



“For the first six years of my life, Mother’s thoughts were so largely centered upon me that she sacrificed even companionship with my father in order to give me her full time. A weak or puny baby was a disgrace to a Lakota mother. It would be evidence to the tribes that she was not giving her child proper time and attention and not fulfilling her duty to the tribe. More than that, it was evidence that she has not used proper social discretion and defied age-old tradition. It was a law with the Lakotas that for the first six years of a child’s life it should have the unrestricted care of the mother and that no other children should be born within this six-year period. To break this law was to lose the respect of the tribe, and both father and mother suffered the penalty. A fine, healthy child was, therefore, a badge of pride and respect, and healthy babies were the rule.”

- Luther Standing Bear
“Land of the Spotted Eagle,”
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RECLAIMING AMERICAN INDIAN MATERNAL AND INFANT HEALTH

Traditionally, Northern Plains and Rocky Mountain region Indian tribes considered their children sacred. Regrettably, childrearing practices, like so many other aspects of American Indian culture, have suffered over the past 100 to 150 years as a result of white America’s westward expansion. The traditional norms described in the sidebar are no longer observed by Luther Standing Bear’s descendants or tribe, with great implications for maternal and child health.

American Indian infants in the Rocky Mountains and on the Northern Plains die more frequently than white infants in the region, making infant death one of the major health problems facing tribes and urban Indians in the area despite great strides in medical research and technology in the United States.

Infant Characteristics and Maternal Risk Factors

Low birth weight and very low birth weight – defined as weighing less than 5 lbs 8 oz and 3 lbs 4 oz, respectively, at birth – are both associated with a multitude of health problems, including greater risk of increased chronic conditions and limitations of activity (Overpeck). All low birth-weight infants are more likely to experience long-term disability or to die during the first year of life than are infants of normal weight, with very low birth weight infants having the lowest survival rate of all. Major contributors to low birth weight are preterm births – infants born before 37 weeks of gestation – and multiple births (MCHB).

The infant mortality rate, which relates the number of infant deaths to the number of live births for a population, is one of the most commonly used measures of the overall health of a population and serves as a fundamental measure of development. In fact, overall reduction of infant mortality in the United States has been hailed as one of the 10 greatest public health achievements of the 20th century (MMWR). However, there is great disparity between the infant mortality rate in non-Hispanic white and other racial and ethnic populations, American Indians among them, a

Table 1
Health Statistics

	American Indian Women	All Montana Women
Population	29,111	458,260
Median age (years)	30.2	40.8
Median age at death (years)	64	81
Fertility rates: teens (teen births per 1,000 teen females)	100.9	35.9
Fertility rates: all women (all births per 1,000 females of childbearing age)	98.0	60.7
Percentage of births where mother started prenatal care in 1st trimester	65%	83%
Percentage of births where mother received adequate prenatal care	50%	73%
Percent of babies born with low birth weight (below 5lbs 8oz)	7.3%	6.9%
Infant mortality rate (deaths per 1,000 live births)	8.0	6.2
Immunization rate for 2-year-olds who are seen by a health care provider	85%	90%

Sources: Indian Health Services (2005); Office of Vital Statistics, Montana Department of Public Health and Human Services (2000 - 2004); Communicable Disease Control and Prevention Bureau, MT DPHHS (2006); U.S. Census Bureau (2000).

disparity to which differences in the rate of very low birth weight is a major contributor (MCHB). In Montana, the measures for infant mortality and low birth weight are both slightly higher for American Indians than for the population as a whole (Table 1).

However, when it comes to birth weight, it is important to keep in mind that large infants can also be unhealthy. When a baby is born large for gestational age, it is most often caused by maternal diabetes. Pre-existing, as well as pregnancy-onset (gestational) diabetes, if not monitored and managed during a pregnancy, can lead to excessive growth in an infant. Such babies often need to be delivered via Caesarean section, increasing the risk of complications and prolonging the mother’s recovery time.

“In Montana, Indian women have babies at a younger age than the overall state population, and they exhibit a higher incidence of alcohol, drug, and tobacco use during pregnancy, indicating that mothers and infants have stresses and challenges beyond the general Montana population.”

Additionally, pre-existing diabetes can cause problems early in the pregnancy (the first two months) as out-of-control blood sugar levels can affect the formation of a baby’s organs, causing serious birth defects (MCHB). Infants born to diabetic mothers may also be at higher risk of illness and death during infancy, as well as for the development of Type 1 diabetes later in life. The mother, if not already a diabetic herself, can go on to develop Type 2 diabetes (Pitkin).

All of these factors are more common within the American Indian population, but Indian mothers face additional challenges as well. In Montana, for example, Indian women have babies at a younger age than the overall state population, and they exhibit a higher incidence of alcohol, drug, and tobacco use during pregnancy, indicating that mothers and infants have stresses and challenges beyond the general Montana population.

With higher rates of teen pregnancies and poverty, lower levels of education and employment, and more limited access to quality health care among Montana’s American Indian population, health outcomes compare unfavorably with those of the total population. For example, the median age at death for American Indian women is 64 years, while it is 81 – a full 17 years more – for the overall female Montana population. However, it is worth noting that a shorter life expectancy is not related to a higher death rate. In Montana, American Indians have a lower death rate than the population as a whole (6.5 versus 9.1 deaths per 1,000 population).

