



PRAMSGRAM

OKLAHOMA PREGNANCY RISK ASSESSMENT MONITORING SYSTEM • VOL 6 NOS 2 & 3

Perinatal Characteristics of Women in Oklahoma: A Comparison of Communities

Background

Communities and local health systems are some of the most visible and important resources in protecting and promoting the health of their citizens. The development of a community-oriented framework for providing health and human services oversight and planning is necessary to ensure appropriate access and services are available to meet local needs. This community-based orientation requires accurate, useable, and timely information reflecting the needs and characteristics of a specific community. Information available through local health service providers, although useful, measures only those individuals served, not the entire population. It is critical that the health of individuals who do and do not access services be represented. Only by examining the health of the entire population can the health-related needs of a community as a whole be determined.

Two areas in Oklahoma with a long history of community assessment and involvement in health-related issues are Oklahoma and Tulsa counties. Recently, community-based organizations in these areas have begun to focus on the perinatal characteristics of their populations. There is an overall lack of local level data which reflect the entire population of pregnant women and their infants in these counties. Such information is essential to determine the health-related needs of this vulnerable population.

This report uses information from the Oklahoma Pregnancy Risk Assessment Monitoring System (PRAMS) to address this lack of county level data and describes differences in perinatal conditions in Oklahoma and Tulsa counties compared to the rest of the state. Until recently, statewide estimates were used to evaluate the characteristics of women and infants in these areas; however, with several years of PRAMS data collected and the overall size of these counties, it has become possible to generate county-

specific estimates. The availability of local data for Oklahoma and Tulsa counties will allow a more accurate examination of pregnant women and their infants in these areas and, consequently, assist community-based agencies to promote the health and well-being of these populations on a local level.

In Oklahoma

- Tulsa County has the lowest percent of teens (< 20 years old) giving birth (12.0%) compared to Oklahoma County (16.5%) and the rest of the state (17.8%).
- There is, on average, a two-year difference in the age at first birth in Tulsa County (22 years) compared to the rest of the state (20 years).
- Compared to Oklahoma County and the rest of the state, women in Tulsa County are 1.5 times less likely to drop out of school before high school graduation.
- Over one-half (52.2%) of women in Tulsa County complete part or all of a college education compared to 46.8% in Oklahoma County and 37.5% in the rest of the state.
- One-quarter of women in Tulsa County (26.7%) live in poverty compared to 31.7% in Oklahoma County and over one-third (34.4%) of women in the rest of the state.
- Women in both Oklahoma and Tulsa counties are more likely to breastfeed their babies than women in the rest of the state; 62.6% (Tulsa Co.), 58.5% (OK Co.), and 50.1% (rest of state).
- More than one in ten women in Oklahoma (13.6%) and Tulsa (15.4%) counties do not have a working smoke alarm. Nearly one in four women (23.5%) in the rest of the state do not have a working smoke alarm in their homes.
- Women in Tulsa are the most likely to pay for prenatal care (PNC) and delivery services with insurance and the least likely to use Medicaid; the opposite is true in the rest of the state.

Methods

This study used data from the Oklahoma Pregnancy Risk Assessment Monitoring System (PRAMS) to examine possible differences among Oklahoma and Tulsa counties and the rest of Oklahoma. It presents frequency distributions and 95% confidence intervals (95% CI) for a variety of characteristics including demographic, socioeconomic, life experiences, and delivery of services. Statistical significance was determined using 95% CI.

Demographic Characteristics

A comparison of sociodemographic characteristics (e.g., age, education) in Oklahoma and Tulsa counties and the rest of the state provides information about the female residents who are having babies in Oklahoma.

Table 1 shows that Tulsa County has the lowest percent of teens (< 20 years old) giving birth (12.0%) compared to Oklahoma County (16.5%) and the rest of the state (17.8%). Not surprisingly, Tulsa also has the lowest percent of women who were less than 20 years old when they had their first baby. The median age at first birth was 21.1, 21.9, and 19.9 years of age for Oklahoma and Tulsa counties and the rest of the state, respectively (data not shown). There is, on average, a two-year difference in the age at first birth in Tulsa County compared to the rest of the state; this difference is statistically significant.

Compared to Oklahoma County and the rest of the state, women in Tulsa County are 1.5 times less likely to drop out of school before high school graduation. Over one-half (52.2%) of women in Tulsa County complete part or all of a college education compared to 46.8% in Oklahoma County and 37.5% in the rest of the state. Women outside of Oklahoma and Tulsa counties are the most likely to graduate from high school and the least likely to complete college.

