

Children First, Oklahoma's Nurse-Family Partnership

Annual Report, State Fiscal Year 2011

Enrollment Criteria



Women participating in the C1 program must:

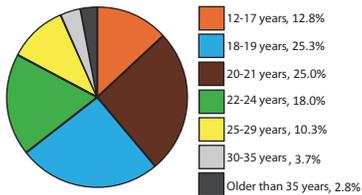
- Be expecting their first child;
- Have a household income at or below 185% of the Federal Poverty Level; and
- Be less than 29 weeks pregnant at the time of enrollment.

Currently, Oklahoma ranks among the worst in the nation (43rd) in terms of overall child health and well-being.¹ This ranking is due to the state's poor performance in areas including family and social environment, physical environment and safety, economic circumstances, health habits and access to medical care. Children First (C1), Oklahoma's Nurse-Family Partnership (NFP) program, strives to improve health and birth outcomes in the state by addressing families' needs in these areas in order to:

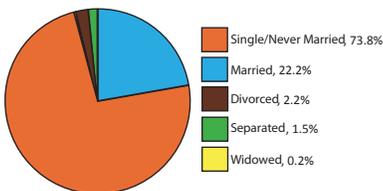
- Help women alter their health-related behaviors, including reducing the use of cigarettes, alcohol and illegal drugs;
- Help mothers have normal birth weight babies that are carried to term;
- Help parents provide more responsible and competent care for their children; and
- Help parents plan future pregnancies, continue their education and find work to reduce long term social service dependency.

Additionally, C1 nurses address several key issues targeted in the Oklahoma Children's Health Plan² and the Oklahoma Health Improvement Plan (OHIP)³ such as immunization coverage, child maltreatment, injury prevention, smoking cessation and infant and early childhood mental health.

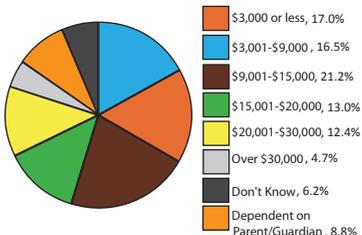
Age of C1 Clients at Program Intake, SFY 2011



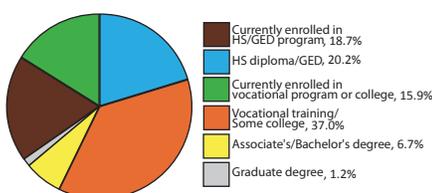
Marital Status of C1 Clients at Program Intake, SFY 2011



Annual Income of C1 Clients at Program Intake, SFY 2011



Educational Attainment of C1 Clients at Program Intake, SFY 2011



Children First, Oklahoma's Nurse-Family Partnership

C1 is a nurse home visitation program utilizing the evidence-based Nurse-Family Partnership (NFP) model. This model is designed to address and minimize the risk factors known to contribute to child maltreatment, reduce the cost of long-term social services and benefit multiple generations.⁴ Specially trained registered nurses make regular home visits to low-income women expecting their first child. Services begin before the 29th week of pregnancy and can continue until the child's second birthday. During home visits, nurses provide brief health assessments,⁵ child growth and development evaluations, nutrition, safety and parenting education, relationship information and links to services such as child care, education and job training. While the nurse home visitor works with the client's doctor, C1 services are not intended to replace the care of the physician.

Program Outcomes

The C1 program serves clients who demonstrate characteristics known to contribute to poor health and birth outcomes, as well as instances of child maltreatment, in an effort to encourage participating families to achieve the healthiest lifestyles possible. The typical client entering the C1 program is single, has an average yearly household income under \$15,000, has at least a high school education or GED and is under 21 years of age. This population is at higher risk for poor health due to things such as a lack of access to medical care, substandard housing, poor nutrition and physical activity choices, lack of social support and poverty. The Robert Wood Johnson Foundation recently reported that children in poor families are nearly seven times as likely to be in worse health as those in higher income families.⁶

Immunizations

Immunizations are one of the most cost effective ways to prevent childhood illness and hospitalization from preventable diseases and associated productivity losses due to parents missing work to care for sick children. In 2010, the state's immunization coverage for children at 24 months of age was 70.8%.⁷ This can be significantly increased to 80-90% for the state if children receive just one more dose of DTaP by 24 months.⁸

1 Annie E. Casey Foundation. KIDS COUNT Data Book. KIDS COUNT Overall Rank (Number), 2011. Obtained from http://datacenter.kidscount.org/data/acrossstates/Map.aspx?loc=2&map_colors=Solid&dtm=10657&ind=137&tf=867.

