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Department of Health

Comprehensive Assessment of Maternal and Child Health Needs 2006-2010

Brent Sherard, M.D., Director

State of Wyoming
Department of Health

Comprehensive Assessment of Maternal and Child Health Needs 2006-2010

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Community and Family Health Division
Ginny Mahoney, Interim Administrator

Additional information and copies may be obtained from:
Beth Shober, Maternal and Child Health Manager
Community and Family Health Division
4020 House Ave, Cheyenne, WY 82002
307-777-7942
bshobe@state.wy.U.S.

This document is available in alternative format upon request.

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MCH PROGRAM STAFF

Beth Shober, MA
MCH Program Manager

Perinatal Systems:
Debra Hamilton, RN, MSN, CCM, CLC
Perinatal Systems Manager
Women's Health Coordinator

Mona Coler, RN, BSN
Home Visiting Nurse Consultant

Christy Lujan, MSW
Perinatal Consultant

Children with Special Health Care Needs:
Dorothy Ailes, RN, CPNP, MSN
Program Manager

Sherrill Bates, RN
Nurse Consultant

Kimberly Asher
Metabolic and Gentic Clinic Coordinator

Ramona Nelson
Vicky Garcia
Paula Ray
Records Analysts

Epidemiology
Erin Croughwell Luben, MPH
CFHD Epidemiology Manager

Angela Crotsenberg, MS
CFHD Epidemiologist

Grants Management
LaVerna Adame
Financial Specialist

It is with great pride that we present the ***Comprehensive Assessment of Maternal and Child Health Needs, 2006-2010.*** This project has been a long process of working with communities, providers, and clients to assess the true health concerns and needs of the families in Wyoming.

The findings enclosed in this document are meant to assist the Maternal and Child Health Team as well as service planners, health care professionals and advocates with information necessary to make informed judgments about future efforts, identify gaps in services that should gain focus, and recognize health care concerns in Wyoming in which we are seeing success.

It is with great thanks that the MCH Team wishes to acknowledge the assistance, patience, guidance and leadership from the following contributors. Without them, this report would simply not exist. You were helpful beyond measure.

Angela Crotsenberg, MS
CFHD Epidemiologist
Wyoming Department of Health

Erin Croughwell Luben, MPH
CFHD Epidemiology Manager
Wyoming Department of Health

Cindy McCaffrey
Vital Records
Wyoming Department of Health

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Preface

Programs and agencies that serve Wyoming's families are at a critical crossroads early in the 21st century. The reform of social welfare and the restructuring of medical care and public health have produced dramatic changes in the health and welfare systems. These changes affect governmental agencies, as well as private and nonprofit organizations and institutions.

Research demonstrates the value and importance of healthy pregnancy outcomes. Being born at term and at a healthy birth weight are critical for optimal health and development. One of the greatest risk factors for preterm birth, smoking during pregnancy, is addressed with the Wyoming Families Matters program, targeting pregnant women who smoke and their families. Other programs are in place or being developed to support healthy pregnancy and birth.

Major social, economic and demographic changes of past decades are expected to continue. Therefore, increasing numbers of children will be living with a single parent, and more women will be joining the workforce, expanding the need for out-of-home child care and decreasing the amount of time families spend together. As a result, Governor Dave Freudenthal organized the Children and Families Initiative, a multi-disciplinary effort consisting of the directors of all state agencies, as well as many nonprofit and public businesses. All members of this initiative have committed time and resources to this project. The study identified issues and barriers facing many Wyoming children and families, including economic hardships, transportation and access to healthcare. The results of this effort have been recently published in a document, entitled *Wyoming Family Photo*. One of the objectives of the study, "children born healthy and achieving their highest potential in early development years," relates directly to the importance of healthy pregnancies and birth outcomes.

MCH collaboration with the Wyoming Department of Education's Coordinated School Health Program addresses critical issues that are inherent in child and adolescent health, such as injury prevention and healthy lifestyle promotion. The Governor's Impaired Driving Council addresses issues common to young, inexperienced drivers in Wyoming. Additionally, along with many states in the U.S., Wyoming has experienced an increased methamphetamine presence, and will be addressing that challenge in the coming years.

The number of families who have no health insurance continues to increase annually, a factor that is often associated with poverty. In July 2005, KidCare CHIP, Wyoming's state children's insurance program, increased the eligibility level to 200% of federal poverty level (FPL), which will allow more children to be covered who were not previously eligible for services.

It is our hope that this needs assessment document will provide service planners, providers and advocates a rich, practical framework to utilize in planning for the needs of children and families in Wyoming and will provide the information necessary to make informed decisions concerning how to best meet those needs. One of the clearest themes to emerge in this process is the necessity for collaboration across sectors of medicine, public health, education and social welfare. We hope this document will be widely read and the valuable information put to practical use to continue that trend. Future actions taken have never been more critical to the health and well being, and indeed, the lives of Wyoming families than they are at this time.

Thank you to all Wyoming citizens who contributed to this extensive project to assist in guiding programs for the population served by the Maternal and Child Health Section.

The Maternal and Child Health Team

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Executive Summary

The goal of Wyoming's five-year Comprehensive Assessment of Maternal and Child Health Needs is to provide a comprehensive and prioritized assessment of the statewide health of pregnant women and infants; children and adolescents; and children with special health care needs. The Needs Assessment will help to determine service needs, measure health problems, monitor trends, provide baseline data for future program evaluations, and assess existing and planned programs and services. This information will allow the MCH program to establish program and funding priorities by identifying unmet needs, especially of underserved populations, existing services and gaps in services and staff and consumer perceptions about health needs.

As part of this process, an extensive review and analysis of existing data was conducted using multiple data sources. In addition, primary data were collected through surveys, focus groups and stakeholder retreats. Indicators for the Needs Assessment were selected from several sources:

- Maternal and Child Health Bureau's Model Indicators
- National and state performance measures
- Stakeholder-determined MCH issues
- Indicators determined by a review of the data

While Wyoming is fortunate to be similar to or better than national averages in many areas, the state has some indicators that are worse than national averages in areas such as tobacco use during pregnancy, low birth weight, prenatal care, unintentional injury deaths to children and youth and suicides. A summary of some of the identified issues follows.

Table 1: Areas identified in the Needs Assessment where Wyoming is doing better than the nation.

	Wyoming Past		Wyoming Current		U.S. Current		HP 2010
	Year(s)	Indicator	Year(s)	Indicator	Year(s)	Indicator	Target
1. Population 24 years or older with high school degree	1999	90.0%	2003	90.9%	2003	80.4%	N/A
2. Percent of population living in poverty	'97-'98	12.1%	'02-'03	9.4%	'02-'03	12.3%	N/A
3. Teen Birth Rate (per 1,000 females ages 15-19)	1995	47.2	2003	41.0	2002	43.0	46.0*
4. Percent of mothers breast feeding at hospital discharge	1999	79.0%	2003	79.5%	2003	66.0%	75%
5. Infant Mortality Rate (per 1,000 live births)	1999	6.9	2003	5.7	2003	7.3	4.5
6. Percent of high school students engaged in vigorous exercise at least 3 days per week	1999	70.7%	2003	67.7%	2003	62.6%	85%
7. Percent of high school students watching less than 3 hours of TV per day	1999	72.6%	2003	73.4%	2003	38.2%	75%
8. Percent of high school students overweight or obese by BMI	1999	6.1%	2003	7.2%	2003	13.5%	5%
9. Rate of child abuse/neglect per 1,000 population	'95-'98	6.5	'00-'03	7.4	2002	12.3	11.1
10. Rate of gonorrhea per 100,000 population ages 20-24	'94-'98	44.9	'00-'04	56.7	2003	529.0	19.0
11. Rate of chlamydia per 100,000 women ages 15-19	'94-'98	1021.9	'00-'04	1568.2	2003	2687.3	3.0**
12. Percentage of Non-Hispanic Whites that are children and youth with special healthcare needs.			2001	12.4%	2001	14.2%	N/A

* HP2010 Target is for teen pregnancy, not teen birth
** HP2010 Target is for women ages 15-24.

Education: In 2003, 90.9% of Wyoming's population over age 24 had completed a high school degree compared to 80.4% nationally in 2000.

Poverty: The percent of the Wyoming population living in poverty in 2002-2003 was 9.4%, representing a 6.8% increase from 2001-2002 and compared to 12.3% nationally in 2002-2003.

Teen Birth Rate: From 1999-2003, 3.8% of births in Wyoming were to females under the age of 18. The teen birth rate in Wyoming has steadily declined since 1980 when the Wyoming teen birth rate was approximately 70 per 1,000. From 1995 to 2003, the teen birth rate in Wyoming declined from 47.2 to 41.0. From 1999-2003, 69.9% of teen births (ages 15-19) in Wyoming were to unmarried females, compared to 74.6% nationally.

Breast Feeding: In 2003, 79.5% of Wyoming women surveyed by the annual Ross Mothers Survey reported breastfeeding at hospital discharge, compared to 66% nationally. Of the women enrolled in the Women, Infants, and Children (WIC) program, 71.9% reported breastfeeding at hospital discharge, compared to 54.3% nationally.

Infant Mortality Rate: The IMR for Wyoming from 1999-2003 was 6.4 per 1,000 live births compared to the 2003 national rate of 7.3 per 1,000.

Physical Activity: Data from the 2003 Youth Risk Behavioral Survey (YRBS) indicate that 52.9% of Wyoming High School Students were enrolled in Physical Education (PE), 23.2% attended PE daily, 56.3% participated in a team sport and 67.7% reported vigorous physical activity on three or more days in the past week. About 73% of high school students (77.9% female and 68.9% male) reported watching less than 3 hours of television per day. According to the 2003 YRBS, Wyoming high school students were more likely to report vigorous physical activity and were significantly less likely to watch 3 hours or more of television than their national counterparts and to exercise at least 20 minutes in an average PE class.

Obesity: Wyoming high school students differ significantly from U.S. high school students when comparing weight by BMI. In 2003, 7.2% of Wyoming high school students were overweight according to BMI, compared to 13.5% nationally and 11.7% were at risk of becoming overweight, compared to 15.4% nationally.

Child Abuse/Neglect: From 2000 to 2003, there were 7.4 victims of child abuse and/or neglect under 18 years of age, per 1,000 population (n=3,658), compared to 12.3 nationally in 2002.

Sexually Transmitted Diseases: Wyoming has much lower rates for gonorrhea and chlamydia than the nation and in 2003, ranked 49th nationally for gonorrhea rates and 42nd for chlamydia rates. In Wyoming, from 2000-2004, the Wyoming population with the highest gonorrhea and chlamydia rates per 100,000 population was women ages 20 to 24 years. From 2000-2004, the gonorrhea rate in this population was 73.0 per 100,000 compared to 595.2 nationally in 2003. The chlamydia rate during this same time for women ages 20 to 24 was 1,622.4 per 100,000, compared to 2564.4 nationally in 2003.

Children and Youth with Special Healthcare Needs: In 2001, the percentage of children and youth with special health care needs (CYSHCN) in Wyoming was not significantly different from the national percentage, 12.5% compared to 12.8%. A significantly lower percentage of Non-Hispanic Whites in Wyoming, 88.9% of the state's population, are CYSHCN (12.4% vs. 14.2% U.S.).