Women in Tulsa County are the most likely to be married when their babies are born (77.9%) compared to Oklahoma County (70.7%) and the rest of the state (75.1%).

Oklahoma County has the highest proportion of black, Hispanic, and other minority women (primarily Asian) compared to Tulsa County and the rest of the state (Table 1). The majority of American Indians in Oklahoma reside outside of Oklahoma and Tulsa counties, and the distribution of births to these women are consistent with this finding.

Table 1: Demographic Characteristics of Women in Oklahoma and Tulsa Counties and the Rest of the State

Characteristic	Oklahoma County		Tulsa County		Rest of State	
	Col. %	95% CI	Col. %	95% CI	Col. %	95% CI
Age						
<=17 yrs	5.7	(3.9-7.5)	3.9	(2.3-5.5)	5.8	(4.2-6.8)
18-19 yrs	10.8	(8.6-12.9)	8.1	(5.9-10.3) ⁵	12.0	(10.6-13.4) ⁴
20-24 yrs	26.5	(23.6-29.2)	26.5	(23.4-29.6) ⁵	33.4	(31.6-35.2) ⁴
25-29 yrs	30.6	(27.7-33.5)	31.7	(28.5-34.8)	26.9	(25.3-28.5)
30-34 yrs	19.4	(17.0-21.7)	20.8	(18.1-23.5) ⁵	16.1	(14.7-17.5) ⁴
35+ yrs	7.0	(5.4-8.6)	9.0	(7.0-11.0) ⁵	5.8	(5.0-6.6) ⁴
Age at 1st Birth						
<=17	17.7	(14.6-20.8)	13.2	(10.3-16.1)	17.5	(15.7-19.3)
18-19 yrs	18.0	(15.1-20.9)	16.5	(13.5-19.7) ⁵	24.3	(22.2-26.2) ⁴
20+ yrs	64.3	(60.6-68.0) ⁵	70.3	(66.4-74.2)	58.2	(55.8-60.5) ³
Education¹						
<12 yrs	17.2	(14.3-20.1) ⁴	11.6	(9.1-14.1) ^{3,5}	18.2	(16.4-20.0) ⁴
12 yrs	36.0	(32.7-39.3) ⁵	36.2	(32.9-39.5) ⁵	44.3	(42.3-46.3) ^{3,4}
13-15 yrs	23.3	(20.4-26.2)	27.5	(24.4-30.6) ⁵	21.2	(19.6-22.8) ⁴
16+ yrs	23.5	(20.6-26.4) ⁵	24.7	(21.8-27.6) ⁵	16.3	(14.9-17.7) ^{3,4}
Marital Status²						
Married	70.7	(67.6-73.8) ⁴	77.9	(74.8-81.0) ³	75.1	(73.3-76.9)
Not Married	29.3	(26.2-32.4) ⁴	22.1	(19.0-25.2) ³	24.9	(23.1-26.7)
Race						
White	72.3	(68.8-75.8)	77.3	(73.7-80.8)	79.6	(77.6-81.6)
Black	16.9	(13.7-19.9) ^{4,5}	12.5	(9.6-15.4) ^{3,5}	4.6	(3.6-5.6) ^{3,4}
Indian	2.7	(1.5-3.9) ^{4,5}	6.2	(4.1-8.1) ^{3,5}	12.2	(10.6-13.8) ^{3,4}
Hispanic	5.0	(3.2-6.8)	2.7	(1.3-4.0)	2.5	(1.7-3.3)
Other	3.1	(1.7-4.5) ⁵	1.3	(0.3-2.3)	1.1	(0.7-1.4) ³

¹ Excludes women less than 19.
² Marital status at delivery.
³ Statistically significant difference from Oklahoma County.
⁴ Statistically significant difference from Tulsa County.
⁵ Statistically significant difference from Rest of State.

Socioeconomic Status

In addition to demographic characteristics, socioeconomic status is also an important component in assessing differences between communities. As shown in Table 2, women in Tulsa County are the most likely to report their household income came from a job or business (79.4%) compared to Oklahoma County (73.8%) and the rest of the state (73.3%). They are also the least likely to report receiving public assistance.

PRAMS is a population based survey of Oklahoma women with a recent delivery. A stratified sampling approach is used to select approximately 200 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 for this report reflect live births occurring between April 1988 and March 1995; sample size for Oklahoma County was 2,695 (65.3% response), for Tulsa County was 2,107 (71.2% response) and for the rest of the state was 6,948 (74.5% response). Improvements in data collection have improved these response rates over the course of the project. In the most recent year of PRAMS data collection presented in this report (April 1994-March 1995) the response rates were 75.6% (Oklahoma County), 79.8% (Tulsa County), and 82.4% (rest of the state).

