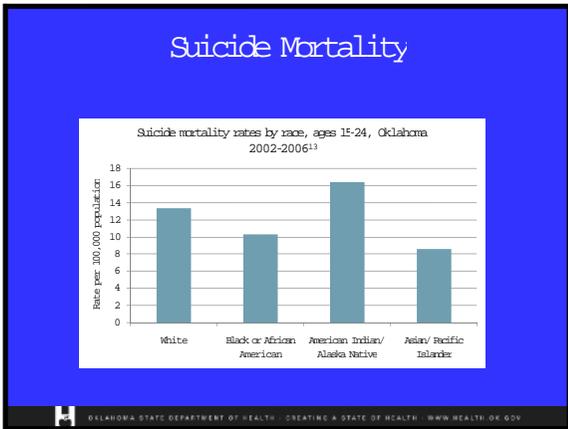
OKLAHOMA STATE DEPARTMENT OF HEALTH - CREATING A STATE OF HEALTH - WWW.HEALTH.OK.GOV

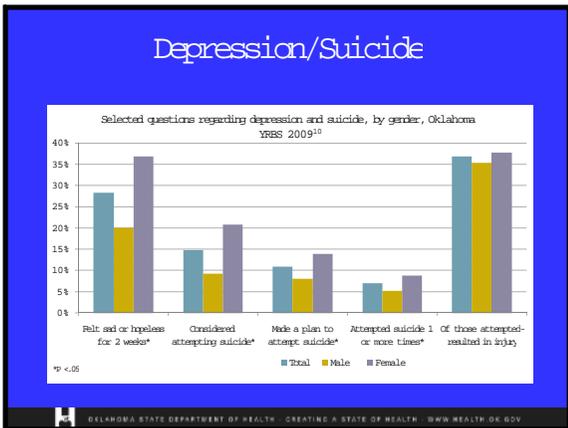
Motor Vehicle Mortality

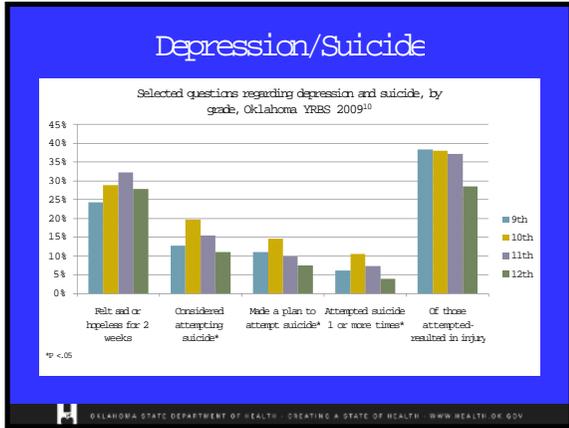


OKLAHOMA STATE DEPARTMENT OF HEALTH - CREATING A STATE OF HEALTH - WWW.HEALTH.OK.GOV









Alcohol Use

Questions regarding alcohol use, by gender, Oklahoma YRBS 2009¹⁰

Percentage of students who....	Total	Male	Female
had at least one drink of alcohol on one or more days during their life	71.5%	68.3%	74.8%
had their first drink of alcohol before age 13*	19.5%	23.6%	15.3%
had at least one drink of alcohol on one or more of the past 30 days	38.9%	38.2%	39.6%
had five or more drinks of alcohol in a row on one or more of the past 30 days	23.9%	25.9%	21.9%
had at least one drink of alcohol on school property on one or more of past 30 days	3.86%	3.96%	3.75%
Of those who reported current alcohol use, the percentage who got the alcohol they drink from someone who gave it to them during the past 30 days*	46.2%	40.5%	51.8%

* Significant difference by gender, P < .05

OKLAHOMA STATE DEPARTMENT OF HEALTH - CREATING A STATE OF HEALTH - WWW.HEALTH.OK.GOV

Other Substance Use

Questions regarding substance abuse, YRBS 2003-2009¹⁰

Percentage of students who.....	2003	2006	2007	2009
have used marijuana one or more times during their life*	42.5	39.3	33.2	31.9
used marijuana before age 13*	11.1	9.4	8.1	7.3
used marijuana one or more times during the past 30 days*	22.0	18.7	15.5	17.2
used marijuana on school property one or more times during the past 30 days	4.3	3.0	2.6	2.5
used any form of cocaine one or more times during their life	9.2	8.7	7.3	7.4
used any form of cocaine during the past 30 days	3.4	2.6	3.0	2.3
sniffed glue, breathed the contents of aerosol spray cans, or inhaled any paints or sprays to get high one or more times during their life	9.9	12.0	11.7	12.7