Table 2: Areas identified in the Needs Assessment where Wyoming is not doing as well as the nation

	Wyoming Past		Wyoming Current		U.S. Current		HP 2010
	Year(s)	Indicator	Year(s)	Indicator	Year(s)	Indicator	Target
1. Percent of residents with no health insurance	1998	16.9%	2003	16.0%	2003	15.6%	0%
2. Percent of children uninsured at any time during the year	1997	14.3%	2003	12.6%	2003	11.4%	0%
3. Percent of live births that were unintended			2003	49.7%	2003	31.0%	30%
4. Percent of women using tobacco during pregnancy	1999	22.9%	2003	19.2%	2003	11.0%	2%
5. Percent of women receiving adequate or adequate plus prenatal care	1998	71.7%	’99-‘03	69.9%	2003	74.6%	90%
6. Percent of babies born low birth weight (< 2,500 grams)	1999	8.3%	2003	9.0%	2003	7.9%	5%
7. Rate of unintentional injury deaths per 100,000 children ages 1-14			’99-‘03	15.0	2002	7.6	17.5*
8. Rate of MVC deaths per 100,000 children ages 1-14			’99-‘03	10.4	2002	3.9	9.2*
9. Rate of unintentional injury deaths per 100,000 youth ages 15-24			’99-‘03	56.6	2002	37.0	17.5*
10. Rate of MVC deaths per 100,000 youth ages 15-24			’99-‘03	39.5	2002	27.8	9.2*
11. Percent of children ages 19-35 months completing the 4:3:1:3:3 vaccine schedule	1999	81.5%	2003	76.0%	2003	79.4%	90%
12. Percent of high school students using smokeless tobacco	1999	17.7%	2003	13.3%	2003	6.7%	1%
13. Rate of suicide per 100,000 teens ages 15-19	1999	30.3	01-03	18.6	2003	11.0	6.0
14. Percent of high school students seriously considering suicide	1999	16.7%	2003	21.0%	2003	16.9%	N/A
15. Percent of high school students who have carried a weapon on school property in the past 30 days	1999	11.8%	2003	10.1%	2003	6.1%	6%
16. Percentage of uninsured children and youth with special healthcare needs			2001	18.7%	2001	11.6%	N/A
17. Percentage of families of CYSHCN experiencing financial difficulties due to their child’s medical condition			2001	27.8%	2001	20.9	N/A
18. Percentage of uninsured CYSHCN who are Hispanic			2001	12%	2001	8.5%	N/A

*HP 2010 Target applies to all age groups

Insurance: An estimated 16.0% of Wyoming residents were without any health insurance coverage in 2003, compared to 15.6% nationally. While the percentage of uninsured Wyoming residents has not significantly changed since 1998 (16.9%), Wyoming's ranking has changed from 18 to 15 nationally. In 2003, 12.6% of Wyoming children under 18 were not covered by health insurance at any time during the year compared to 11.4% nationally. This represents a decrease from 14.3% in 1997.

Unintended Pregnancy: National estimates of unintended pregnancy indicate that 49.1% of all pregnancies (excluding miscarriages) and 31% of live births in the United States are unintended. The Wyoming Maternal Outcome Monitoring System (MOMS) provides statewide, representative data on Wyoming women who have given birth. 2003 data show that 49.1% of Wyoming mothers were not trying to get pregnant when they conceived.

Tobacco Use During Pregnancy: In 2003, 19.2% of women giving birth smoked during their pregnancy, compared with 11.4% nationally in 2002. The United States has seen a 42% drop in smoking during pregnancy since 1989, and a 7% drop between 1999 and 2000. While Wyoming has seen a significant decrease since 1989, it has not done as well. Smoking during pregnancy has decreased by only 18% since 1989 and 9% since 1999.

Prenatal Care: From 1999-2003, 83.6% of Wyoming women who gave birth received prenatal care in the first trimester, compared to 84.1% nationally in 2002. In Wyoming, from 1999-2003, 69.9% of women giving birth had received adequate or adequate plus prenatal care, compared to 74.6% nationally in 2002. During the same time period, 11.3% of women giving birth received inadequate or no prenatal care, compared to 11.3% nationally in 2002. Adequacy of prenatal care in Wyoming has remained consistent during this time period.

Low Birth Weight: From 1999-2003, the percentage of Wyoming babies born at LBW was 8.5%, with the highest being 9.0% in 2003. From 1999-2003, 1.1% of Wyoming babies were born at VLBW. In 2002, in the United States, 7.8% of babies were born LBW and 1.5% were born VLBW. In 2002, Wyoming ranked 15th out of the U.S. states and Washington DC overall for LBW and ranked 2nd for LBW to White, non-Hispanic mothers and 4th for LBW to Hispanic mothers. In 2002, Wyoming was tied for 45th place for VLBW.

Unintentional Injury Deaths: Unintentional injuries (UI) are the leading cause of death for all Wyoming children and adolescents, and motor vehicle crashes (MVC) account for the majority of UI deaths. For all age groups, Wyoming's UI and MVC death rates for 1999-2002 are higher than U.S. rates for 2002. They are significantly higher for all groups except ages 1-4, which may be due to the small numbers of deaths in this age group in Wyoming.

Vaccination: In 2003, the National Immunization Survey (NIS) estimated that almost 76% of Wyoming children ages 19-35 months were up-to-date with the recommended 4:3:1:3:3 vaccination schedule (4 DPT, 3 Polio, 1 MMR or Measles, 3 HIB, 3 Hepatitis B). While the percentage of Wyoming children ages 19 to 35 months has decreased since 1999, this decrease has not been statistically significant. In 2003, Wyoming ranked 41st nationally for 4:3:1:3:3 in children ages 19 to 35 months.

Smokeless Tobacco in Teens: While Wyoming high school students report significantly more current smokeless tobacco use than their national counterparts (13.3% vs. 6.7% in 2003), this percentage has decreased significantly since 2001. Males in Wyoming are much more likely than females to be current smokeless tobacco users (21.1% vs. 5.0%).

Suicide: In 2003, Wyoming had the highest rate of suicide mortality in the nation (21.1 per 100,000 population compared to 11 nationally). Teen suicide rates in Wyoming are also high compared to the nation. The 2001-2003 teen suicide rate for youth ages 15 to 19 years was 18.6 per 100,000 population, compared to the 2002 U.S. rate of 7.4 per 100,000. In 2003, Wyoming high school students responding to the YRBS were more likely than their U.S. counterparts (21.0% vs. 16.9%) to seriously consider attempting suicide.

Weapons: Based on 2003 YRBS data, Wyoming high school students were more likely than their national counterparts to have carried a weapon in the past 30 days, to have carried a gun in the past 30 days, and to have carried a weapon on school property.

Children and Youth with Special Healthcare Needs: While only 8.5% of Hispanics in the U.S. are CYSHCN, significantly more of Wyoming's Hispanic children, 12%, are CYSHCN. Significantly more CYSHCN in Wyoming (18.7%) were uninsured at some point during the past year than CYSHCN in the rest of the nation (11.6%), and more than 9% of CYSHCN in Wyoming are currently uninsured compared to only 5.2% nationally. Nationally, Wyoming has the highest percentage of families of CYSHCN (27.8%) experiencing financial difficulties due to their child's medical condition compared to 20.9% of CYSHCN families across the nation.

Methods

The purpose of the Comprehensive Assessment of Maternal and Child Health Needs is to provide a comprehensive, prioritized evaluation of statewide health and needs of families, pregnant women, infants, children and adolescents, and children and youth with special health care needs. As part of this process, an extensive review and analysis of existing data were conducted using multiple data sources.

Primary data were collected through surveys and group processes. Indicators for the Needs Assessment were selected from several sources:

- Maternal and Child Health Bureau's Model Indicators
- National and state performance measures
- Stakeholder-determined MCH issues
- Indicators determined by a review of the data

In the fall of 2003, an MCH Needs Assessment Steering Committee was established to help direct the Needs Assessment process. This committee was led by the Community & Family Health Division Epidemiology Unit and was made up of MCH program managers. The committee reviewed and approved the Needs Assessment plan and the proposed stakeholder survey, which was based on the survey used for the 2000-2005 Needs Assessment.

Stakeholder Input

A three-page survey was developed in 2003 using indicators from the MCHB, HP2010 and from the MCH staff. The survey had four separate sections with a list of issues for each of the four populations: maternal and infant health, children and adolescent health, children with special health care needs and women's health (reproductive health and beyond reproductive health). Respondents were also allowed to identify issues not listed on the survey.

Survey participants were recruited using mailing lists from MCH, Children's Special Health and from key MCH collaborators listed below:

- Mental Health Division (administers the mental health, and family violence/sexual assault authorities within the Department and the Wyoming State Hospital)

- Substance Abuse Division (provides a specific focus on substance abuse issues and maximizes current and future resources to fight substance use and addiction (including tobacco and methamphetamines))

- Developmental Disabilities Division (provides services for children and adults with developmental disabilities, beginning with early intervention and preschool programs, including responsibilities associated with the intermediate education unit, the adult developmental disabilities programs, and the Wyoming State Training School.)

- Community and Family Health Division (provides MCH services as well as a number of direct service programs including Public Health Nursing, Immunizations, Oral Health, Genetics, Metabolic Screening and WIC.)

- Preventive Health and Safety Division (includes Epidemiology, Cancer Surveillance, Diabetes, STD, Vital Records, Cardiovascular Disease, Environmental Health (lead and radon), Tuberculosis, Bioterrorism, and many other programs that focus heavily on prevention and safety.)