Federal poverty levels (FPL) presented in Table 2 are generally representative of common ranges for determining public health assistance levels and coverage groups. In general, women whose families earn less than the poverty level (< 100% FPL) are provided government health insurance for prenatal care and delivery. Similarly, women falling between 100% and 185% of FPL are also eligible for the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC); however, they may not be eligible for complete health care. Women between 185% and 200% of FPL are generally representative of the working poor who typically have no health insurance coverage through their employer (uninsured) or are under-insured. Women above the 250% FPL are most typically covered by private or group insurance.

One-quarter of women in Tulsa County (26.7%) live in poverty compared to 31.7% in Oklahoma County and over one-third (34.4%) of women in the rest of the state. Women in both Oklahoma and Tulsa counties are significantly less likely than women in the rest of the state to live between 100% and 184% of poverty (22.0%, 22.5% and 31.1%, respectively). Women in these two counties are also significantly more likely than women in the rest of the state to live above 250% of poverty, with nearly two out of five Tulsa County residents (38.9%) reporting this level of income. Overall, women in Oklahoma and Tulsa counties are more likely than women in the rest of the state to live above poverty.

Table 2: Socioeconomic Status of Women in Oklahoma and Tulsa Counties and the Rest of the State

Socioeconomic Indicator	Oklahoma Co.		Tulsa Co.		Rest of State	
	Col.%	95% CI	Col.%	95% CI	Col.%	95% CI
Source of Income						
Job/Business	73.8	(70.7-76.9)	79.3	(76.5-82.3)	73.3	(71.5-75.1)
Public Assistance	23.5	(20.6-26.4)	18.6	(15.7-21.5) ⁵	25.0	(23.2-26.8) ⁴
Other	2.7	(1.5-3.9)	2.1	(0.9-3.3)	1.7	(1.1-2.3)
Federal Poverty Level ^{1,2}						
<100% FPL	31.7	(28.2-35.2)	26.7	(23.2-30.2) ⁵	34.4	(32.4-36.4) ⁴
100-184% FPL	22.0	(19.1-24.9) ⁵	22.5	(19.4-25.6) ⁵	31.1	(29.1-33.1) ^{3,4}
185-249% FPL	13.7	(11.3-16.1)	11.9	(9.4-14.4)	11.1	(9.7-12.5)
250+% FPL	32.6	(29.3-35.9) ⁵	38.9	(35.2-42.6) ⁵	23.4	(21.6-25.5) ^{3,4}

¹ In PRAMS, Federal Poverty Level is based on annual DHHS guidelines; the calculations are adjusted annually. In 1995, the FPL was \$15,150 for a family of four with an additional \$2,560 for each additional family member.

² There is an approximate non-response to the income question used to calculate FPL of 20 percent.

³ Statistically significant difference from Oklahoma County.

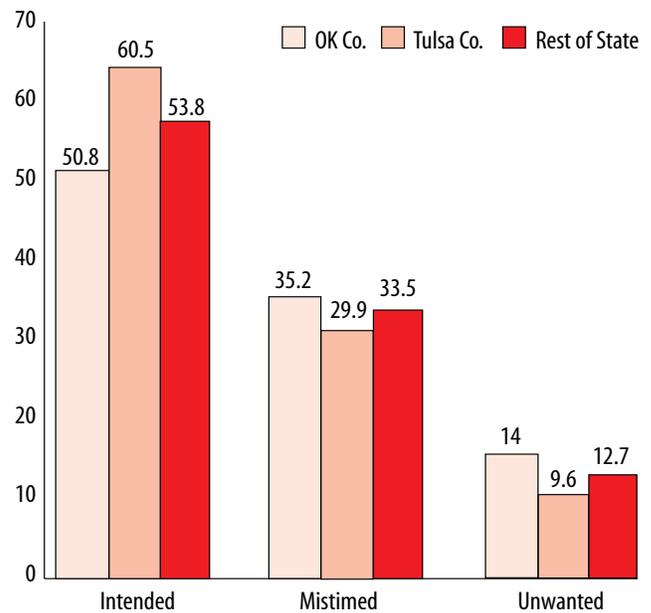
⁴ Statistically significant difference from Tulsa County.