2 Oklahoma State Department of Health. Oklahoma Children's Health Plan: Keeping Kids Healthy, 2011-2014. Obtained from <http://www.ok.gov/health/documents/OHIP-ChildrensHealthPlan.pdf>.

3 Oklahoma State Department of Health. Oklahoma Health Improvement Plan: A Comprehensive Plan to Improve the Health of All Oklahomans, 2011-2014. Obtained from <http://www.ok.gov/health/documents/OHIP-viewing.pdf>.

4 Nurse-Family Partnership. Oklahoma Children First Program Evaluation Report 7, September 24, 2010.

5 C1 services are not intended to replace the care of a physician/obstetrician.

6 Center on Social Disparities in Health. The Social Determinants of Health and Infectious Disease, October 19, 2010. Obtained from <http://www.cdc.gov/socialdeterminants/docs/Braveman-SDOH-Symposium-101910-508.pdf>.

7 Annie E. Casey Foundation. KIDS COUNT Data Book. 2-year-olds who were immunized (Percent), 2010. Obtained from <http://datacenter.kidscount.org/data/acrossstates/Map.aspx?loc=2&ind=19&dtm=281&tf=38#>.

8 Oklahoma State Department of Health. Oklahoma Children's Health Plan: Keeping Kids Healthy, 2011-2014. Obtained from <http://www.ok.gov/health/documents/OHIP-ChildrensHealthPlan.pdf>.

In SFY 2011, 90.7% of all children participating in C1 (birth to 24 months) were up-to-date on their vaccination schedules at all times. At 24 months of age, 88.0% of C1 children were fully immunized.

Infant & Early Childhood Mental Health

Nearly 1 in 5 (18%) Oklahoma children have one or more emotional, behavioral or developmental conditions.⁹ Early identification of such conditions is imperative to minimizing their impact. Currently, less than 50% of children with disabilities are being identified as having a problem before starting school, by which time significant delays may have already occurred and opportunities for treatment missed.¹⁰

C1 nurses routinely utilize the Ages & Stages Questionnaires (ASQ) to assess child development in communication, gross and fine motor functions, problem solving and social and emotional development. Assessments are performed every 2 months, and when delays are identified, parents are referred to services such as SoonerStart (early intervention), child development specialists and Child Guidance for further evaluation and assistance. In SFY 2011, C1 nurses performed 28,053 ASQ screenings and made 223 referrals to local services.

Abuse & Neglect

A child is abused or neglected every hour in Oklahoma,¹¹ and in calendar year 2009, Oklahoma ranked 37th in the nation for child maltreatment reporting with a rate of 48 per 1,000 children reported as suspected victims.¹² Child maltreatment has lasting effects on society with higher prevalences of substance abuse, smoking, obesity and mental health conditions among those who are victims.¹³

During SFY 2011, C1 nurses made 68 reports of suspected maltreatment to the Oklahoma Department of Human Services (OKDHS). The majority of these reports were for neglect (69.1%), generally involving domestic violence (47.1%) or parental substance abuse (20.6%).

Smoking Cessation

One in four Oklahomans report tobacco use (25.4%) making the state 48th in the nation.¹⁴ As studies have shown, babies born to mothers who smoke during pregnancy are at greater risk of being born prematurely or underweight, being born with birth defects and experiencing lifelong disabilities.¹⁵

Frequency of Smoking by C1 Mothers, SFY 2011

	Smoked everyday	Smoked some days	Did not smoke at all
Intake	12.9%	5.3%	81.8%
36 weeks pregnant	7.9%	2.2%	89.9%
12 months postpartum	18.7%	3.8%	77.5%

Number of Cigarettes Smoked in Last 48 hours, SFY 2011

	Smoked 0 cigarettes	Smoked 1-9 cigarettes	Smoked 10-19 cigarettes	Smoked 20 or more cigarettes
Intake	66.9%	17.3%	7.9%	6.1%
36 weeks pregnant	77.2%	13.1%	5.1%	4.5%
12 months postpartum	53.3%	18.2%	10.7%	17.8%

*Percentages represent the number of completed Health Habits forms during SFY 2011. Percentages do not necessarily include the same clients at each time frame, only those that had a completed form for that time frame during SFY 2011.