The responses to the stakeholder survey totaled 938. Respondents included health care providers (41.4%), school personnel (19.9%), state/local government employees (10.8%), parents/grandparents (8.4%) and others (28.8%). The top 15 issues for each population group are as follows:

Table 3: Top Issues Identified by the 2003 Stakeholder Survey

Rank	Maternal, Infant, Early Childhood	Children & Adolescent Health	Children with Special Health Care Needs	Women of Reproductive Age
1	Health Insurance	Drug Use & Abuse	Health Insurance	Health Insurance
2	Teen Pregnancy/Births	Cigarette Use	Access to Early Intervention Services	Access to Preventive Health Services
3	Early Care & Education	Access to Mental Health Treatment	Support Systems for Families	Access to Obstetrical Care
4	Poverty & Financial Support	Health Insurance	Coordination Between Agencies	Family Planning
5	Smoking During Pregnancy	Teen Pregnancy/Births	Access to Financial Assistance	Cigarette Use
6	Births to Single Mothers	Access to Regular Health Care Provider	Access to Specialty Care	Substance Use
7	Education for Parents	Depression	Respite Care	Depression
8	Social/Emotional Health (Birth – Age 8)	Obesity	Access to Primary Care	Access to Mental Health Services
9	Alcohol Use During Pregnancy	Access to Drug Treatment Facilities	Family Friendly System	Obesity
10	Immunizations	Social/Emotional Development	Improved Sharing of Treatment Plans Among Providers	Family Violence
11	Child Care	Suicide	Child Care	Alcohol Use
12	Drug Use During Pregnancy	Family Planning	Oral/Dental Health	Sexually Transmitted Diseases
13	Access to Obstetricians	Nutrition	Access to Mental Health Services	Breast/Cervical Cancer
14	Family Planning	Motor Vehicle Crashes	Access to screening services	Oral/Dental Health
15	Family Violence	Smokeless Tobacco Use	Vocational Planning/Job Training	Access to Specialty Care

Focus Groups

In 2004, focus groups were held throughout the state at 10 sites, including three separate groups on the Wind River Reservation (Northern Arapaho, Eastern Shoshone and other tribes). The groups were held in six different sectors of the state, to attract as many stakeholders as possible. Groups were planned to be divided into providers, consumers of MCH services and women's health. However, due to the small turnout in some sites, some groups were combined. Additional focus groups were held for Spanish-speaking participants, but the resulting data was inadequate and is not included in this document. Facilitators used the results from the above-mentioned survey to help participants to identify and elaborate on their priority areas. The overall top ten priorities determined by these focus groups were:

Table 4: Top Issues Identified by the 2004 Focus Groups

Rank	Issue
1	Health Insurance
2	Coordination Among Agencies
3	Access to Health Care (Mental Health, General Access Issues, Specialty Care)
4	Education for Parents
5	Substance Use and Abuse
6	Social and Emotional Development
7	Dental Health
8	Women's Health Support Needs
9	Obesity
10	Child Welfare Issues

(See Appendix C)

Final MCH Priorities

In March 2005, the Wyoming Maternal & Child Health management team analyzed and processed all of the information included in this report (statistical data, stakeholder survey results and focus group results) to identify priority issues for the MCH population. Issues were selected based on importance, seriousness, cost and ability to affect change. Those issues (not listed in order of importance) are as follows:

1. Care coordination services for the at-risk MCH population including first time mothers, women with high-risk pregnancies and women and children with special health care needs.
2. Barriers to accessing health and dental care.
3. Incidence of low birth weight births in Wyoming.
4. Mental health service capacity for MCH population in Wyoming.
5. Preventable disease and injury in Wyoming children and youth.

6. Tobacco and other substance use in the MCH population.
7. Family participation and support in all MCH programs.
8. Women's pre-conception and inter-conception health.

The factors that are related to ensuring healthy mothers and children are complex and varied. Some, such as economic situations and cultural beliefs, are not readily changed. However, there are indicators that can be improved through health promotion and education and enhanced collaboration among agencies. The data provided in this needs assessment can be useful in establishing priorities and monitoring progress towards those objectives.

State Performance Measures

As a result of changes in MCH priorities, two state performance measures were discontinued. Because the Substance Abuse Division of the Wyoming Department of Health is primarily responsible to address alcohol use in all populations, including pregnant women, the performance measure related to the percentage of women drinking alcohol during pregnancy was discontinued. In addition, the Minority Health Program is currently located in another section, and since MCH funds are no longer being used to support that program, the performance measure related to the percentage of Wyoming counties with access to translation services was also discontinued. Two new state performance measures were added. Wyoming's current state performance measures are listed below with the two new performance measures, including future efforts directed toward them.

New State Performance Measures

Percent of Wyoming infants identified at birth with a congenital anomaly

- Collaborate with Vital Records to obtain aggregate data on infants born with congenital anomalies.
- Since Wyoming has no birth defects surveillance system, a data system will be implemented to track data on congenital anomalies.

Percent of women who report taking a multivitamin in the month before pregnancy

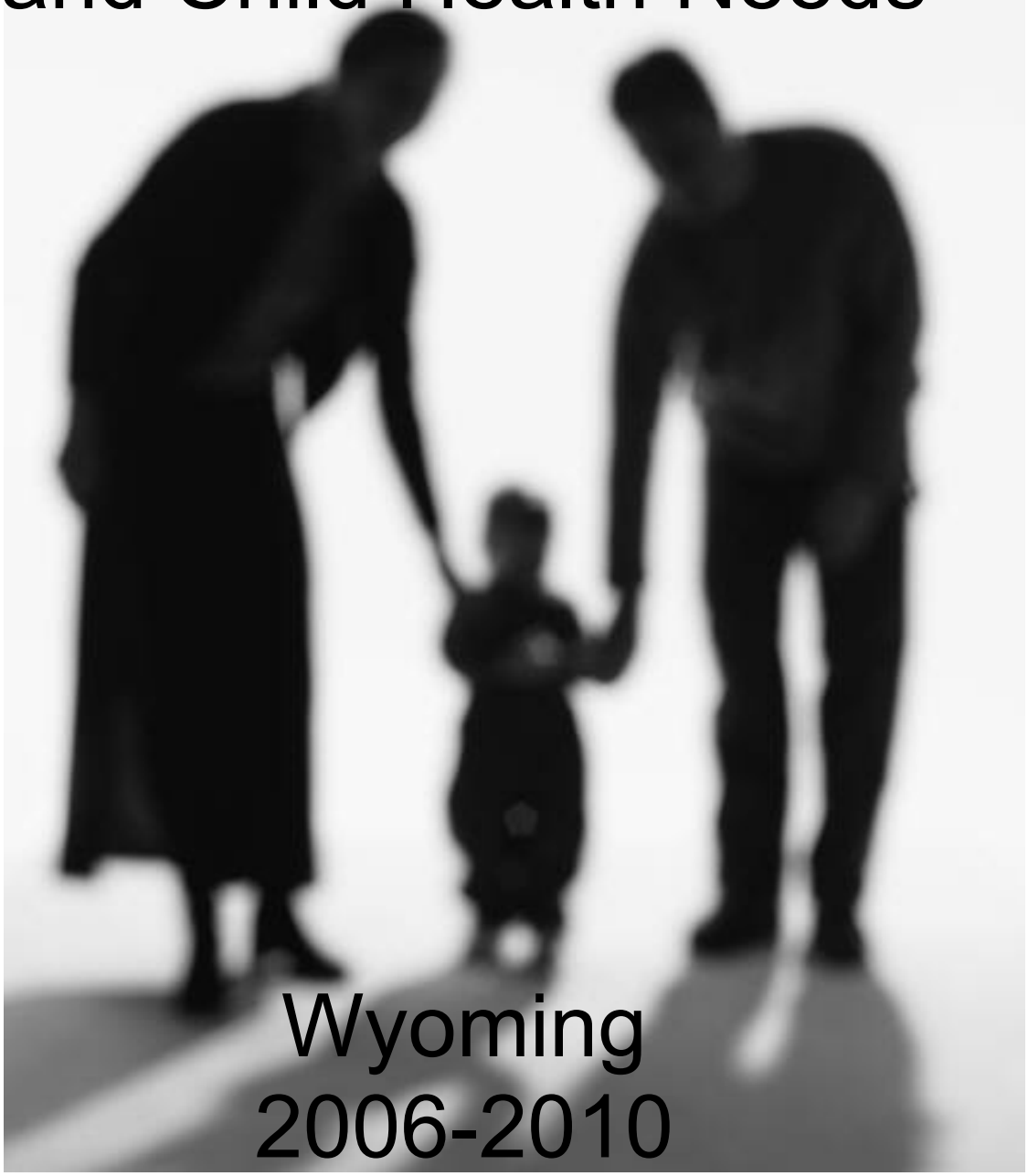
Emphasis will be on nutrition during pregnancy with support from:

- WIC
- Cent$ible Nutrition
- Healthy Baby is Worth the Weight Program which helps pregnant women and their providers track weight during pregnancy to ensure adequate weight gain

Current State Performance Measures

- Percent of deaths in children and youth ages 1-24 due to non-motor vehicle related unintentional injuries.
- Percent of high school students using alcohol
- Percent of high school students who report tobacco smoking.
- Percent of infants born to women who smoked during pregnancy
- Percent of Wyoming high school students who are overweight
- Percent of high school students using methamphetamine
- Percent of infants born preterm (before 37 weeks gestation)
- Percent of Wyoming infants identified at birth with a congenital anomaly
- Percent of women who report taking a multivitamin in the month before pregnancy

Comprehensive Assessment of Maternal and Child Health Needs



Wyoming
2006-2010

Wyoming Demographics

Wyoming is the 9th largest state in area covering 97,100 square miles, but has the smallest population (493,782 according to the 2000 census, and an estimated 501,242 in 2003). Unlike many other large rural states, Wyoming is unique in that it lacks any large metropolitan areas. Cheyenne and Casper are the largest cities, with populations of 53,011 and 49,644 respectively. Seventeen of Wyoming's twenty-three counties are frontier (< 6 people per square mile) and four are rural. About 70% of Wyoming's population lives in a county designated as frontier or rural, with 47% living in frontier counties. Wyoming averages 5.1 persons per square mile.[1]

Wyoming presents some unique geographic barriers – several mountain ranges, high desert, a cold and windy climate, and long travel distances that are especially difficult during the winter. Eighteen counties have been completely or partially designated as Health Professional Shortage Areas (HPSA) for primary care, twelve have been classified as Dental HPSAs and all twenty-three counties have been classified as Mental Health HPSAs.[2] "There were over 760 active patient care physicians in Wyoming in 2000. With 155 physicians per 100,000 population, Wyoming was well below the national ratio of 198 physicians per 100,000. Wyoming ranked 46th among states in physicians per capita."[3]

Population

The Wyoming population in 2000, according to the U.S. census, was 493,782 and the estimated population for 2003 was 501,242. The 2000 census represents an 8.9% increase in Wyoming's population since 1990. Wyoming's population is evenly split between males and females. Wyoming's population is expected to increase to 641,000 by 2015.[4] The biggest increase in the population is projected to be those of retirement age.

Education

In 2003, 90.4% of Wyoming's population over age 24 had completed a high school degree compared to 83.6% nationally in 2000. Almost 21% of Wyoming's population over 24 had a college degree in 2003, compared to 24% of the nation's population in 2000. The percentage of students that completed high school with either a diploma or a certificate in 2002-2003 (77%) was unchanged from the 1999-2000 school year. [1, 5]

Schools

In May 2005, there were 42 Child Developmental Centers serving 3055 children. The Child Development Centers provide services to fulfill the requirements of Part C and B.