⁵ Statistically significant difference from Rest of State.

Life Experiences

As shown in Figure 1, women residing in Oklahoma County are more likely than those in Tulsa County or the rest of the state to have an unintended pregnancy leading to birth; that is, the pregnancy was desired later (mistimed) or not at all (unwanted). In Oklahoma County, 49.2% of women had an unintended pregnancy compared to 39.5% in Tulsa County and 46.2% in the rest of the state.

Figure 1: Intention of Pregnancy



Several perinatal behaviors are examined in Table 3. There are no major differences among the three areas for most of the behaviors (smoking, drinking, weight gain and experience of violence in the 12 months prior to delivery). An interesting exception is breastfeeding; women in both Oklahoma and Tulsa counties are significantly more likely to breastfeed their babies than women in the rest of the state; 62.6% (Tulsa Co.), 58.5% (OK Co.), and 50.1% (rest of state).

Women in all three areas still need to achieve the Healthy People 2000¹ national target rates for breastfeeding after delivery and reductions in prenatal smoking, experience of physical abuse, and prenatal weight gain (Table 4).

Table 3: Healthy People 2000 National Goals

Life Experience	Healthy People 2000 Goal
Prenatal Smoking	3.4i Reduce cigarette smoking to a prevalence of no more than 10 percent among pregnant women.
Prenatal Drinking	14.10 Increase abstinence from tobacco use by pregnant women to at least 90 percent and increase abstinence from alcohol, cocaine, and marijuana by pregnant women by at least 20 percent.
Physical Violence	7.5 Reduce physical abuse directed at women by male partners to no more than 27 per 1,000 couples.
Prenatal Weight Gain	14.6 Increase to at least 85 percent the proportion of mothers who achieve the minimum recommended weight gain during their pregnancies.
Breastfeeding	2.11 Increase to 75 percent the proportion of mothers who breastfeed their babies in the early postpartum period and to at least 50 percent the proportion who continue breastfeeding until their babies are 5 to 6 months old.

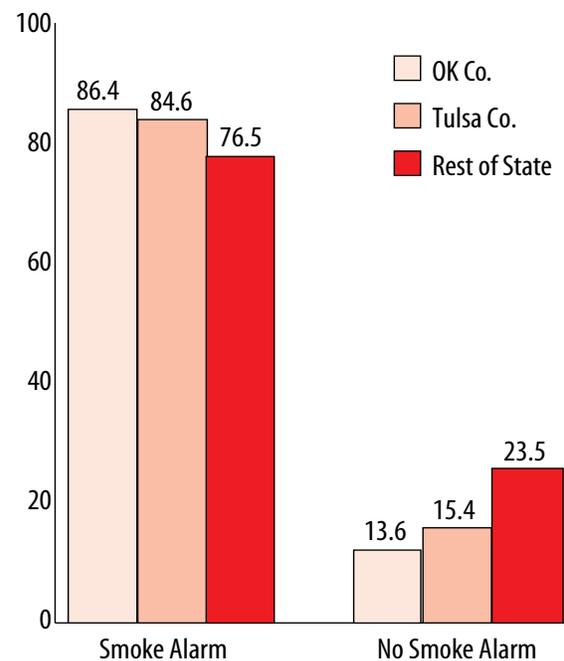
Table 4: Life Experiences in Oklahoma and Tulsa Counties and the Rest of the State

Life Experience	Oklahoma County Col.% 95% CI	Tulsa County Col.% 95% CI	Rest of State Col.% 95% CI
Prenatal Smoking ¹			
Yes	20.0 (17.2-22.7)	21.0 (18.1-23.9)	23.0 (21.2-24.8)
No	80.0 (77.3-82.7)	79.0 (76.1-81.9)	77.0 (75.2-78.7)
Prenatal Drinking ²			
Yes	9.0 (7.0-11.0)	9.8 (7.6-12.0)	6.2 (5.2-7.2)
No	91.0 (89.0-93.0)	90.2 (88.0-92.3)	93.9 (92.8-94.8)
Physical Violence ³			
Yes	4.7 (3.3-6.1)	5.7 (3.9-7.5)	6.4 (5.4-7.4)
No	95.3 (93.9-96.7)	94.3 (92.5-96.1)	93.6 (92.6-94.6)
Recommended Prenatal Weight Gain ⁴			
Less than	18.9 (16.2-21.6)	16.2 (13.5-18.9)	20.1 (18.3-21.8)
Within	42.2 (38.6-45.6)	42.7 (38.9-46.4)	40.1 (38.1-42.1)
More than	38.9 (35.6-42.2)	41.1 (37.3-44.8)	39.8 (37.4-44.8)
Breastfed Baby			
Yes	58.5 (55.2-61.8) ^{6,7}	63.6 (60.1-67.1) ^{5,7}	50.1 (48.1-52.1) ^{5,6}
No	41.5 (38.2-44.8) ⁷	36.4 (32.9-39.9) ⁷	49.9 (47.9-51.9) ^{5,6}