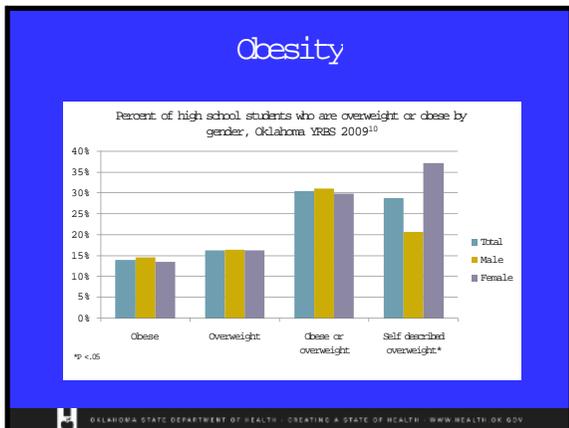
* Significant linear change

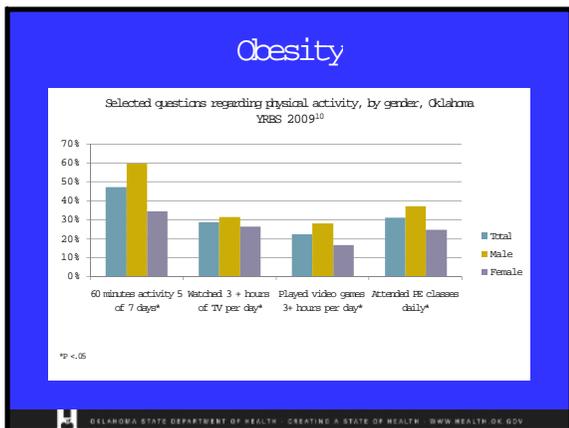
OKLAHOMA STATE DEPARTMENT OF HEALTH - CREATING A STATE OF HEALTH - WWW.HEALTH.OK.GOV

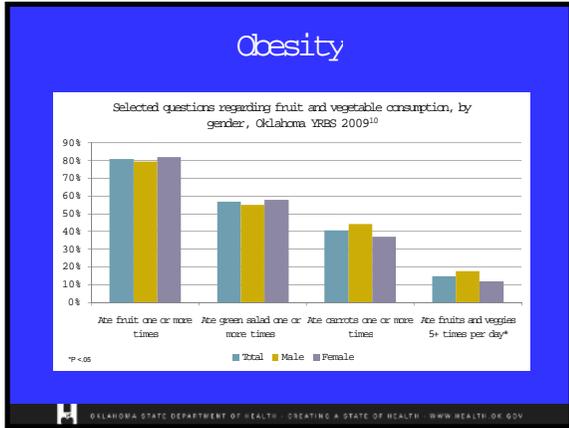
Other Substance Use

Questions regarding substance abuse, YRBS 2003-2009 ¹⁰				
Percentage of students who.....	2003	2005	2007	2009
used heroin one or more times during their life	2.7	2.1	2.2	2.3
used methamphetamines one or more times during their life*	9.9	7.1	5.5	4.8
used ecstasy one or more times during their life	7.2	6.7	5.9	8.1
took steroid pills or shots without a doctor's prescription one or more times during their life	4.8	3.7	4.7	5.3
used a needle to inject any illegal drug into their body one or more times during their life	2.4	2.0	2.1	1.7
were offered, sold, or given an illegal drug by someone on school property during the past 12 months	22.2	18.4	19.1	16.8
* Significant linear change				

OKLAHOMA STATE DEPARTMENT OF HEALTH - CREATING A STATE OF HEALTH - WWW.HEALTH.OK.GOV







Sexual Behavior

Questions regarding sexual behavior, by gender, YRBS 2009¹⁰

Percentage of students who.....	Total	Male	Female
ever had sexual intercourse	50.9%	51.2%	50.7%
had sexual intercourse before age 13	4.7%	5.9%	3.4%
had sexual intercourse with 4 or more people in their lifetime*	17.7%	20.1%	15.2%
had sexual intercourse during the past three months	39.9%	39.5%	40.3%
had ever been taught in school about AIDS or HIV*	82.0%	79.1%	85.0%

Among students who had sexual intercourse during the past three months, the percentage who at last sexual intercourse....	Total	Male	Female
used alcohol or drugs	19.9%	19.6%	20.2%
used a condom*	56.7%	64.1%	49.5%
used birth control pills to prevent pregnancy	22.7%	23.4%	22.1%

*P < .05

OKLAHOMA STATE DEPARTMENT OF HEALTH | CREATING A STATE OF HEALTH | WWW.HEALTH.OK.GOV

Sexual Behavior

Questions regarding sexual behavior, by grade, YRBS 2009¹⁰

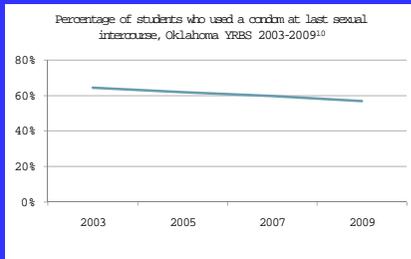
Percentage of students who.....	9th	10th	11th	12th
ever had sexual intercourse*	32.2%	48.7%	56.3%	70.2%
had sexual intercourse before age 13	4.9%	4.6%	5.9%	3.0%
had sexual intercourse with 4 or more people in their lifetime*	10.2%	17.2%	20.2%	24.1%
had sexual intercourse during the past three months*	22.9%	36.8%	43.6%	58.8%
had ever been taught in school about AIDS or HIV*	76.2%	83.0%	81.1%	88.9%