In 2003, there were 49 independent school districts and 367 public schools in Wyoming. For the 2002-2003 school year, the average number of enrolled students in Wyoming was 84,741 with an average daily attendance of 79,921 (94.3%). The public high school graduation rate was 77.2%. In 2002-2003, 30.9% of public school students were eligible for free and reduced lunch, up from 28% in 1999-2000. The school drop out rate was 4.6% in 2002-2003, down from 6.3 percent in 1999-2000. Males were more likely to drop out than were females (5.2% vs. 4.0%) and Native Americans and Latinos were more likely to drop out than were whites (15.2%, 8.8% and 4.0% respectively).[6] According to data in the National Kids Count 2004 Data Book, Wyoming had the 13th lowest high school dropout rate nationally in 2001.[7]

There are seven community colleges throughout Wyoming with a 2003-2004 enrollment of 21,061, which represents a 51% increase from the enrollment of 13,923 in 1996-1997.[8] There is one university in Wyoming, the University of Wyoming, in Laramie (Albany County) with a 2003-2004 fall enrollment of 13,162, an increase from 11,621 in the fall of 1998.[9]

Age

In 2000, the Wyoming population had a median age of 35.3 years for males and 37.1 years for females, compared to 31.5 for males and 32.5 for females in 1990. Children and youth ages 20 and under comprise 29.2% of the population.[1]

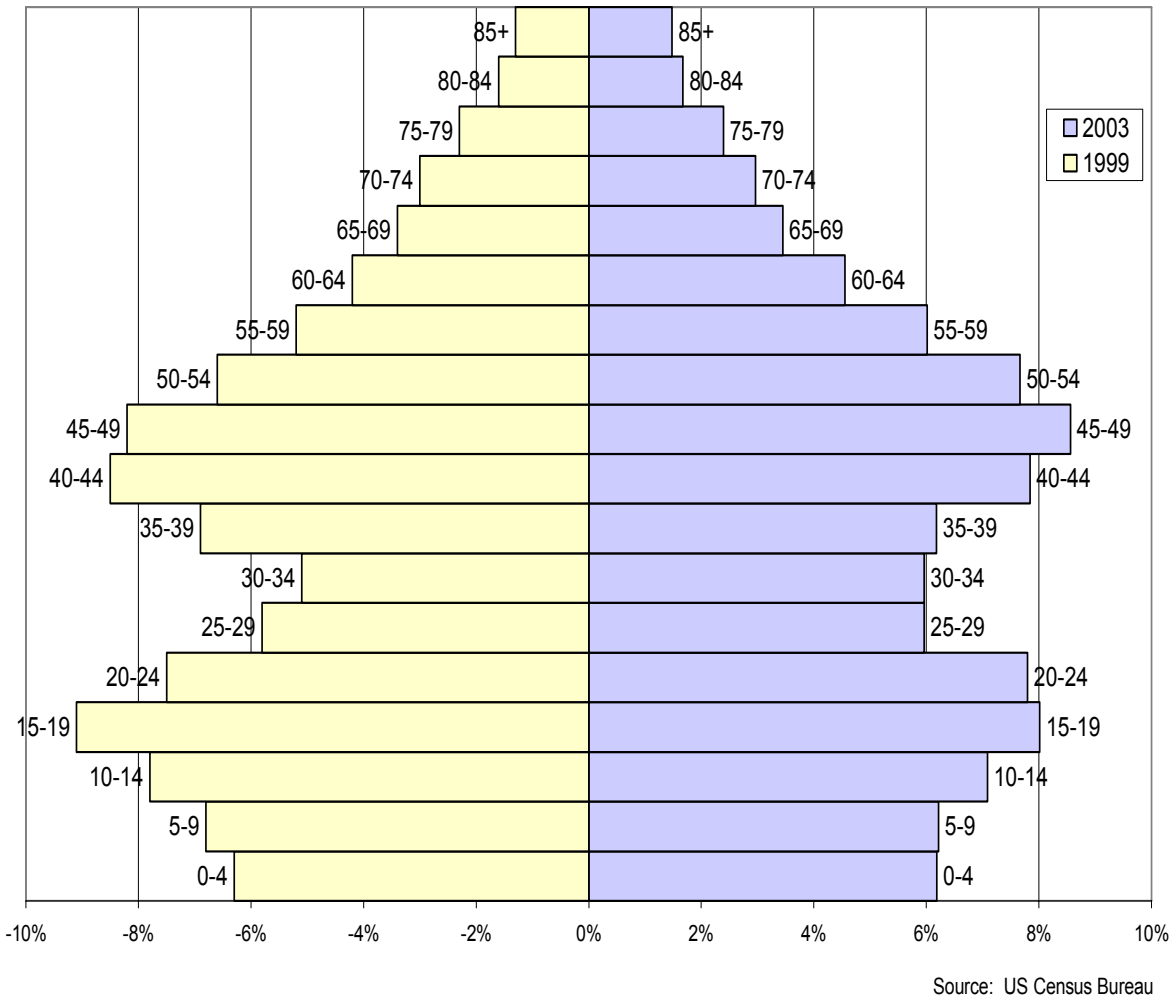
Table 5: Population Estimates for Wyoming by Age and Sex: 2003

Age	Total	Male	Female
0-4	31,018	16,193	14,825
5-9	31,158	15,862	15,296
10-14	35,507	18,355	17,152
15-19	40,187	20,651	19,536
20-24	39,081	20,443	18,638
25-29	29,861	15,695	14,166
30-34	29,889	15,408	14,481
35-39	30,960	15,573	15,387
40-44	39,325	19,383	19,942
45-49	42,899	21,524	21,375
50-54	38,417	19,651	18,766
55-59	30,155	15,462	14,693
60-64	22,822	11,546	11,276
65-69	17,307	8,422	8,885
70-74	14,859	6,922	7,937
75-79	11,989	5,541	6,448
80-84	8,402	3,425	4,977
85+	7,406	2,286	5,120
Total	501,242	252,342	248,900

Source: U.S. Census

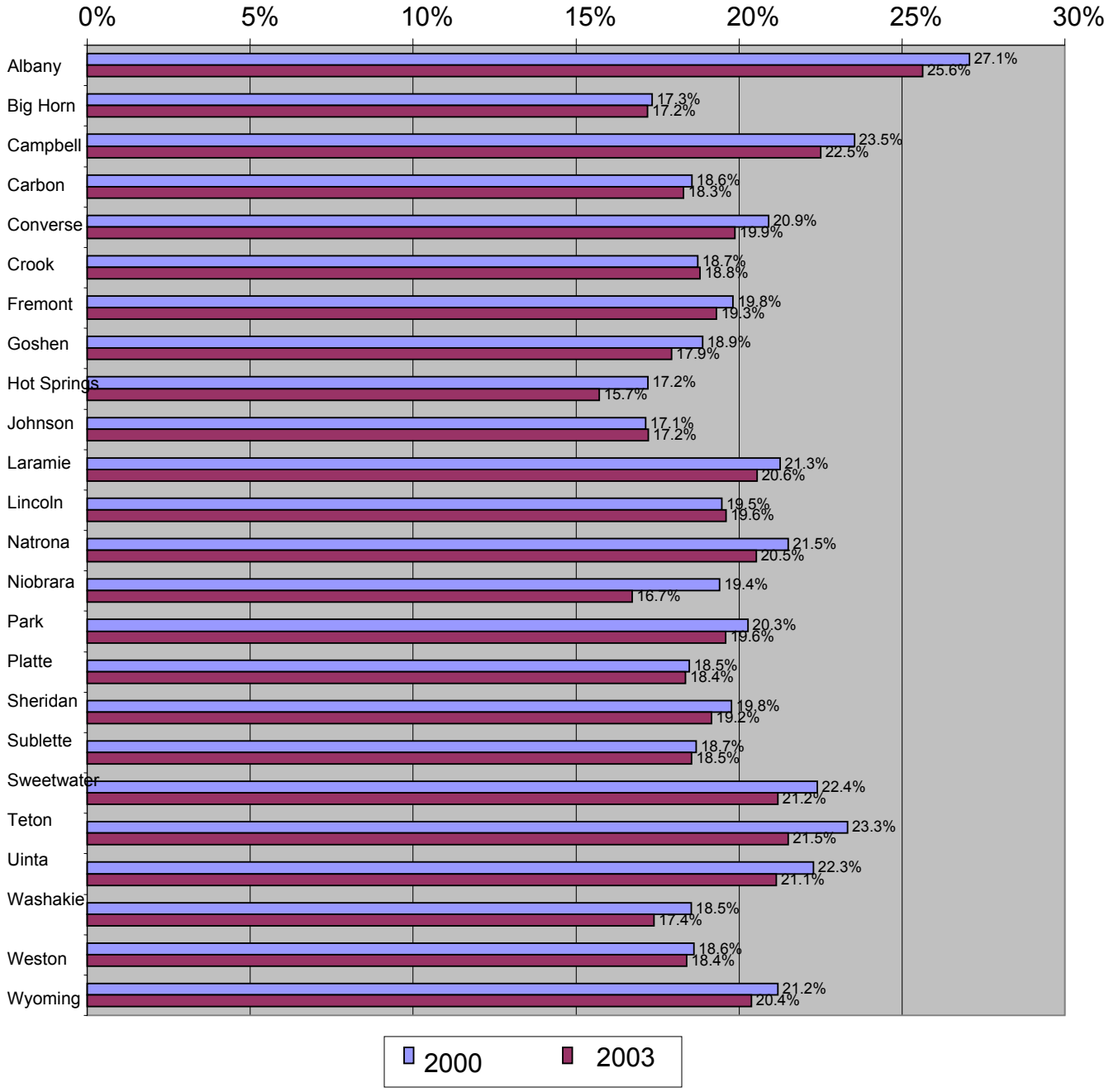
Wyoming's age composition did not change very much between 1999 and 2003; however, there was an increase in 50-54 year olds and a decrease in 15-19 year olds.[1]

Figure 1: Population Pyramid, Wyoming 1999-2003



There were an estimated 102,150 women of reproductive age (15-44) in Wyoming in 2003, comprising 20.4% of the total population of the state. This represents a decrease from 21.3% in 1998. Albany, Campbell and Teton counties had the highest proportions of women ages 15-44, while Big Horn, Niobrara and Hot Springs have the lowest.[1]

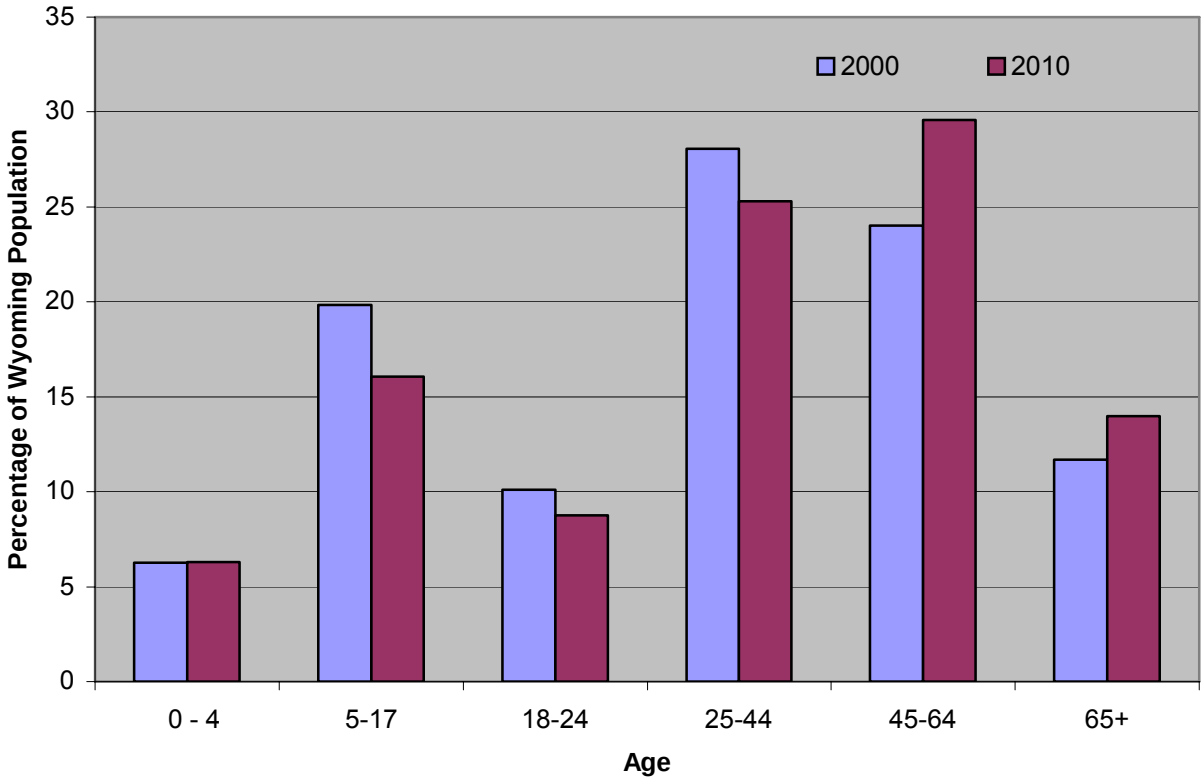
Figure 2: Women of Childbearing Age as Percent of Whole Population



Age Projections

From 2000 to 2010, Wyoming's total population is expected to increase by approximately 5.3%. The greatest growth is predicted to occur in the population 45 years of age and older with a projected increase of more than 28%. The total number of children under 18 is expected to decrease by nearly 10%.