¹ Smoked cigarettes in the three months before delivery.
² Consumed alcohol in the three months before delivery.
³ Physically hurt by husband or partner in 12 months prior to delivery.
⁴ Recommended prenatal weight gain from National Academy of Sciences recommendation; it is based on pre-pregnancy weight.
⁵ Statistically significant difference from Oklahoma County.
⁶ Statistically significant difference from Tulsa County.
⁷ Statistically significant difference from Rest of State.

In addition to these behaviors, the presence of a working smoke detector in the home was examined (Figure 2) as a proxy for childhood injury prevention measures taken at home. Women in both Oklahoma and Tulsa counties are significantly more likely than women in the rest of the state to have a smoke alarm in their homes. In spite of this difference, more than one in ten women in these counties do not have a working smoke alarm (Oklahoma County: 13.6%; Tulsa County: 15.4%). Nearly one in four women (23.5%) in the rest of the state do not have a working smoke alarm in their homes.

Figure 2: Working Smoke Alarms in the Home in Oklahoma and Tulsa Counties and the Rest of the State



Prenatal Care and Delivery

Table 5 presents information on prenatal care and delivery services in Oklahoma and Tulsa counties and the rest of the state. Regarding entry into and location of prenatal care, there are no major differences among Oklahoma and Tulsa counties and the rest of the state. The only exception is women receiving prenatal care services from the Indian Health Service (IHS). Women in Oklahoma County are the least likely to receive IHS services (2.0%) compared to Tulsa County (4.4%) and the rest of the state (11.1%).

Differences among the three areas are more apparent when examining methods of payment for prenatal care and delivery services. Women in Tulsa County are the most likely to pay for prenatal care (PNC) and delivery services with insurance and the least likely to use Medicaid; the opposite is true in Oklahoma County and the rest of the state. Similar to location of PNC, higher proportions of women outside of Oklahoma and Tulsa counties use IHS to pay for prenatal care and delivery.

Table 5: Factors Related to Prenatal Care and Delivery in Oklahoma and Tulsa Counties and the Rest of the State

Factors	Oklahoma Co. Col. % 95% CI	Tulsa Co. Col. % 95% CI	Rest of State Col. % 95% CI
PNC Entry			
1st trimester	82.8 (80.3-85.3)	83.7 (80.9-86.4)	79.7 (78.1-81.3)
2nd/3rd trimester or No Care	17.2 (14.7-19.7)	16.3 (13.6-19.0)	20.3 (18.7-21.9)
PNC Location			
Hosp. Clinic	15.3 (12.6-17.8)	12.1 (9.7-14.4)	14.5 (13.1-15.9)
Health Dept ¹	10.6 (8.4-12.8)	10.9 (8.5-13.2)	8.1 (6.9-9.3)
Priv MD/HMO	65.6 (62.5-68.7) ⁵	69.5 (66.2-72.8) ⁵	59.7 (57.7-61.7) ^{3,4}
IHS	2.0 (1.0-3.0) ⁵	4.4 (2.8-6.0) ⁵	11.1 (9.9-12.3) ^{3,4}
Other	6.5 (4.9-8.1) ⁴	3.1 (1.9-4.3) ^{3,5}	6.6 (5.5-7.5) ⁴
PNC Payment			
Income Only	8.3 (6.5-10.0)	9.0 (7.0-11.0)	9.6 (8.4-10.8)
Insurance	54.3 (50.9-57.6)	59.5 (55.9-63.0)	41.0 (39.0-43.0)
IHS	1.5 (0.8-2.3)	4.5 (2.9-6.1)	13.0 (11.6-14.4)
Medicaid	33.3 (30.2-36.4)	26.3 (23.1-29.3) ⁵	34.6 (32.6-36.6) ⁴
Other	2.6 (1.4-3.8) ⁴	0.7 (0.1-1.3) ³	1.8 (1.2-2.4)
Delivery Payment			
Income Only	8.1 (6.2-9.8)	6.0 (4.4-7.6)	7.2 (6.2-8.2)
Insurance	54.1 (50.7-57.4) ⁵	60.1 (56.6-63.6)	42.4 (40.0-44.4) ^{3,4}
IHS	1.2 (0.6-1.8) ⁵	3.0 (1.8-4.2) ⁵	11.9 (10.7-13.1) ^{3,4}
Medicaid	35.1 (32.0-38.2)	29.9 (26.6-33.2) ⁵	37.0 (35.0-39.0) ⁴
Other ²	1.5 (0.5-2.5)	1.0 (0.2-1.8)	1.5 (0.9-2.1)

¹ Health Department may include community clinics.