9 Annie E. Casey Foundation. KIDS COUNT Data Book. Children who have one or more emotional, behavioral, or developmental conditions (Percent), 2007. Obtained from <http://datacenter.kidscount.org/data/acrossstates/Rankings.aspx?ind=6031>.

10 National Center on Birth Defects and Developmental Disabilities. Developmental Screening, September 20, 2005. Obtained from <http://www.cdc.gov/ncbddd/child/devtool.htm>.

11 Children's Defense Fund. Children in Oklahoma, January 2011. Obtained from <http://www.childrensdefense.org/child-research-data-publications/data/state-data-repository/cits/2011/children-in-the-states-2011-oklahoma.pdf>.

12 Annie E. Casey Foundation. KIDS COUNT Data Book. Children who are subject to an investigated report (Rate per 1,000), 2009. Obtained from http://datacenter.kidscount.org/data/acrossstates/Map.aspx?loc=2&map_colors=Solid&dtm=12955&ind=6220&tf=38.

13 Relationship of Childhood Abuse and Household Dysfunction to Many of the Leading Causes of Death in Adults: The Adverse Childhood Experiences (ACE) Study. Vincent J Felitti, Robert F Anda, Dale Nordenberg, David F Williamson, Alison M Spitz, Valerie Edwards, Mary P Koss, James S Marks. American Journal of Preventive Medicine, 1 May 1998; 14(4), 245-258. Obtained from [http://www.ajpmonline.org/article/S0749-3797\(98\)00017-8/abstract](http://www.ajpmonline.org/article/S0749-3797(98)00017-8/abstract).

14 United Health Foundation. Prevalence of Smoking, 2010. Obtained from <http://www.americashealthrankings.org/Measure/2010/List%20All/Prevalence%20of%20Smoking.aspx>.

15 March of Dimes. Smoking During Pregnancy, April 2010. Obtained from http://www.marchofdimes.com/pregnancy/alcohol_smoking.html.

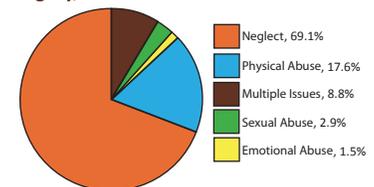
Child Abuse and Neglect



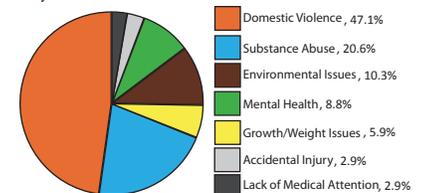
Child maltreatment costs the U.S. more than \$103.7 billion each year in direct and indirect costs, including hospitalization, mental health care, child welfare, juvenile delinquency and special education.*

*Prevent Child Abuse America. Total Estimated Cost of Child Abuse and Neglect in the United States, 2007. Obtained from http://www.preventchildabuse.org/about_us/media_releases/pcaa_pew_economic_impact_study_final.pdf.

Child Maltreatment Reported by C1 Nurses by Category, SFY 2011



Child Maltreatment Reported by C1 Nurses by Issue, SFY 2011



Smoking



Oklahoma mothers most at risk for smoking during pregnancy:*

- Are less than 20 years of age;
- Have less than a high school education;
- Are Caucasian or American Indian;
- Receive some type of Medicaid benefit(s); and
- Have unintended pregnancies.

*Oklahoma State Department of Health. Maternal Smoking. PRAMS-GRAM, 2006; 9(4). Obtained from http://www.ok.gov/health/documents/PRAMS_Maternal%20Smoking_06.pdf

C1 works with mothers during pregnancy to quit smoking or reduce the number of cigarettes smoked per day. Mothers who reported smoking cigarettes during SFY 2011 reduced both the frequency of smoking and number of cigarettes smoked during the pregnancy period. At program intake, 18.2% of mothers reported smoking compared to 10.1% at 36 weeks gestation.