Figure 3: Population Estimate by Age for Wyoming: 2000 and 2010



Source: U.S. Census Bureau

Race/Ethnicity

The population of Wyoming is predominantly Caucasian with a small increase in the proportion of Native Americans since 1980, and continuing increases in the population of Hispanics/Latinos each decade since 1980.[1]

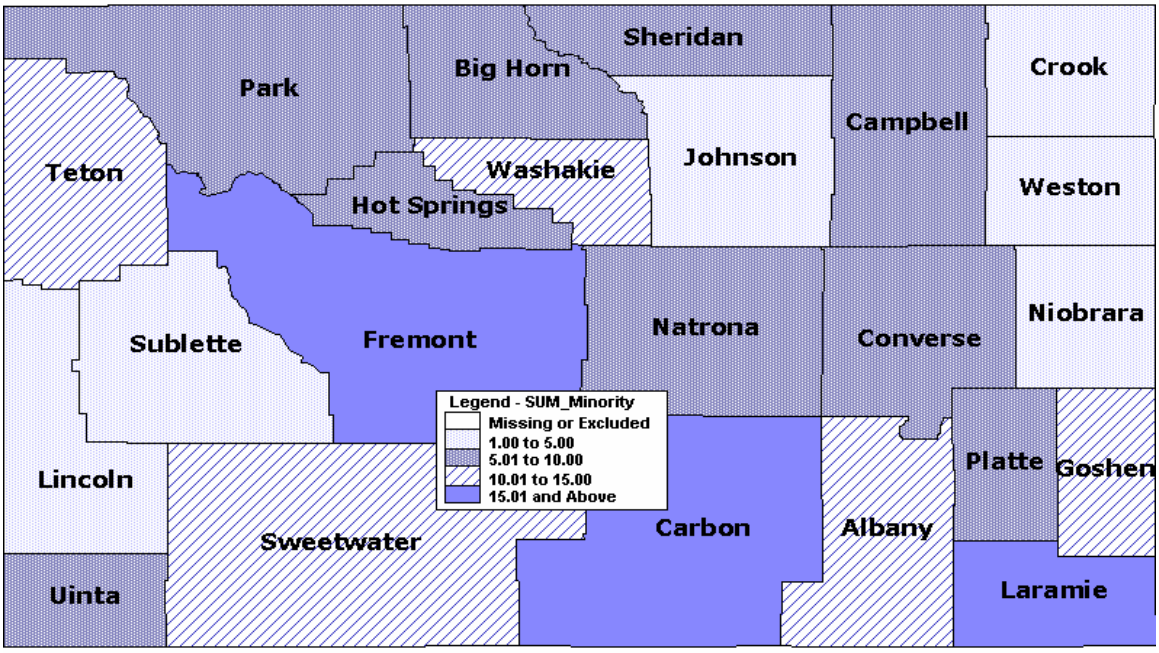
Table 6: Wyoming Population by Race and Ethnicity

	1980	1990	2000*	2003
Non-Hispanic				
White	97.2%	94.2%	89.1%	88.4%
African American	0.7%	0.8%	0.7%	0.8%
Native American	1.5%	2.1%	2.1%	2.1%
Asian/PI	0.4%	0.6%	0.6%	0.7%
Other	2.3%	2.3%	1.0%	1.1%
Hispanic (All Races)	5.3%	5.7%	6.4%	6.8%

Source: U.S. Census

There are two federally recognized Native American tribes in the State of Wyoming: the Northern Arapaho and the Eastern Shoshone. Most of Wyoming's estimated 10,734 Native Americans reside in a shared reservation located mostly in Fremont County. County-specific data on minorities are available in Appendix A. The counties with the highest proportion of minorities are Fremont (25.8%), Laramie (17.9%) and Carbon (17.6%).[1]

Figure 4: Wyoming Minority Population Estimates as a Percentage of County Population, 2003



Source: U.S. Census

Economics

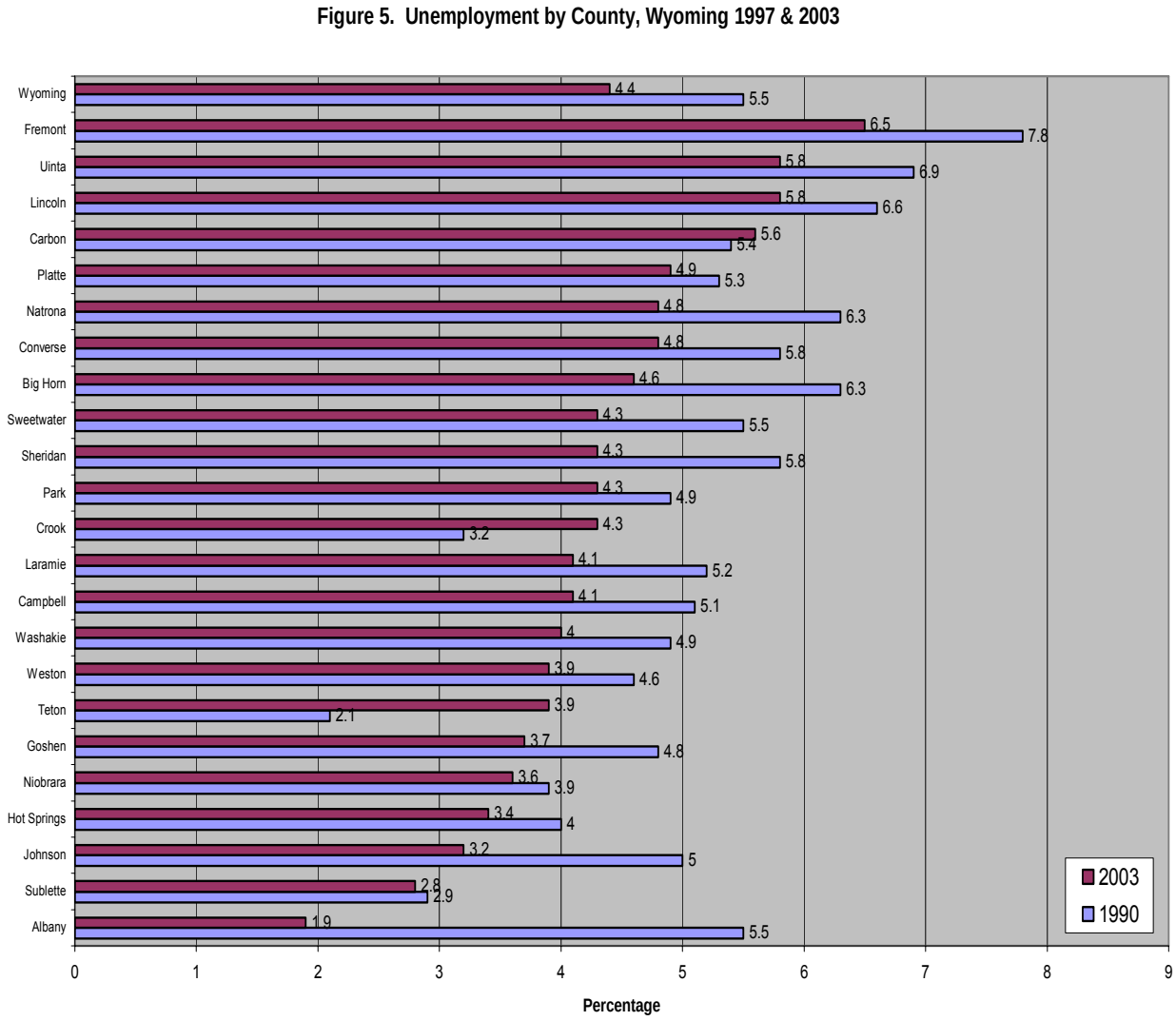
The median household income in Wyoming from 2000-2002 was $40,499, compared to $39,719 in 1999-2001, representing an increase of 2%. The 2003 per capita personal income was $32,808, up from $31,021 in 2002. Wyoming ranked 33rd nationally in median household income from 2000-2002 and 15th for per capita income. The four person median family income for the last year available (1999) was $51,170.[5]

The percentage of the Wyoming population living in poverty in 2002-2003 was 9.4%, representing a 6.8% increase from 2001-2002 and compared to12.3% nationally in 2002-2003.[5,10]

From 2001-2003, there were approximately 46,000 Wyoming children (36.3%) living at or above 200% of poverty level, compared to 38.2% nationally. This represents a decrease from 43% of children in 1997-1998. An estimated 7.3% of Wyoming children were uninsured and at or below 200% of poverty level from 2001 to 2003, compared to 7.5% nationally. Wyoming ranked 17th highest nationally.[1]

In 2003, Wyoming had an annual unemployment rate of 4.4%, ranging from 1.9% in Albany County to 6.5% in Fremont County. This compares to a U.S. rate of 6.1% in August 2003. For all but 3 Wyoming counties (Carbon, Crook and Teton), the annual unemployment rate decreased from 1997 to 2003.