Among students who had sexual intercourse during the past three months, the percentage who at last sexual intercourse....	9th	10th	11th	12th
used alcohol or drugs*	16.2%	29.9%	13.2%	20.1%
used a condom*	63.6%	62.4%	52.5%	52.6%
used birth control pills to prevent pregnancy*	17.7%	12.9%	21.3%	33.6%

*P < .05

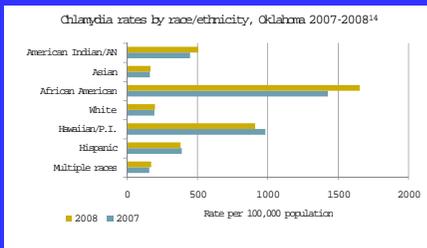
OKLAHOMA STATE DEPARTMENT OF HEALTH | CREATING A STATE OF HEALTH | WWW.HEALTH.OK.GOV

Among students who had sex in the past three months...



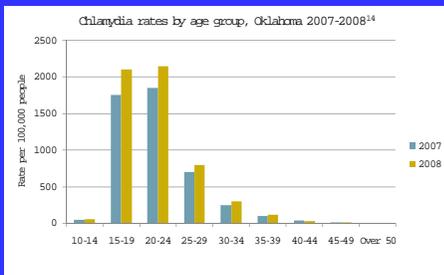
OKLAHOMA STATE DEPARTMENT OF HEALTH - CREATING A STATE OF HEALTH - WWW.HEALTH.OK.GOV

SID's

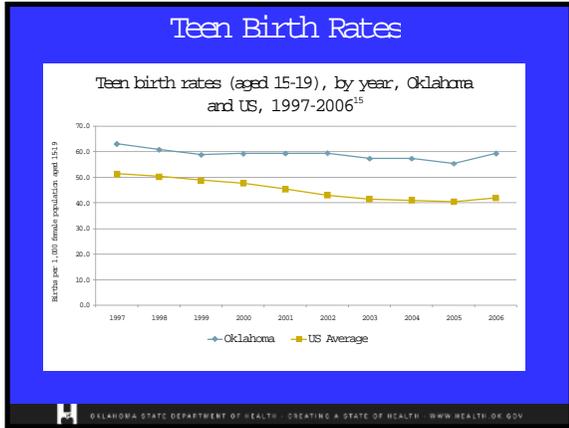


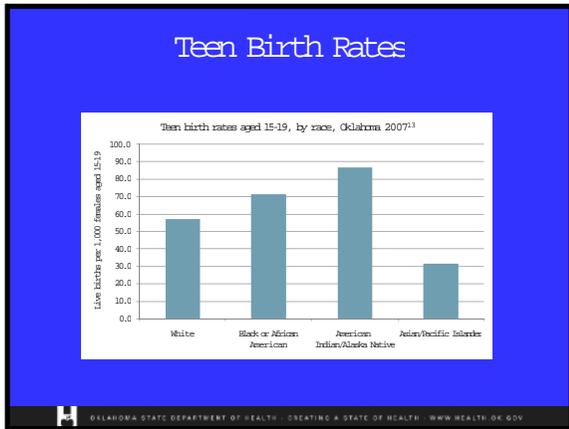
OKLAHOMA STATE DEPARTMENT OF HEALTH - CREATING A STATE OF HEALTH - WWW.HEALTH.OK.GOV