² Cell size less than 20.

³ Statistically significant difference from Oklahoma County.

⁴ Statistically significant difference from Tulsa County.

⁵ Statistically significant difference from Rest of State.

Discussion

There are overall differences in demographic and socioeconomic characteristics as well as perinatal conditions among Oklahoma County, Tulsa County, and the rest of the state. Influences on the differences among the three areas may include availability of services, resources, transportation, and community norms. One of the most striking differences is the presence of a working smoke alarm in the household. Oklahoma's rate of unintentional injury deaths among children aged 1-4, which were not motor vehicle related, is over 1.6 times higher than the national average (data not shown)².

Fires are the leading cause of non-vehicular unintentional injury death among very young Oklahomans. It may be that, although household fire prevention programs exist throughout the state, they receive more media exposure in the metropolitan counties of Oklahoma and Tulsa. In addition, these differences may reflect differences in housing codes and regulations. It is also likely that the differing socioeconomic status in these areas influences the presence of a working smoke detector in the home as well as other perinatal differences found in this report.

PRAMS is a unique source of population-based data on both a county and state level; however, it is not without limitations. The PRAMS survey was developed to provide state-specific population based data on the perinatal health and outcomes of women in Oklahoma delivering a baby; its sampling methodology was not designed to provide county level information. However, when sampling weights were tested to determine accuracy of reporting county level information, weighted estimates were found to be accurate for Oklahoma and Tulsa counties. While it would be ideal to use this report as a model for reporting findings for all 77 of Oklahoma's counties, the size of these counties makes this type of analysis impossible. There are, however, other sources of county level information which are available to those organizations interested in conducting a community-based assessment.

It is hoped that the findings from this report will be incorporated into already ongoing community assessment activities in Oklahoma and Tulsa counties. The Oklahoma State Department of Health (OSDH) and its local affiliates can assist communities in their assessment efforts through a variety of activities, including: 1) defining community health problems and their risk factors; 2) monitoring the community for disease and injury; 3) assuring the availability of prevention and intervention services; and 4) implementing policy based on surveillance. OSDH is committed to providing this type of assistance to local communities through development and maintenance of partnerships with public and private community organizations committed to advancing the health of the community.

Data for Community Assessment

OSDH has a wide variety of resources available for community assessment, including information regarding:

- Births and Deaths in the state
- Health related behaviors
- Utilization of health services
- Injuries - intentional and unintentional
- Diseases in the state (e.g., AIDS, hepatitis)
- Immunizations
- HIV/STD

Resources for Community Assessment

In addition, OSDH has available several resources related to conducting community assessment, including:

- APEX
- CAN-DO

For more information, please contact the office of Maternal and Child Health Assessment and Systems Development (405) 271-6761 or access the OSDH Web site on the Internet:

<http://www.health.state.ok.us>

References

1. National Center for Health Statistics, Healthy People 2000 Review, 1992. Hyattsville, Maryland: Public Health Service. 1993.
2. The 1991-95 annual rate of unintentional injury death which was not motor vehicle related for Oklahoma children 1-4 was 16.2 per 100,000; the U.S. rate for 1994 was 9.9 per 100,000.

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Jerry R. Nida, M.D., M.P.H.
Commissioner of Health

Sara Reed DePersio, M.D., M.P.H.
Deputy Commissioner
Personal Health Services

Richard R. Lorenz, M.S.P.H.
Deputy Chief, MCH Assessment and
Systems Development

Emily DeCoster, M.P.H.
Director, PRAMS Program

Wanda Thomas
Surveillance Manager, PRAMS Program

Edd Rhoades, M.D., M.P.H.
Chief, Maternal and Child Health Service

Newsletter Design: Shauna Schroder

PRAMS Program
MCH Assessment and Systems Development
Oklahoma State Dept of Health
1000 NE Tenth Street
Oklahoma City, OK 73117-1299
(405) 271-6761

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