Figure 5: Percentage Unemployment by County, Wyoming 1997 & 2003

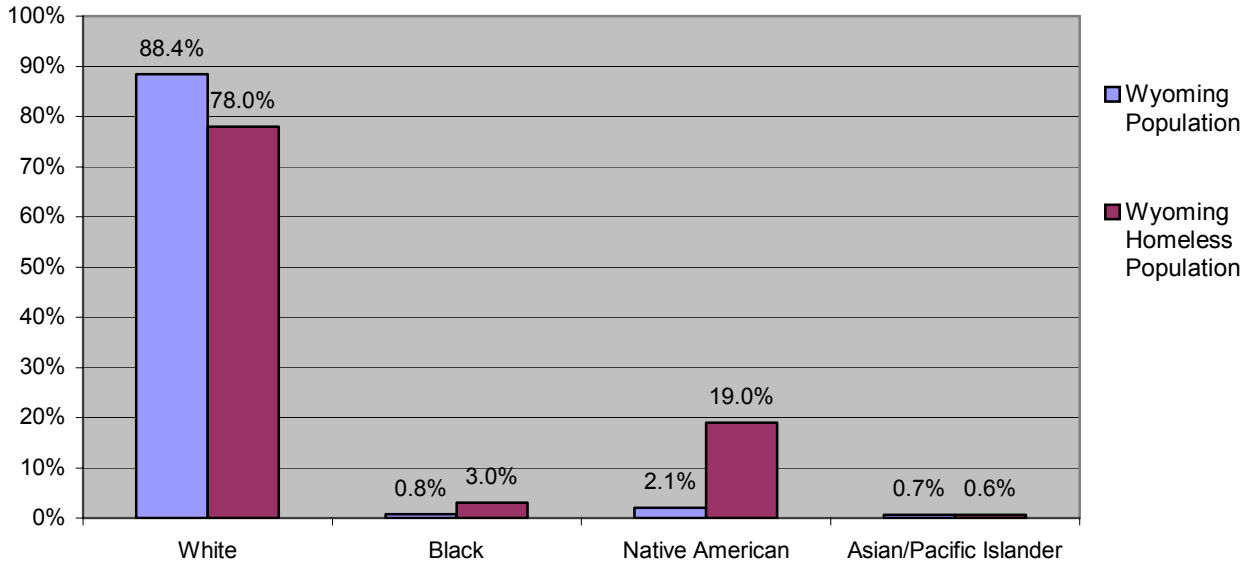


Homelessness

Women and children comprise 48% of Wyoming's homeless population, and 35% of the homeless in Wyoming are part of a homeless family. Of the homeless children in Wyoming, 39% were preschool age and 61% were school age. Only 3% of the homeless children were not currently attending school.

Native Americans, which comprise 2.1% of Wyoming's population, are disproportionately represented among the homeless making up 19% of this population. Blacks account for 0.8% of Wyoming's population but comprise 3% of the homeless community.[67]

Figure 6: Wyoming Population and Homeless Population by Race, 2003



Source: Wyoming Interagency Council on Homelessness, U.S. Census Bureau

Access

"Access to quality care is important to eliminate health disparities and increase the quality and years of health life for all Americans. Access to quality care across each of the components in the continuum of care must be improved to realize the full potential of prevention. People must have access to clinical preventive services that are effective in preventing disease (primary prevention) or in detecting asymptomatic disease or risk factors at early, treatable stages (secondary prevention)".[11]

Measures of access to care provide an important mechanism for evaluating the quality of health care and public health. Measuring access includes looking at indicators such as number and quality of providers and barriers to care such as financial (e.g., lack of insurance), and personal barriers such as geography, culture, language and knowledge. Persons with special needs, such as children with special health care needs, require access to providers with the requisite knowledge and skills to address their needs.[11]

Insurance

- An estimated 16.0% of Wyoming residents were without any health insurance coverage in 2003, compared to 15.6% nationally. While the percentage of uninsured Wyoming residents has not changed significantly since 1998 (16.9%), Wyoming's ranking has changed from 18 to 15 nationally.[1]
- In 2003, 12.5% of Wyoming children under 18 were not covered by health insurance at any time during the year compared to 11.4% nationally. This represents a decrease from 14.3% in 1997.[1]
- An estimated 7.3% of Wyoming children were uninsured and at or below 200% of poverty level from 2001-2003, compared to 7.5% nationally. Wyoming ranked 17th nationally.[1]
- According to the 2003 Wyoming Behavioral Risk Factor Surveillance System (BRFSS), 17.2% of respondents were uninsured. Men were more likely than women to be uninsured (17.6% vs. 16.6%). Hispanics and other minorities were more likely than white, non-Hispanics to be uninsured (29.6%, 27.1% and 15.8% respectively). Those with less than a high school degree were the most likely to be uninsured (34.1%), as were those who were not married (26.4% vs. 12.1% married).[12] The percentage of uninsured children enrolled in Wyoming's Children's Special Health program has decreased 54.2% from 29.7% to 13.6% from 1999 to 2003.[13]
- **The Healthy People 2010 goal is to reduce to 0 the percent of population not covered by health insurance.[11]**

Table 7: Percentage of Wyoming Population Lacking Health Insurance

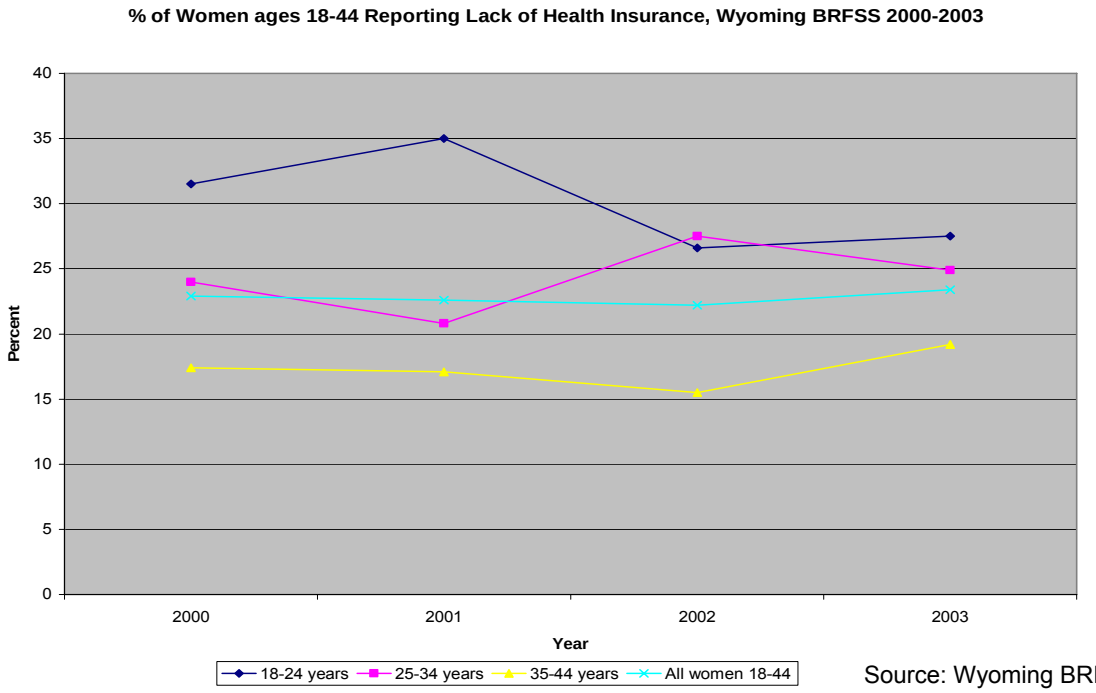
Population	% WY	% U.S.
Total population, U.S. Census Bureau (2003)	16.0	15.6
BRFSS Respondents (2003/2002)[14]	17.2	14.1
Children (2003)	12.6	11.4
Children ≤ 200% federal poverty level 2001-2003	7.3	7.5
Women ages 18-44 (BRFSS)	22.4	
Children in WY MCH CSHCN program	13.6	

In 2003, 36.9% of Wyoming children were enrolled in Medicaid compared to 13.1% in 1997, while 50.6% were covered by some other type of insurance and 12.5% were uninsured.[1, 15] Wyoming's State Children's Health Insurance Program, called Kid Care CHIP, had 3,854 children under 18 enrolled in 2003, which accounted for 51% of the 7500 Wyoming children estimated to be eligible. Currently the program covers children in families living 133%-185% of the federal poverty level (FPL), and in July 2005, eligibility was extended to 200% of FPL.[16]

Wyoming BRFSS data for 2003 revealed a slight difference in the percentage of uninsured respondents between men and women (17.6% vs. 16.6%). However, there are greater disparities in other groups. Wyoming respondents ages 18-34 were more likely to be uninsured than other age groups. The same is true for Wyoming, non-white respondents, persons with lower incomes and persons with less education.[12]

Wyoming 2003 BRFSS data revealed that lack of health insurance for women of childbearing age peaks at ages 18-24 (27.5%, 95% CI = 21.0%-35.1%), followed by ages 25-34 and 35-44 (24.9% & 19.2% respectively). The 18-24 age group has the second highest rate of birth, followed by those ages 25-34. In addition, 21.6% of women ages 25-44 reported cost as a barrier to medical care.[12]

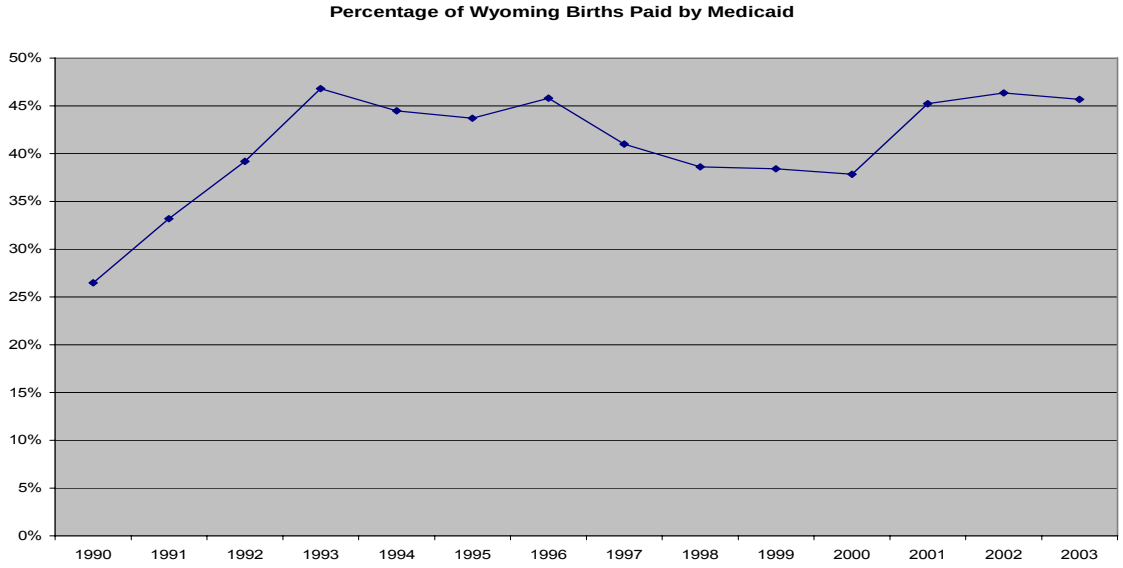
Figure 7: Percentage of Wyoming Women Ages 18-44 Reporting Lack of Health Insurance, 2000-2003



Source: Wyoming BRFSS

In 2003, an estimated 2991 births (45.7%) to Wyoming residents were paid for by Medicaid.[15] This represents an increase from 26.5% in 1990. Nationally, the percentage of births paid for by Medicaid in 1998 was about 30%. [17] A number of policies were implemented in April 2001 addressing barriers to the application process for children, pregnant women and the small number of families who would qualify for Medicaid. As a result, the increase in Wyoming Medicaid births may be attributed to the removal of the financial asset test in April 2001 as part of a major simplification effort supported by several entities, including Wyoming's Covering Kids Coalition. The asset test had been removed previously; however, it had been reestablished as a cost containment measure, and Wyoming was one of only a few states in the country to require an asset test for pregnant women in April 2001.