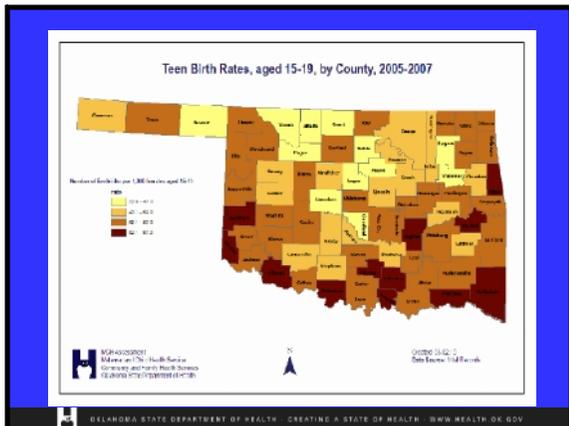
SID's



OKLAHOMA STATE DEPARTMENT OF HEALTH - CREATING A STATE OF HEALTH - WWW.HEALTH.OK.GOV





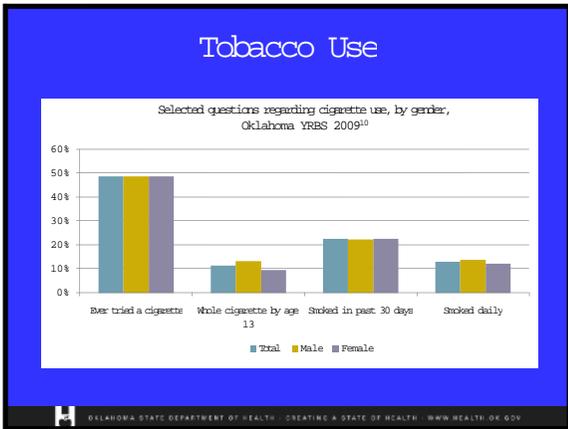


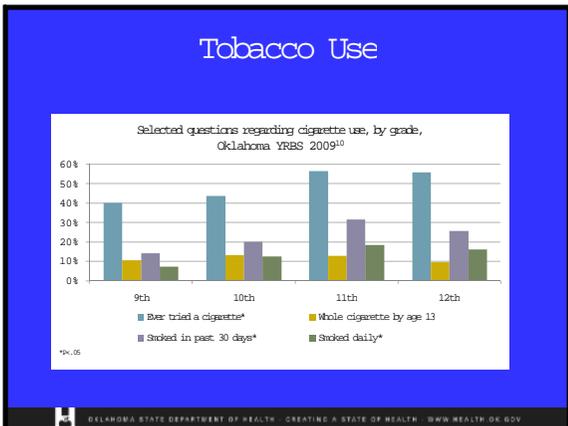
Tobacco Exposure

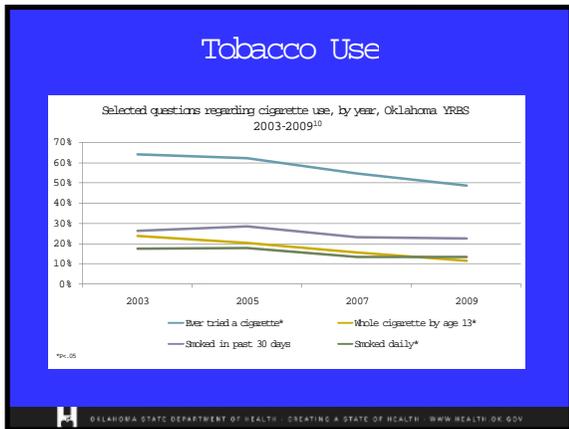
Exposed to tobacco smoke on a daily basis
Any amount of exposure

- Two year olds¹ 14.3%
- 1st graders² 26.3%

OKLAHOMA STATE DEPARTMENT OF HEALTH | CREATING A STATE OF HEALTH | WWW.HEALTH.OK.GOV







- ### Top Eleven (in alphabetical order) Child and Adolescent Health Priority Matrix List, 2010 Needs Assessment
1. Access to Care
 2. Asthma
 3. Bullying
 4. Child Abuse and Neglect
 5. Depression
 6. Motor vehicle injury and death
 7. Obesity
 8. STDs/Risky Sexual Behavior
 9. Suicide
 10. Teen Pregnancy
 11. Tobacco use
- OKLAHOMA STATE DEPARTMENT OF HEALTH - CREATING A STATE OF HEALTH - WWW.HEALTH.OK.GOV

- ### Data Sources
1. Oklahoma State Department of Health, Maternal and Child Health Service, The Oklahoma Toddler Survey (TOTS) 2008. Available for viewing at <http://www.ok.gov/health/>
 2. Oklahoma State Department of Health, Maternal and Child Health Service, First Grade Health Survey 2007-2008. Available for viewing at <http://www.ok.gov/health/>
 3. US Census Bureau, 2008 American Community Survey.
 4. Oklahoma State Department of Health, Center for Health Statistics, Vital Records Division, Behavior Risk Factor Surveillance System (BRSS), OK2SHARE On-line Database. Available for viewing at <http://www.ok.gov/health/vitalrecords/ok2share.html>
 5. Oklahoma State Department of Health, Dental Health Service, Oklahoma Oral Health Needs Assessment 2008.
- OKLAHOMA STATE DEPARTMENT OF HEALTH - CREATING A STATE OF HEALTH - WWW.HEALTH.OK.GOV

Data Sources Continued

- 6. Oklahoma Hospital Association. Oklahoma Hospitals 101, A Resource Guide for Elected Officials, February 2009. Accessed March 2010.
- 7. Oklahoma Health Care Workforce Center. Trends in Oklahoma Hospital Professions Supply, Vacancies, Turnover & Educational Capacity Expansion. April 2009. Accessed March 15 2010.
- 8. Oklahoma Board of Dentistry, Governor's Task Force on Children and Oral Health. Available for viewing at <http://www.ok.gov/dent-list/>
- 9. Child and Adolescent Health Measurement Initiative. 2007 National Survey of Children's Health, Data Resource Center for Child and Adolescent Health website. Retrieved [01/10/10] from www.naschdata.org
- 10. Oklahoma State Department of Health, Center for Health Statistics, Vital Records Division. Youth Risk Behavior System (YRBS). OK2SHARE On-line Database. Available for viewing at <http://www.ok.gov/health/yrb/wrapper/ok2share.html>

Data Sources Continued

- 11. Oklahoma Department of Human Services (OKDHS), Abuse and Neglect Reports FY 2009. Available for viewing at <http://www.okdhs.org/Library/extra/abn/abn.htm>
- 12. Centers for Disease Control and Prevention, National Center for Health Statistics. Compressed Mortality File 1998-2006. CDC WONDER On-line Database, compiled from Compressed Mortality File 1998-2006 Series 20 No. 24, 2009. Accessed at <http://wonder.cdc.gov/cmfi-icd10.html> on Jan 18, 2010 3:11:09 PM
- 13. Oklahoma State Department of Health, Center for Health Statistics, Vital Records Division. OK2SHARE On-line Database. Available for viewing at <http://www.ok.gov/health/yrb/wrapper/ok2share.html>
- 14. Oklahoma State Department of Health, HIV/SID Division. Available for viewing at <http://www.ok.gov/health/>
- 15. Centers for Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS).