Infant Mortality

Oklahoma ranks 45th nationally with an infant mortality rate of 8.5 deaths/1,000 live births.¹⁶ Complications related to premature birth and low birth weight are the second leading cause of death for children under one year, surpassed only by congenital malformations and abnormalities.¹⁷ This is particularly true for certain racial/ethnic groups, which generally experience higher rates of infant death when compared to their Non-Hispanic/White counterparts.

C1 nurses serve clients who already exhibit characteristics which make them at higher risk for worse birth outcomes than the general population. Throughout the program, nurses advise pregnant mothers about factors that may cause preterm or underweight births, such as smoking, drug and alcohol use, poor nutrition and lack of prenatal care. During SFY 2011:

- 88.5% of C1 mothers received adequate prenatal care (10 or more visits);
- 89.1% of C1 babies were carried to term (37 or more weeks);
- 90.0% of C1 babies were born at normal birth weights (more than 5lb. 9oz.); and
- 90.8% of C1 mothers did not have a sexually transmitted infection (STI) during her pregnancy.

Additionally, data indicates the infant mortality rate among C1 babies was 4.5/1,000 live births.¹⁸ For further data associated with program outcomes, see Current Health Status table on page 6.

Injury Prevention

The leading causes of child death in Oklahoma are motor vehicle crashes (38%) and drowning (9%). Children under one year of age die most often in motor vehicle crashes, while children under 2 years of age are most at risk of death due to accidental drowning, occurring most frequently in swimming pools, bathtubs and ponds.^{19,20,21}

C1 continually educates parents on car seat usage and home safety, including water danger, throughout the infancy and toddler periods. During SFY 2011, nearly all C1 mothers had an age appropriate car seat and reported always using the car seat while driving. Nearly all C1 mothers also report exercising appropriate water safety, including never leaving children unattended in bathtubs; near toilets, buckets of water or other containers; in or near ponds, lakes or pools; or leaving children supervised by a sibling or other child while in the bathtub.

Infant Mortality

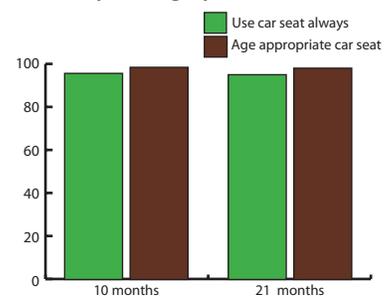


Risk factors* associated with preterm and low birth weight births include:

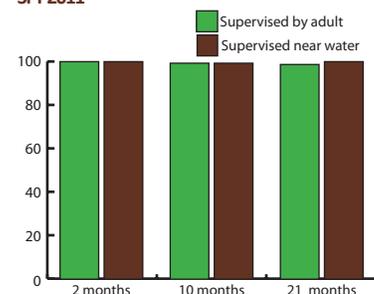
- low household income;
- lack of prenatal care;
- lack of education;
- Inadequate maternal weight gain;
- Sexually transmitted infection (STI) and urinary tract infection (UTI);
- Smoking; and
- Drug and alcohol use.

*March of Dimes. Low Birth Weight. May 2008. Obtained from http://www.marchofdimes.com/medicalresources_lowbirthweight.html.

Child Safety Seat Usage by C1 Mothers, SFY 2011



Bathtub Water Safety Practices of C1 Mothers, SFY 2011



16 Annie E. Casey Foundation. KIDS COUNT Data Book. Oklahoma State Profile, 2010. Obtained from http://datacenter.kidscount.org/Data-book/2011/OnlineBooks/ForMedia/StateProfiles/KCDB2011_profiles_OK_FINAL-rev.pdf.

17 Mathews, T.J., MacDorman, M.F. Infant Mortality Statistics from the 2004 Period Linked Birth/Infant Death Data Set. National Vital Statistics Reports, 2 May 2007; 55(14). Obtained from http://www.cdc.gov/nchs/data/nvsr/nvsr55/nvsr55_14.pdf.