Figure 8: Percentage of Wyoming Births Paid by Medicaid

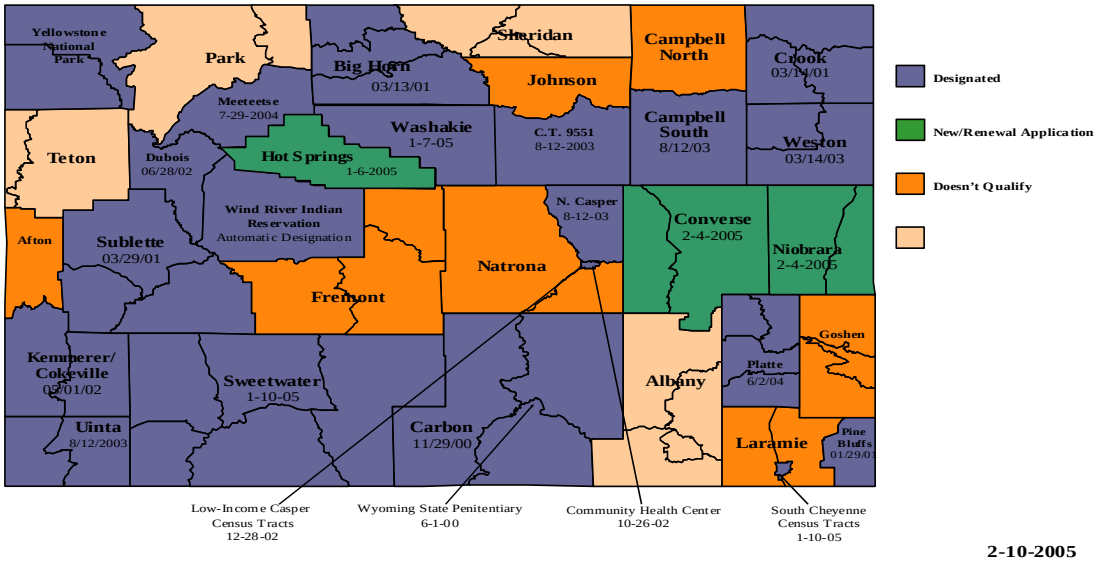


Source: Wyoming Department of Health. Office of Medicaid.

Providers

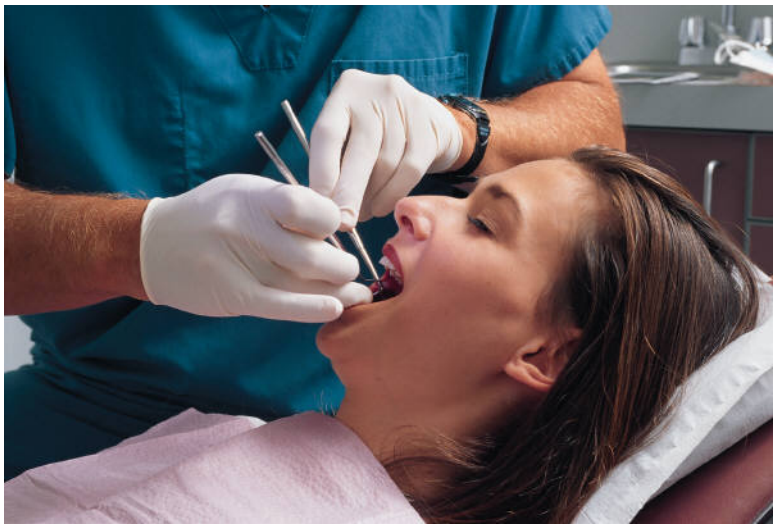
In 2005, 18 counties had been completely or partially designated as Health Professional Shortage Areas (HPSA) for primary care, twelve have been classified as Dental HPSAs and all twenty-three counties have been classified as Mental Health HPSAs.[2\\]

Figure 9: Wyoming Health Professional Shortage Areas: Primary Medical Care



There were over 760 active patient care physicians in Wyoming in 2000. With 155 physicians per 100,000 population, Wyoming was well below the national ratio of 198 physicians per 100,000. Wyoming ranked 46th among states in physicians per capita. Wyoming had 61 active primary care physicians per 100,000 population in 2000, less than the national rate of 69. The number of physicians in Wyoming increased by 26% between 1989 and 2000, while the population grew only 8% over this period, leading to a net per capita growth of 17%, equal to the national per capita increase.[3]

There are 16 public outpatient mental health centers around the state and services are provided at 37 different sites in all 23 Wyoming counties.[19] Data on physicians and midlevel providers by county are presented in Table 8. In 2004, Wyoming had 245.5 physicians per 100,000 population compared to 174.3 in 1996. In addition, there were 47.5 nurse practitioners and 36.3 physician assistants per 100,000 population in 2004 compared to 46.5 and 19.8 respectively in 1996.



The number of dental health providers for all populations is a concern, especially for children with special health care needs. The national dentist/patient ratio is 1/1750 while Wyoming has a dentist/patient ratio of less than 1/4000. Dental clients often have to wait longer than six weeks for an appointment. Some dentists will not serve Medicaid clients or children, and many do not see children with special health care needs. In addition, 107 Wyoming dentists will retire within the next 10 years. It is anticipated that there will not be a sufficient number of new dentists graduating to replace them. The state dentist is actively investigating solutions to Wyoming's dental provider shortage including recruitment strategies such as student loan repayments, and evaluation of the possibility of creating a state financed dental delivery system utilizing mobile clinics and rural dental health clinics similar to Indian Health Services

Table 8: Wyoming *Physicians by Specialty 2004

Wyoming *Physicians by Specialty 2004		Rate per 100,000	
Specialty	**Number**	**WY 2004[18]**	**U.S. (2000)[3]**
Allergy	2	0.4	1.4
Anesthesiology	54	10.8	12.8
Aerospace Medicine	0	0.0	0.2
Cardiology	17	3.4	7.5
Child and Adolescent Psychology	1	0.2	2.2
Dermatology	8	1.6	3.5
Emergency Medicine	74	14.8	8.2
Gastroenterology	8	1.6	3.8
General & Family Practice	230	45.9	30.9
General Surgery	43	8.6	13.1
Internal Medicine	107	21.3	36.3
Neurology	10	2.0	0.5
Neurological Surgery	7	1.4	1.8
Obstetrics & Gynecology	48	9.6	14.4
Opthamology	21	4.2	6.5
Orthopedic Surgery	61	12.2	8
Otorhinolaryngology	15	3.0	3.4
Pediatrics	53	10.6	18.3
Public Health	0	0.0	0.7
Plastic Surgery	4	0.8	2.2
Pulmonary Diseases	6	1.2	3.1
Psychiatry	37	7.4	14.1
Radiology	43	8.6	3.1
Thoracic Surgery	0	0.0	1.8
Urology	20	4.0	3.7

*Physicians listed have a current Wyoming address and have not retired. Source: The Wyoming Board of Medicine

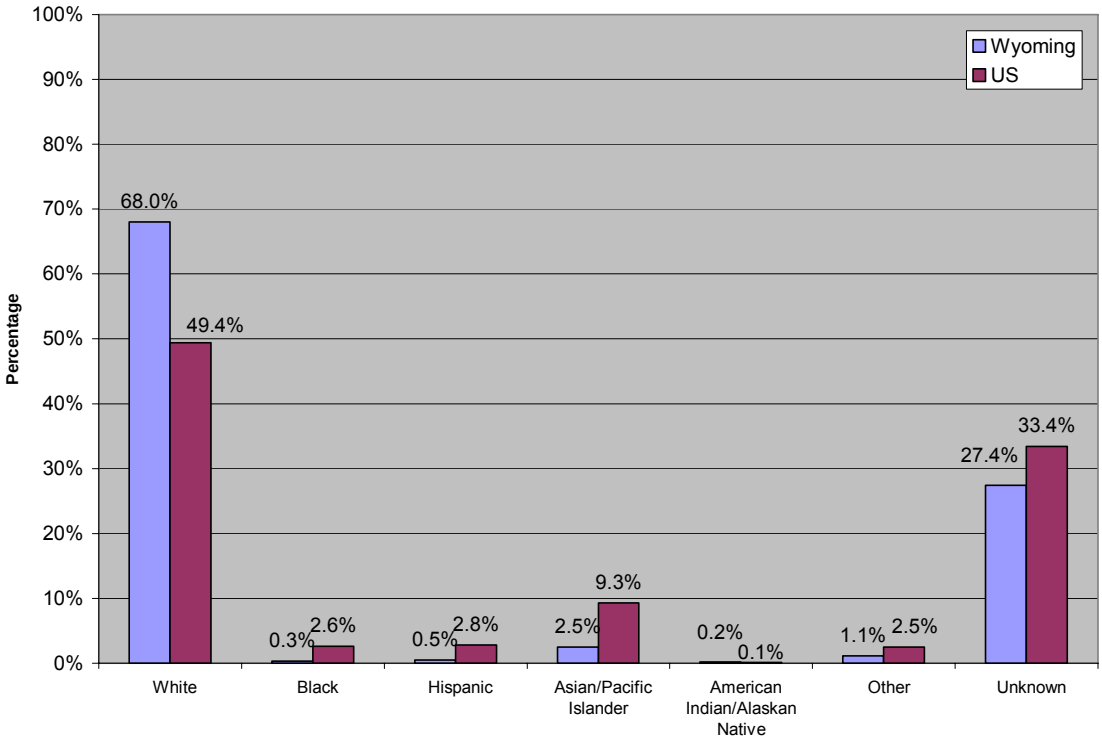
Table 9: Wyoming Physicians, Nurse Practitioners and Physician Assistants by County of Residence, 2004

County	Physicians	Nurse Practitioners	Physician Assistants
Albany	63	23	3
Big Horn	7	4	4
Campbell	47	8	2
Carbon	17	2	5
Converse	16	5	4
Crook	4	1	1
Fremont	83	12	22
Goshen	15	0	1
Hot Springs	7	0	5
Johnson	9	3	0
Laramie	184	32	16
Lincoln	13	3	3
Natrona	160	19	43
Niobrara	1	1	0
Park	60	8	18
Platte	6	4	0
Sheridan	59	8	9
Sublette	6	2	4
Sweetwater	39	6	10
Teton	88	17	13
Uinta	31	7	4
Washakie	11	3	3
Weston	5	1	2
Wyoming	868	146	169
Total per 100,000 Population	245.8	47.5	36.3

Source: Wyoming Board of Medicine, Wyoming Nursing Association

According to the Henry J. Kaiser Family Foundation, in 2002, 93.6% of Wyoming physicians were White, non-Hispanic, compared to 74.1% nationally. Less than 1% were African-American, Native American, or Hispanic/Latino and 3.4% were Asian.

Figure 10: Race/Ethnicity of Physicians - 2002



Facilities

Unchanged from 2000, two of Wyoming's 23 counties (Sublette and Niobrara) lack a functioning hospital. Of the 21 counties with hospital services, all have emergency departments while only 18 offer obstetrical care compared to 20 in 2000. Counties lacking obstetrical services include Big Horn, Crook, Niobrara, Sublette and Weston.