Discussion

Oklahoma's Children with Special Health Care Needs (CSHCN)

Mumbe Kithakye, PhD
Office of Planning, Research and Statistics

Karen Hylton, CSHCN Director
Family Support Services Division

Oklahoma Department of Human Services

Definition of CSHCN

Children who have or are at risk for chronic physical, developmental, behavioral or emotional conditions and who also require health and related services of a type or amount beyond that required by children generally.

(Source: Maternal and Child Health Bureau)

80% of health care dollars spent annually on all children is spent on CSHCN.

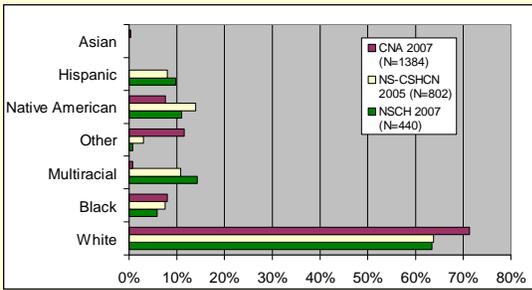
Source: National Initiative for Children's Healthcare Quality

2

Description of Oklahoma's CSHCN population

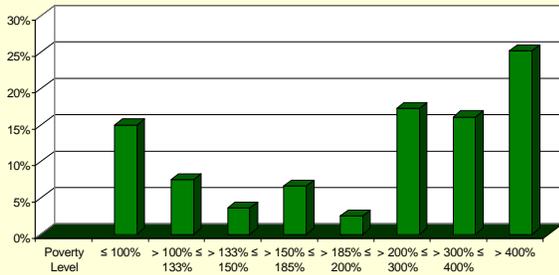
3

Demographics of CSHCN



CNA Source: Child Study Center Program, Sooner SUCCESS Community Needs Assessment 2007-2008, Global Report.
 NSCH Source: Child and Adolescent Health Measurement Initiative, 2007, National Survey of Children's Health, www.nschdata.org
 NS-CSHCN Source: National Survey of Children with Special Health Care Needs (NS-CSHCN) 2005-2006. 7

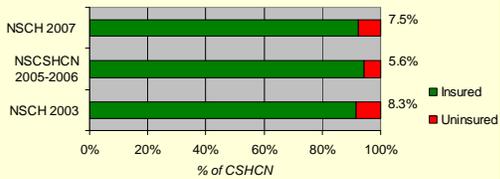
Income Distribution (NSCH 2007)



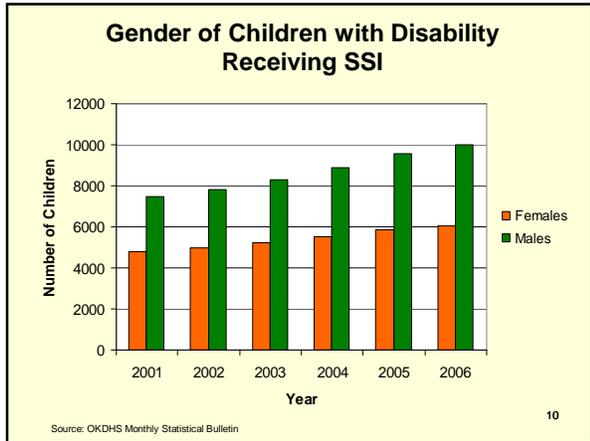
Source: Child and Adolescent Health Measurement Initiative, 2007, National Survey of Children's Health, www.nschdata.org 8