18 Carabin, H. et al. Does participation in a nurse home visitation programme reduce the frequency of adverse perinatal outcomes in first-time mothers? Pediatric and Perinatal Epidemiology, 2005, 10: 194-205.

19 Oklahoma State Department of Health. Oklahoma Children's Health Plan: Keeping Kids Healthy, 2011-2014. Obtained from <http://www.ok.gov/health/documents/OHIP-ChildrensHealthPlan.pdf>.

20 Oklahoma State Department of Health, Injury Prevention Service. Childhood Drowning, April 2007. Obtained from http://www.ok.gov/health/documents/Drown_Children.pdf.

21 Oklahoma State Department of Health, Injury Prevention Service. Motor Vehicle Crash Injuries among Children and Car Seat Use, April 2007. Obtained from http://www.ok.gov/health/documents/mvc_carseats.pdf.

Typical Client



The typical C1 mother:

- Is single and has never been married;
- Is White/Non-Hispanic;
- Is less than 21 years old;
- Has a household income less than \$15,000 per year; and
- Has at least a high school education or GED.

Required Reporting:

Demographics

In SFY 2011, the age of C1 clients ranged from 12-42 years of age. At the time of program enrollment, 38.1% of clients were 19 years old or younger, 42.9% were between the ages of 20-24, 10.3% were between 25-29 years of age, and 6.5% were 30 years or older.

Nearly three-fourths (73.8%) of C1 clients were single at the time of program enrollment in SFY 2011. Less than one-third (22.2%) were married, 3.7% were divorced or separated and 0.3% were widowed.

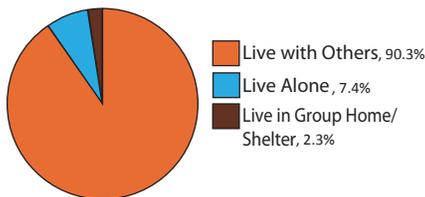
Of those clients who enrolled in the C1 program during SFY 2011, 90.3% had a household that included someone other than themselves. This number includes those who lived with a parent, significant other/partner or other relative. Less than 10% (7.4%) lived alone and 2.3% reported living in a group home or shelter.

Referrals

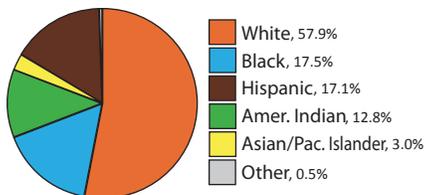
During SFY 2011, C1 nurses made 186 referrals to pregnant women who were not eligible to enroll in Children First.

Referrals Given to Ineligible Families		
Office of Child Abuse Prevention (Start Right Program)	80	3.8%
Other	80	3.8%
Oklahoma Parents as Teachers (OPAT)	10	0.5%
Child Guidance	9	0.4%
Early Headstart	7	0.3%
No referral given	1,910	91.1%

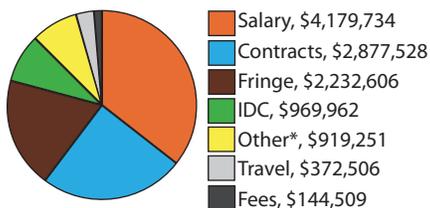
Household Composition of C1 Mothers, SFY 2011



Race of C1 Mothers, SFY 2011

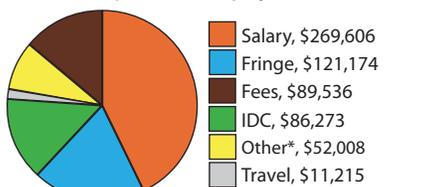


Total Program Expenditures, SFY 2011



*Includes Data/Communications, Worker's Comp, Motorpool, Supplies and Allocation of Agency Programmatic Costs

Central Office (Administration) Expenditures, SFY 2011



*Includes Data/Communications, Worker's Comp, Motorpool, Supplies and Allocation of Agency Programmatic Costs

Accounting of Administrative Expenditures

The C1 program is funded primarily through state appropriated dollars. In addition to state funding, C1 nurses receive reimbursement from Medicaid for services performed during visits, which is used to supplement program funding.

