

Running the Numbers

*A Periodic Feature to Inform North Carolina Healthcare Professionals
About Current Topics in Health Statistics*

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2002 North Carolina Live Births Attended by Certified Nurse Midwives

Deliveries attended by a Certified Nurse Midwife (CNM) are increasing rapidly in the United States and in North Carolina. In 2002, there were 307,527 CNM-attended live births in the United States, accounting for 7.6% of all live births.¹ Since 1983 when the North Carolina legislature passed the "Midwifery Practice Act" making CNMs legal birth attendants, the percentage of resident live births attended by CNMs has risen dramatically. In 1983, CNMs attended less than 2% of all live births; by 2002 CNM-attended births had risen to 9.2%, or more than 10,800 births in the year (Figure 1).

Table 1 shows demographic characteristics, risk factors, and birth characteristics for CNM-attended deliveries compared to all North Carolina resident live births.

Demographic Characteristics

Mothers with CNM attendants were more likely to be unmarried, have less than a high school education, and to have received WIC (a program which provides nutritional assistance to low-income mothers) while pregnant. Under Title XIX of the Social Security Act, state Medicaid programs are required to cover CNM services. In 2002, 43% of CNM-attended births in the state were covered by Medicaid, compared to 42% of all live births. Women whose delivery was attended by a CNM were slightly less likely to be of a racial minority and a little more likely to be a resident of a rural region. This may be related to the fact that CNM-attended deliveries were more prevalent in the Western portion of the state where the minority population is smaller and the rural population is larger.

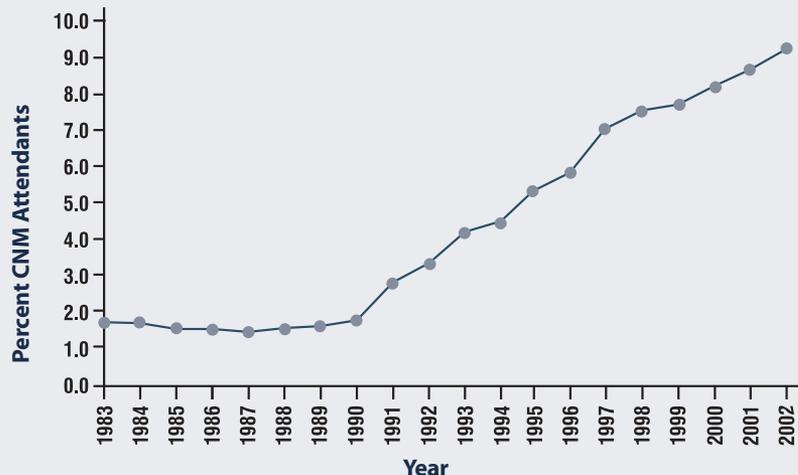
Risk Factors

Mothers with CNM birth attendants were more likely to report smoking during pregnancy and receiving late (after first trimester) or no prenatal care, compared to all live births. In addition, women attended by CNMs were more likely to give birth outside a hospital setting (2.5% vs. 0.5% for all live births). CNM-attended deliveries were less likely to have medical risk factors recorded on the birth certificate (27%) compared with all live births (30%). In addition, CNM-attended deliveries were much less likely to involve twins, triplets, or other multiple births.

Birth Characteristics

Nearly all CNM-attended births (99%) were vaginal deliveries compared to 73% of all North Carolina live births. CNMs used obstetrical procedures such as ultrasound, electronic fetal monitoring, or stimulation of labor to aid delivery at about the same rate as other attendants (97-98%). Approximately 28% of CNM-attended deliveries had one or more labor or delivery complications reported on the birth certificate compared to 36% of all live births. Infants delivered by CNMs were less likely to be of low birth weight (less than 2500 grams). In 2002, 4.3% of

Figure 1.
1983-2002 North Carolina Resident Births: Percent with Certified Nurse Midwife Attendants



CNM-delivered babies were low birth weight, compared to 9.0% of all live births. This is likely to be related to their lower medical-risk clientele.

It should be noted that the quality of the attendant data on the North Carolina birth certificate has not been assessed. CNMs have expressed uncertainty regarding the validity of the coding of the delivery attendant on the birth certificate. A survey conducted in 1993 by the American College of Nurse Midwives found that 6% of the deliveries CNMs attended were not attributed to them.² Also, continuity of care cannot be assessed from the birth certificate attendant data. For example, a woman may have received all of her prenatal care with a CNM, but if a labor complication led to a cesarean section, the delivery would be attributed to a physician. Thus, some poor birth outcomes associated with delivery complications may be recorded as physician-attended deliveries, even though a CNM provided the prenatal care.

Table 1.
2002 North Carolina CNM-Attended and Total Resident Live Births by Demographic Characteristics, Risk Factors, and Birth Characteristics.

	CNM Attendant		Total Live Births	
	Number	Percent	Number	Percent
Total Births	10,840	9.2%	117,307	100.0%
Demographic Characteristics:				
Minority race	2,775	25.6%	32,190	27.4%
Hispanic	1,410	13.0%	15,063	12.8%
Maternal age less than 18	527	4.9%	4,890	4.2%
Less than a high school education	2,728	25.2%	26,652	22.7%
Medicaid	4,704	43.4%	48,833	41.6%
Received WIC during pregnancy	4,899	45.2%	45,820	39.1%
Resident of rural region	6,141	56.7%	64,235	54.8%
Unmarried	4,035	37.2%	40,646	34.6%
Risk Factors:				
Maternal medical risk factors ^a	2,954	27.3%	35,179	30.0%
Mother smoked	1,603	14.8%	15,440	13.2%
Late/no prenatal care	1,915	17.7%	18,236	15.5%
Delivered outside a hospital	267	2.5%	540	0.5%
Multiple birth	55	0.5%	3,880	3.3%
Birth characteristics:				
Vaginal delivery	10,749	99.2%	85,811	73.2%
Obstetrical procedures ^b	10,623	98.0%	113,632	96.9%
Delivery complications ^c	3,080	28.4%	42,446	36.2%
Low birth weight (< 2500 grams)	464	4.3%	10,550	9.0%

^a Includes pre-existing maternal medical problems such as anemia, diabetes, & hypertension as reported on the birth certificate.

^b Includes procedures such as ultrasound, electronic fetal monitoring, & stimulation of labor as reported on the birth certificate.

^c Includes delivery problems such as breech, fetal distress, and long labor as reported on the birth certificate.

1. Martin JA, Hamilton BE, Sutton PD, Ventura SJ, Menacker F, Muson ML. Births: Final Data for 2002. *National Vital Statistics Reports*, 2003; 52(10):1-114.

2. Walsh, LV, Boggess JH. Findings of the American College of Nurse-Midwives Annual Membership Surveys, 1993 and 1994. *J Nurse Midwifery* 1996; 41: 230-5.

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