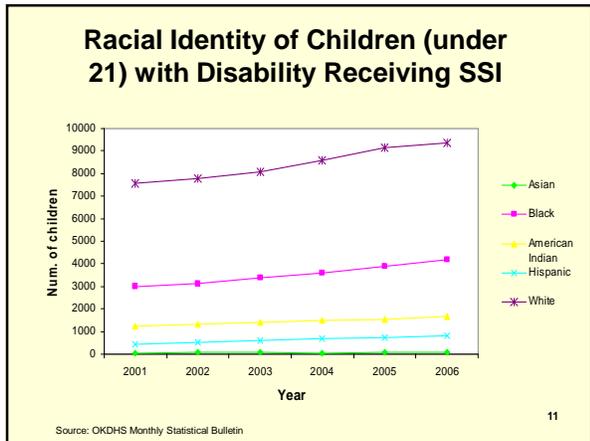
Health Insurance

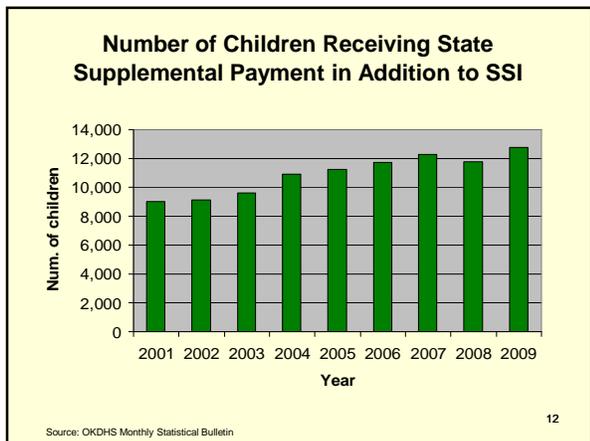
	Oklahoma %	National %
With healthcare coverage	92.5%	95.1%
Healthcare coverage through Medicaid/ state Child Health Insurance Program	38.4%	28.9%



Source: Child and Adolescent Health Measurement Initiative, 2007, National Survey of Children's Health, www.nschdata.org 9







Health conditions of CSHCN population

13

Conditions* of CSHCN in Oklahoma (NS-CSHCN 2005-2006)

Allergies	64.7%	Heart Problems	2.9%
Asthma	40.0%	Cerebral Palsy	2.0%
Attention Deficit Disorder	30.7%	Blood Problems	1.7%
Emotional Problems	25.7%	Diabetes	1.0%
Migraine/Frequent Headache	19.3%	Down Syndrome	1.0%
Mental Retardation	12.3%	Muscular Dystrophy	0.5%
Autism	3.2%	Cystic Fibrosis	0.1%
Seizure Disorder	3.1%		

* One or more conditions may have been reported for each child.

Source: National Survey of Children with Special Health Care Needs (NS-CSHCN) 2005-2006.

14

Top Conditions

Physical

- Asthma
- Allergies

Behavioral/Emotional

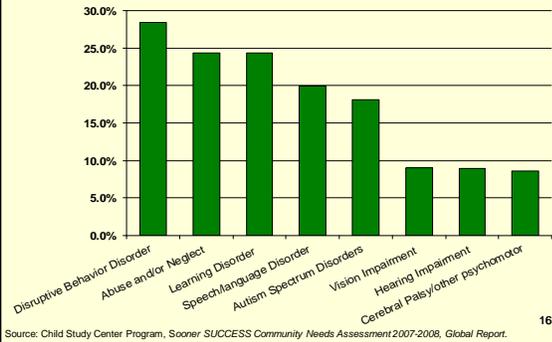
- Attention Deficit Disorder
- Emotional Problems

Developmental

- Learning Disabilities
- Mental retardation

15

Special Health Care Diagnoses in the 2007-2008 Community Needs Assessment



16

Priority needs of the CSHCN population

17

The Process

- OSDH Online survey
- SoonerSUCCESS 2007-2008 Community Needs Assessment
- Input from parent organizations and families

18

Priority Needs

- Improve access to day care for CSHCN
- Improve access to health care (behavioral, dental and medical) for CSHCN
- Increase knowledge among the public, providers and county health departments regarding services available to CSHCN
- Assist youth with special health care needs in developing their individual skills and abilities so they can lead healthy, safe, independent and productive adult lives (national performance measure)
- More family support in the form of parenting classes, family counseling and mentoring programs
- More respite care services for families of CSHCN

19

Most Frequently Identified Needs: Family

Learning Labs for Children with Learning Disabilities	19.3%
Day Care for Children	12.8%
Extended School Hours/ After School Programs	12.7%
Dental Care	12.1%
Non School-Based Speech and Language Therapy	10.0%
Advocacy Organizations	9.6%
Respite Care	8.9%
Family Counseling	7.3%
Support Groups	7.3%
Certified Special Education Personnel	6.9%

Source: Child Study Center Program, Sooner SUCCESS Community Needs Assessment 2007-2008, Global Report. 20

Most Frequently Identified Needs: Providers

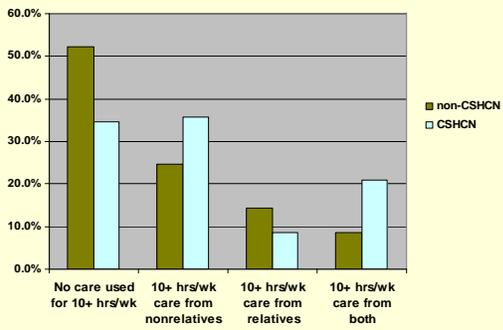
Foster Homes	24.6%
Family Counseling	18.0%
Day Care for Children	16.2%
Parenting Classes	14.5%
Mentoring Programs	14.3%
Extended School Hours/ After School Programs	13.6%
Respite Care	13.2%
Transportation for Appointments	12.7%
Individual Counseling	12.0%
Shelters: Homeless, Domestic Violence, Emergency, etc.	11.1%

Source: Child Study Center Program, Sooner SUCCESS Community Needs Assessment 2007-2008, Global Report. 21

Access to Day Care

22

Child Care (NSCH 2007)