During SFY 2011, the C1 program operated on a budget of \$11,703,479.²² This amount reflects state appropriated funds and county millage (\$9,541,885) and Medicaid reimbursement (\$2,161,594) used to support the program. Of the total \$11.7 million, \$629,813 was used to fund Central Office activities including program evaluation, technical assistance, professional development for program nurses and other administrative costs.

The average cost per child participating in C1 during SFY 2011 was \$3,236.

²² Amount reflects validated costs.

County Data Chart, SFY 2011

County	Completed Visits	Families Served	Eligible Referrals	New Enroll-ees	Births	Graduates	En-roll-ment Rates
Adair	-	-	-	-	-	-	-
Alfalfa	30	2	1	2	1	-	200.0
Atoka	173	20	43	10	6	4	23.3
Beaver	5	5	-	-	-	-	-
Beckham	17	4	46	-	1	1	-
Blaine	337	27	29	13	10	6	44.8
Bryan	851	127	112	81	22	3	72.3
Caddo	268	30	28	13	12	3	46.4
Canadian	865	67	95	28	26	6	29.5
Carter	745	85	81	53	16	9	65.4
Cherokee	768	69	28	31	26	5	110.7
Choctaw	352	33	25	13	10	-	52.0
Cimarron	-	-	-	-	-	-	-
Cleveland	2,102	215	334	89	48	39	26.6
Coal	255	24	17	7	6	3	41.2
Comanche	141	42	83	24	6	2	28.9
Cotton	13	3	4	3	1	-	75.0
Craig	256	26	17	9	9	9	52.9
Creek	471	54	34	32	12	3	94.1
Custer	374	27	47	14	11	3	29.8
Delaware	439	29	30	8	6	2	26.7
Dewey	-	-	-	-	-	-	-
Ellis	-	-	-	-	-	-	-
Garfield	1,032	124	150	67	26	8	44.7
Garvin	260	42	36	28	7	6	77.8
Grady	303	29	44	10	11	1	22.7
Grant	-	-	4	-	-	-	-
Greer	40	8	14	6	2	-	42.9
Harmon	24	3	8	-	-	1	-
Harper	17	3	5	1	-	1	20.0
Haskell	33	5	24	3	1	-	12.5
Hughes	24	7	17	7	-	-	41.2
Jackson	456	56	111	32	11	3	28.8
Jefferson	85	9	12	2	2	2	16.7
Johnston	287	28	29	13	4	3	44.8
Kay	329	32	90	12	10	2	13.3
Kingfisher	626	61	41	23	18	13	56.1
Kiowa	31	5	16	3	-	2	18.8
Latimer	198	19	34	10	7	-	29.4

County	Completed Visits	Families Served	Eligible Referrals	New Enroll-ees	Births	Graduates	En-roll-ment Rates
Le Flore	894	83	126	43	15	15	34.1
Lincoln	585	48	66	16	17	5	24.2
Logan	700	99	137	61	15	10	44.5
Love	78	13	20	11	1	1	55.0
McClain	413	35	47	11	5	9	23.4
McCurtain	381	44	39	35	8	1	89.7
McIntosh	202	22	47	15	6	1	31.9
Major	70	8	9	2	2	2	22.2
Marshall	263	32	38	17	7	4	44.7
Mayer	31	10	22	5	1	-	22.7
Murray	187	26	5	8	5	3	160
Muskogee	907	97	40	37	21	12	92.5
Noble	99	15	13	5	3	5	38.5
Nowata	-	-	-	-	-	-	-
Okfuskee	22	2	11	1	-	1	9.1
Oklahoma	4,249	492	523	236	145	92	45.1
Okmulgee	245	22	50	7	9	2	14.0
Osage	11	3	3	2	-	-	66.7
Ottawa	717	76	42	31	20	9	73.8
Pawnee	-	-	1	-	-	-	-
Payne	766	88	118	45	25	13	38.1
Pittsburg	81	20	38	21	1	-	55.3
Pontotoc	11	3	5	-	1	-	-
Pottawatomie	806	84	121	37	19	6	30.6
Pushmataha	66	8	15	5	2	-	33.3
Roger Mills	15	1	1	-	-	-	-
Rogers	812	90	84	45	25	9	53.6
Seminole	294	35	62	19	10	1	30.6
Sequoyah	3	3	4	4	-	-	100.0
Stephens	327	28	22	-	16	-	-
Texas	434	37	60	21	21	1	35.0
Tillman	38	5	31	2	1	-	6.5
Tulsa	7,598	686	257	280	212	103	108.9
Wagoner	-	-	-	-	-	-	-
Washington	368	44	56	17	11	6	30.4
Washita	-	-	4	-	-	-	-
Woods	56	11	19	6	4	-	31.6
Woodward	281	26	43	11	8	1	25.6
Total	34,217	3,616	3,868	1,703	964	452	44.0