Table 2
Level of Prenatal Care

	Adequate Plus	Adequate	Intermediate	Inadequate	No Care
American Indian women (MT)	18%	33%	20%	27%	2%
All Montana women	29%	45%	15%	10%	1%
	Prenatal Care Starting 1st Trimester	Prenatal Care Starting 2nd Trimester	Prenatal Care Starting 3rd Trimester	No Care	Unknown
American Indian women (MT)	65%	25%	7%	2%	1%
All Montana women	83%	14%	2%	1%	1%

Note: Adequate prenatal care is based on the Kotelchuck Index and is defined as receiving 80 percent or more of expected visits.
Source: Office of Vital Statistics, MT DPHHS (2000-2004).

Recently, public health efforts have been focused on improving the overall pre-conception health of American Indian women between the ages of 15 and 44 in order to improve pregnancy-related outcomes. For example, American Indian women would benefit from improved access to prenatal care, as they currently start care later and complete fewer doctors' visits than their counterparts in the general population. Among births to American Indian women, 65 percent were to women who started prenatal care in the first trimester, while in the general population, the corresponding number is 83 percent.

Similarly, 50 percent of American Indian new mothers had received adequate prenatal care, while 73 percent of all Montana births were to women who had received adequate prenatal care (Table 2).

Preconception health, however, does not end with the birth of a child. Health programs that focus on maternal and child health, such as WIC, Healthy Start, and public health clinics providing immunization and well-child visits, do in fact have a unique opportunity to ensure not only the well-being of the infant but also to improve and sustain the health of the mother, ensuring that her next pregnancy is healthy.

An essential element in improving American Indian maternal and infant health in Montana is the access to data. And not just any data—it needs to be both timely and reliable. Health data are used to define the scope of a health program, provide information about sub-groups that are at highest risk, evaluate the effectiveness of programs and services, and, over time, assist health planners to determine whether health is improving or declining. Though surveillance systems exist both at the state and federal levels, tribes and reservations have not fully benefited from timely access to detailed health data for their jurisdictions. However, in the areas of maternal and infant health, there is some good news in the several efforts that are under way to improve access to such data for tribes. Following are some examples.

Vital Statistics

Vital statistics encompass health data collected from infants' birth and death certificates and are maintained by state vital registries. Birth and infant death data can describe the size and characteristics of newborns and their parents and can provide insight into the scope of infant mortality and leading causes of infant death.

Before 2008, Montana birth certificates did not include information on the mother's tribal affiliation. However, starting in 2008, in keeping with the 2003 revision of the U.S. Standard Certificates of Live Birth by the Department of Health and Human Services, an option is included for the mother to indicate the name of her enrolled or principal tribe. This option has been included on Montana death certificates for some time, though it is to be completed by the funeral home director, which can render the information unreliable and difficult to analyze.

Additionally, Indian Health Services' Office of Program Statistics publishes a report, "Regional Differences in Indian Health," comparing the health status of IHS areas, including maternal and infant health. The most recently published report uses data that are 10 years old. Efforts of the Northern Plains and Rocky Mountain Tribal Epidemiology Centers are under way to collaborate with state departments of health to develop systems of vital records reporting to tribes.

Pregnancy Risk Assessment Monitoring System (PRAMS)

The goal of PRAMS is to reduce infant mortality and improve maternal and infant health through collecting population-based information on maternal experiences and attitudes before, during, and after the most recent pregnancy. Issues covered include access to and utilization of services, content of prenatal care, breastfeeding, nutrition, depression, abuse, and tobacco use and exposure. Data are available at the state level, though not for all states, and for certain sub-groups, provided that minimum response rate for a group is achieved. The State of Montana conducted a PRAMS survey in 2002. The resulting sample included 128 women of American Indian heritage, representing a response rate of 68 percent, as reported by the Centers for Disease Control and Prevention (CDC). The CDC requires a response rate of 70 percent or more to publicly release any data. Thus no data for American Indians are available from this effort.

As a result, the Rocky Mountain Tribal Epidemiological Center (RMTEC) is working to implement an American Indian Pilot PRAMS in 2008, involving two Montana Tribes. The purpose of this pilot is two-fold:

- to collect methodological information to aid Montana Maternal and

Child Health (MCH) staff in increasing American Indian response rates in future PRAMS efforts; and

- to gather currently unavailable maternal and child health data for use by RMTEC and the tribes in program planning.

RMTEC is seeking to support Montana in its next application for statewide funding for a PRAMS survey that fully includes the tribes and uses innovative techniques (following the CDC's guidelines) to ensure adequate American Indian response rates.

Pregnancy Nutrition Surveillance System (PNSS) Pediatric Nutrition Surveillance System (PedNSS)

These two program-based systems monitor the nutritional status of infants, children, and mothers who participate in federally-funded maternal and child health programs, such as WIC. Data collected for pregnant women include information on diabetes and hypertension during pregnancy, interpregnancy intervals, and smoking, while for children data are collected on birth weight, anemia, breastfeeding, overweight, and underweight. Data collected by PNSS/PedNSS are reported for the nation and for any contributor of data. Contributors can be a state or a tribal government, and data can be reported at the county, agency, or clinic levels. Montana regularly contributes state-level data to the PNSS/PedNSS.

Conclusion

Without detailed knowledge of this kind, existing disparities cannot be addressed through individualized programs, and blanket solutions may be applied that are less than effective for the populations that are worst off and completely superfluous where conditions are better. For example, given the data available on immunization rates for the individual reservations, a targeted immunization campaign can be developed that would focus more on the Flathead Reservation, where immunization rates are lowest, and less on the Blackfeet Reservation, where rates are highest. Only by recognizing disparities in health conditions among Montana's various populations can we create solutions that target every resident of our state rather than some arbitrary average.