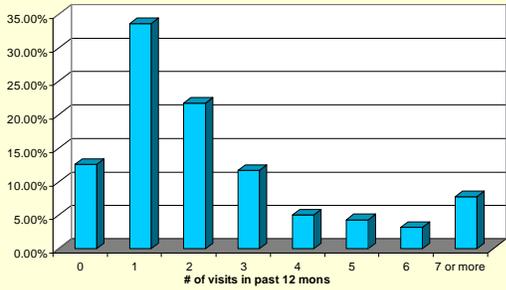
Source: Child and Adolescent Health Measurement Initiative, 2007, National Survey of Children's Health, www.nschdata.org

23

Access to Health Care

24

Medical Care (NCHS 2007)



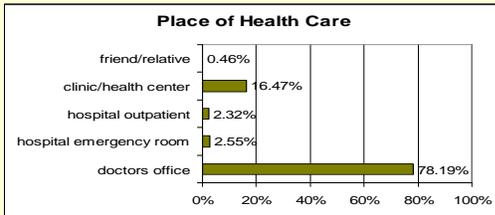
Source: Child and Adolescent Health Measurement Initiative, 2007, National Survey of Children's Health, www.nschdata.org

25

Place of Care (NSCH 2007)

Is there a place child USUALLY goes to when sick?

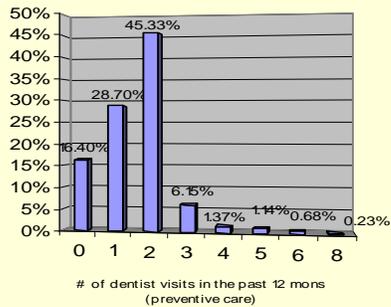
Yes	95.2
no	2.0
more than one place	2.7



Source: Child and Adolescent Health Measurement Initiative, 2007, National Survey of Children's Health, www.nschdata.org

26

Dental Care (NSCH 2007)



Source: Child and Adolescent Health Measurement Initiative, 2007, National Survey of Children's Health, www.nschdata.org

27

Number of disabled children under 21 and children in foster care utilizing SoonerCare (Medicaid) for routine dental services

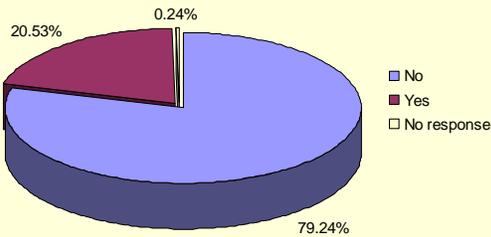
2006 = 130,899
 2007 = 129,105
 2008 = 121,314
 2009 = 121,344

Source: Oklahoma Health Care Authority

28

Mental/Behavioral Services

Has child received any treatment or counseling from a mental health professional? (NSCH 2007)



Source: Child and Adolescent Health Measurement Initiative, 2007, National Survey of Children's Health, www.nschdata.org

29

Mental Health & Foster Children

- 12,000 Oklahoma children enter foster care each year (Shropshire & Gillaspay)
- Up to an estimated 60% of foster children have emotional or behavioral problems (Shropshire & Gillaspay)

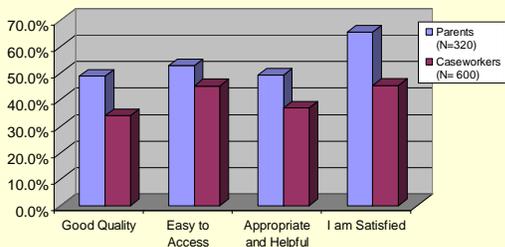
Percentage of Caseworkers and Parents who DISAGREE with the following statements:

	Caseworkers	Parents
Psychological testing is available in/near my county.	20%	14%
Psychological Medication Management is available in/near my county.	24%	21%
Mental Health Therapy is available in/near my county.	9%	10%

Shropshire, D., & Gillaspay, S.R. *Fostering Hope Health care for Foster Kids* presentation.

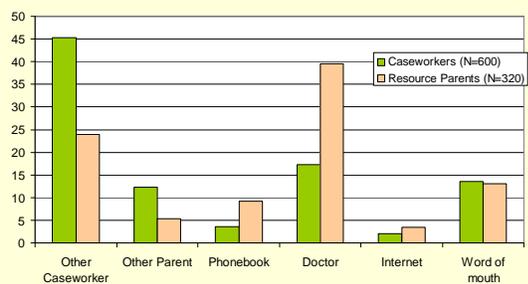
30

Perceptions of the Quality of Mental Health Services for Foster Children (Risch, et al.)



Risch, E., Wagener, T.L., Kelley, A.D., Shropshire, D., & Gillaspay, S.R. *Child Welfare Caseworker and Resource Parent Perceptions and Barriers to Accessing Mental Health Services for children in Foster Care.*

Most Common Method of Accessing Mental Health Services for Foster Children (Risch, et al.)



Risch, E., Wagener, T.L., Kelley, A.D., Shropshire, D., & Gillaspay, S.R. *Child Welfare Caseworker and Resource Parent Perceptions and Barriers to Accessing Mental Health Services for children in Foster Care.*

Assist youth in transitioning
to adulthood

Transition

Youth with special health care needs state they have difficulty transitioning to an adult provider who understands their condition.