Current Health Status

Because C1 serves a very specific population, it is difficult to compare program outcomes to state or national rates. State and national data reference the entire population while C1 only serves a portion of low-income mothers who are pregnant for the first time. These C1 mothers exhibit risk factors indicating they are expected to have worse health outcomes than the general population. With this in mind, one may conclude the program is successful in improving maternal and child health if outcomes reach or exceed averages for the general population.

The table below is not intended to act as a true comparison group, it simply provides a snapshot of current health conditions and serves as a guide for possible future program quality improvement.

Current Health Status, SFY 2011

Health Indicator	C1 Program Rate	State Rate	State Ranking*	Healthy People 2020 Goal
Immunizations <i>children receiving all recommended vaccinations at 24 months of age</i>	88.0%	77.9%	18 th	80.0%
Smoking <i>adults 18 years and older who self-report smoking during and after pregnancy</i>	10.1% (at 36wks gestation) 22.5% (after birth)	11.7% (during pregnancy) 25.4% (general population)	48 th	1.4% (during pregnancy) 12% (general population)
Infant Mortality <i>infants less than 1 year of age who die per 1,000 live births</i>	4.5/1,000	8.3/1,000	44 th	6.0/1,000
Low Birth Weight <i>infants born weighing less than 2,500 grams (5.5 lbs.)</i>	10.0%	8.2%	25 th	11.4%
Preterm Births <i>infants delivered before 37 weeks gestation</i>	10.9%	13.5%	37 th	9.2%
Early Prenatal Care <i>mothers receiving prenatal care during the first trimester</i>	88.5%	76.4%	30 th	77.9%
Breastfeeding <i>mothers who initiate and continue breastfeeding between birth and 12 months</i>	82.1% (ever) 29.1% (6mo) 12.3% (12mo)	67.5% (ever) 36.1% (6mo) 17.9% (12mo)	14 th (ever) 11 th (6mo) 11 th (12mo)	81.9% (ever) 60.6% (6mo) 34.1% (12mo)
<small>State immunization data obtained from the Oklahoma Children's Health Plan: Keeping Kids Healthy, 2011-2014. State smoking data during pregnancy obtained from OK2SHARE; state smoking data for the general population obtained from America's Health Rankings 2010. Program infant mortality rate is 2004 data as reported in the article "Does participation in a nurse home visitation programme reduce the frequency of adverse perinatal outcomes in first-time mothers?" Pediatric and Perinatal Epidemiology, 2005, 10: 194-205. State breastfeeding data obtained from the Centers for Disease Control and Prevention's Breastfeeding Report Card, 2011; State ranking obtained from Kaiser Family Foundation, statehealthfacts.org. *America's Health Rankings, 2010. United Health Foundation. Obtained from http://www.americashealthrankings.org/.</small>				

This report is submitted in compliance with Oklahoma Statute 63-1-110.1 by:
 Terry Cline, Ph.D., Commissioner of Health
 Stephen W. Ronck, M.P.H., Deputy Commissioner, Community and Family Health Services
 Annette Wisk Jacobi, J.D., Chief, Family Support and Prevention Service
 Mildred Ramsey, RN, M.P.H., Director, Children First
 Data: Miriam McGaugh, Ph.D., Jennifer Han, Ph.D.
 Content and Layout: Sarah Ashmore, B.A.