Transition practices research has illustrated that post-school outcomes of students with disabilities improve when educators, families, students and community members and organizations work together to implement a broad perspective of transition-focused education.

Source: Oklahoma Transition Institute – 2009

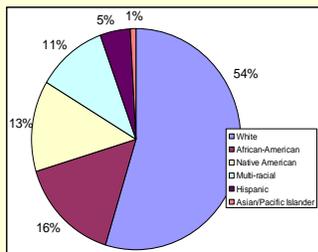
34

Respite Care

35

Respite voucher applications (2004 – 2009)

- 1433 applications for people under 21
- 880 males, 553 females
- 558 (39%) chronic or special health care needs
- 323 (23%) raised by grandparent



Source: Oklahoma Area-wide Services Information System (OASIS)

36

Gaps

- Some expressed needs are difficult to measure
- Lack of trained providers (health care, child care, etc.)
- Lack of transportation
- Lack of services in rural communities
- Lack of data – not enough specific to Oklahoma

37

Survey Responses

- Assist youth with special health care needs in developing their individual skills and abilities so they can lead healthy, safe, independent and productive adult lives
- Improve access to health care (behavioral, dental and medical) for CSHCN
- More family support in the form of parenting classes, family counseling and mentoring programs
- Improve access to day care for CSHCN
- More respite care services for families of CSHCN
- Increase knowledge among the public, providers and county health departments regarding services available to CSHCN

38

Data Sources

- National Survey of Children's Health (NSCH) 2003 & 2007
- Sooner SUCCESS Community Needs Assessment (CNA) 2007-2008
- National Survey of Children with Special Health Care Needs (NSCSHCN), 2005-2006
- National Initiative for Children's Healthcare Quality (NICHQ)
- Oklahoma Transition Institute - 2009
- Oklahoma State Department of Health survey, 2009
- Oklahoma Areawide Services Information System (OASIS)
- Oklahoma Department of Human Services
- Oklahoma Healthcare Authority

39

Appendix G

Participants in the Oklahoma Title V
Needs Assessment Process

Participants in the Oklahoma Title V Needs Assessment Process, 2011-2015

Oklahoma State Department of Health (OSDH) Maternal and Child Health Service	Families	Oklahoma Department of Human Services (OKDHS)
American College of Nurse-Midwives (OK Chapter)	Healthy Start projects	Oklahoma Commission on Children and Youth
American Academy of Pediatrics OK Chapter	Indian Health Service	Oklahoma Dental Association
American College of OB/GYN (ACOG)	March of Dimes	Oklahoma Dental Hygienist Association
Assoc. of Women's Health, OB & Neonatal Nurses	Maternal Fetal Medicine	Oklahoma Department of Mental Health and Substance Abuse Services
Blue Cross Blue Shield of Oklahoma	National Association of Pediatric Nurse Practitioners	Oklahoma Development Disabilities Council
Central Oklahoma Integrated Network System	Office of Perinatal Continuing Education	Oklahoma Family Network
Central Oklahoma Perinatal Coalition	Oklahoma Academy of Family Physicians	Oklahoma Health Care Authority
Child Guidance (OSDH)	Oklahoma Academy of Ophthalmology	Oklahoma Hospital Association
Children First (OSDH)	Oklahoma Academy of Pediatrics	Oklahoma Institute for Child Advocacy
Children's Medical Center	Oklahoma Academy of Physician Assistants	Oklahoma Nurses Association
Community Services Council of Greater Tulsa	Oklahoma Areawide Services Information System	Oklahoma Osteopathic Association
Consumer Representatives	Oklahoma City Area Inter-tribal Health Board	Oklahoma Physical Therapy Association
Dental Health (OSDH)	Oklahoma City Indian Clinic	Oklahoma Primary Care Association
Down Syndrome Assoc. of Central OK	Oklahoma City-County and Tulsa City-County Fetal and Infant Mortality Review Teams	Oklahoma State Department of Education
Head Start State Collaboration Office	Oklahoma City-County Health Department	The Oklahoma Family Network
Oklahoma State Medical Association (OSMA)	OU Department of Family Medicine (Tulsa)	Tobacco Use Prevention (OSDH)
Oklahoma State Medical Association OB/GYN	OU Department of Pediatrics (OKC)	Tulsa City-County Health Department
Oklahoma Turning Point Collaborative	OU Department of Pediatrics (Tulsa)	University of Oklahoma Health Sciences Center
OSU Department of Family Medicine	OU Medical Center Women's Services	University of Oklahoma Medical Center
OSU Department of OB/GYN (Tulsa)	OU Health Science Center Child Study Center	Variety Health Center
OSU Department of Pediatrics	Schools for Healthy Lifestyles	Youth Services (Tulsa)
OU Depart. of Obstetrics & Gynecology (OKC)	SoonerStart (OSDH)	Screening and Special Services (OSDH)
OU Depart. of Obstetrics & Gynecology (Tulsa)	OU Department of Family and Preventive Medicine (OKC)	Smart Start Oklahoma