Table 10: Availability of Wyoming Healthcare and Daycare Facilities by Type and County.

County	Hospital	Hospital Delivery Services	Hospital Emergency Department	Title X Clinic	Non-Title X Clinics with Family Planning Services	Family Planning Services Provided by Title X Clinics from Other Counties	Daycare Providers	Public Health Nursing Office
Ibany	1	X	X	X			41	X
Big Horn	1		X			X	19	X
Campbell	1	X	X	X			59	X*
Carbon	1	X	X			X	20	X
Converse	1	X	X				20	X
Crook	1		X		X		8	X
Fremont	1	X	X			X	42	X
Goshen	1	X	X		X		25	X
Hot Springs	1	X	X			X	13	X
Johnson	1	X	X		X		12	X
Laramie	2	X	X	X			117	X
Lincoln	2	X	X			X	26	X
Natrona	1	X	X	X	X**		120	X
Niobrara	0				X		4	Part-time
Park	2	X	X	X			46	X
Platte	1	X	X		X		10	X
Sheridan	2	X	X	X			40	X
Sublette	0					X	10	X
Sweetwater	1	X	X	X			38	X
Teton	1	X	X			X	22	X
Uinta	2	X	X			X	30	X
Washakie	1	X	X	X			17	X
Weston	1		X		X		5	X
Wyoming Total	**26 Hospitals in 21 Counties**	**18 Counties**	**21 Counties**	**8 Clinics**	**7 Clinics**	**8 Sites**	**744 Providers**	**23 Counties**

Sources: Wyoming Hospital Association, Wyoming Health Council, Wyoming Department of Health, Wyoming Department of Family Services **Indicates a Planned Parenthood Site

Migrant Health

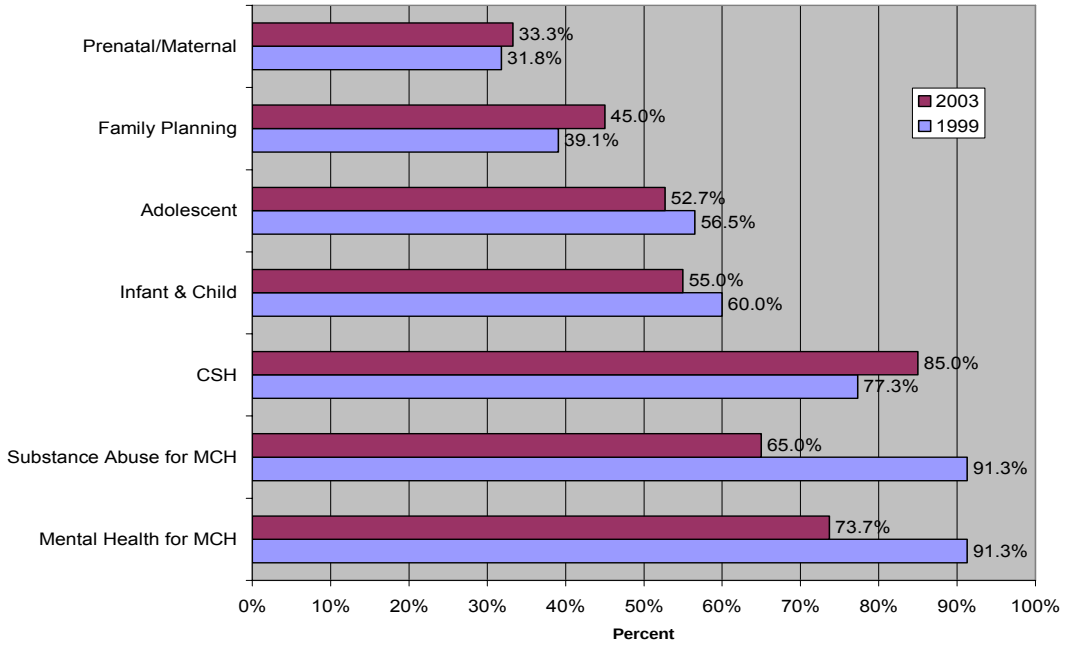
The federally funded Migrant Health Project, administered by the Wyoming Health Council, provides basic health care services through offices in Park, Washakie, Big Horn and Fremont Counties to the migrant and seasonal workers and their families. Mid-level practitioners use a voucher system to refer patients to local physicians, dentists, optometrists, hospitals, and pharmacies as necessary. In 2004, 456 children were served through the project.

Other Barriers to Access

The MCH Systems Enhancement Survey is a biannual survey of county public health nursing offices in Wyoming that began in 1999. Results from the 2003 survey indicate that 73.7% of counties reported an inadequate or no providers for mental health for the MCH population. This reflects an improvement from 91.3% in 1999. Three other categories that have improved since 1999 are substance abuse services for the MCH population, infant & child health, and adolescent health.

Increases in counties reporting inadequate or no providers from 1999 to 2003 occurred for children with special health care needs, family planning, and prenatal and maternity care.

Figure 11: Percentage of Wyoming Counties Reporting Either Inadequate Number or No Providers in Community by Type of Service



The majority of counties reported that variable health care service hours for the MCH population were absent or inadequate in 1999 and even more reported so in 2003. Nearly 90% of counties reported an inadequate number of translators in 2003, 90% of counties reported no or inadequate training opportunities in the community for providers on health beliefs and practices of culturally diverse communities and 80% reported inadequate or no health promotion/education materials/activities that reflect the language/cultural composition of the community. While most counties (21) did report having public transportation of some kind, of those who had it, 33.3% had available public transportation 24 hours a day and 100% had some sort of handicap access.

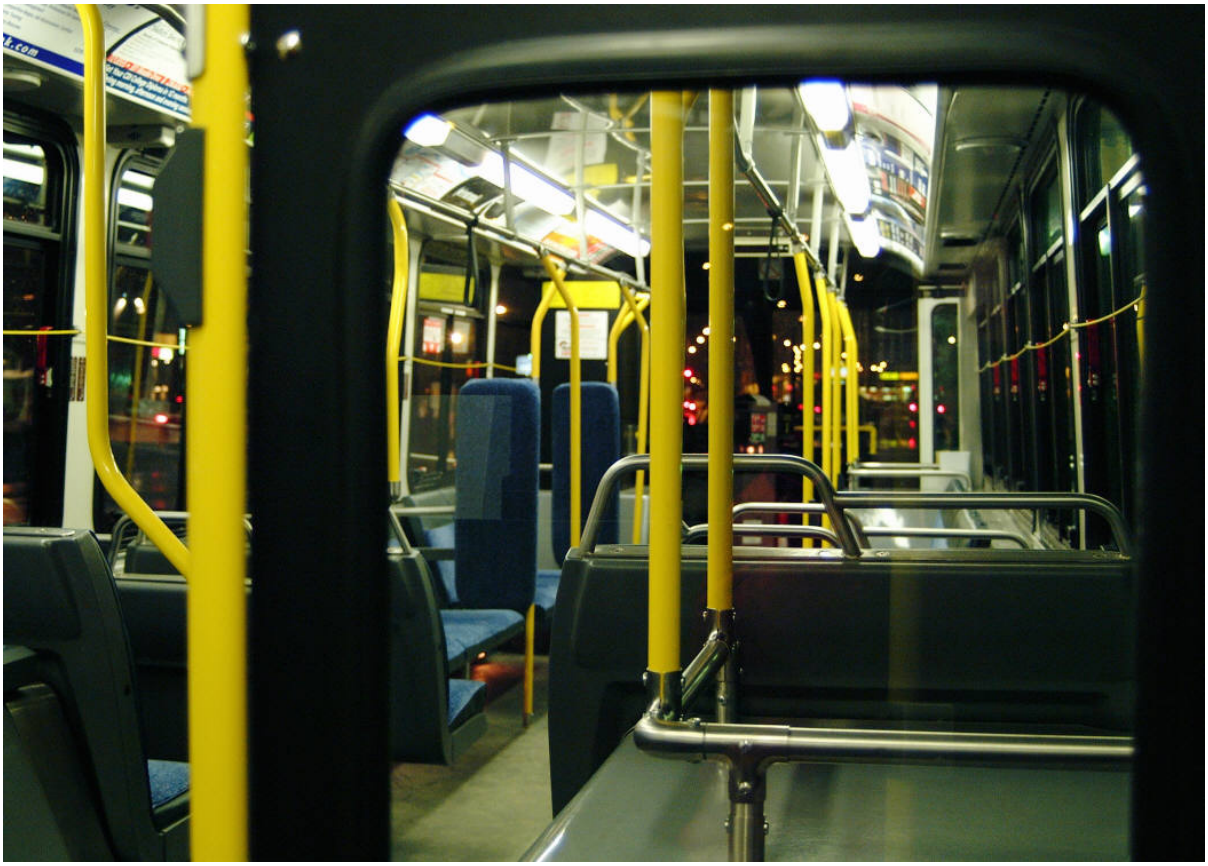


Figure 12: Available Public Transportation Assistance Services

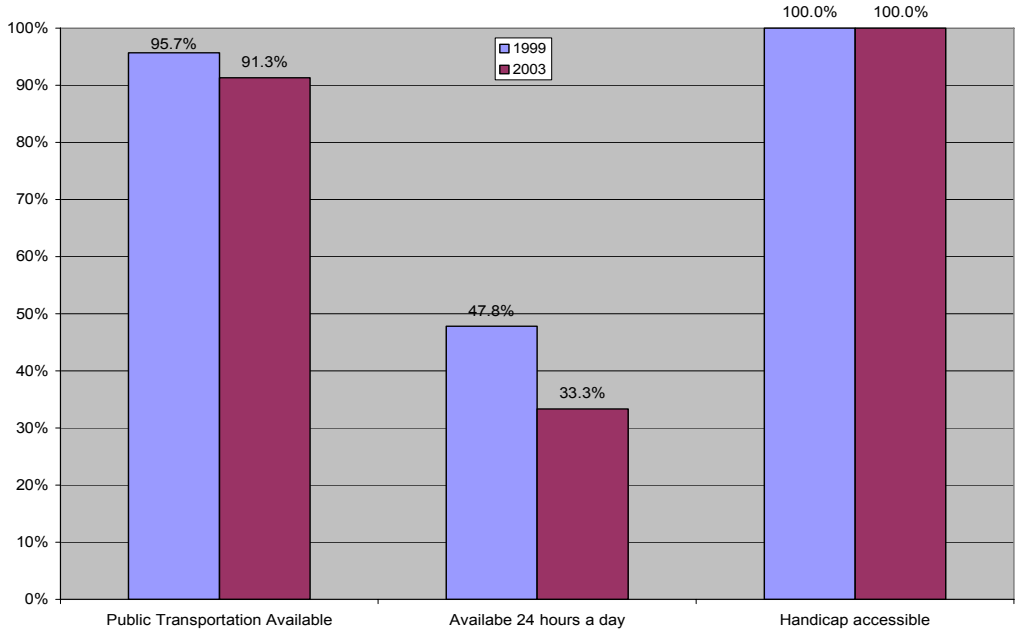
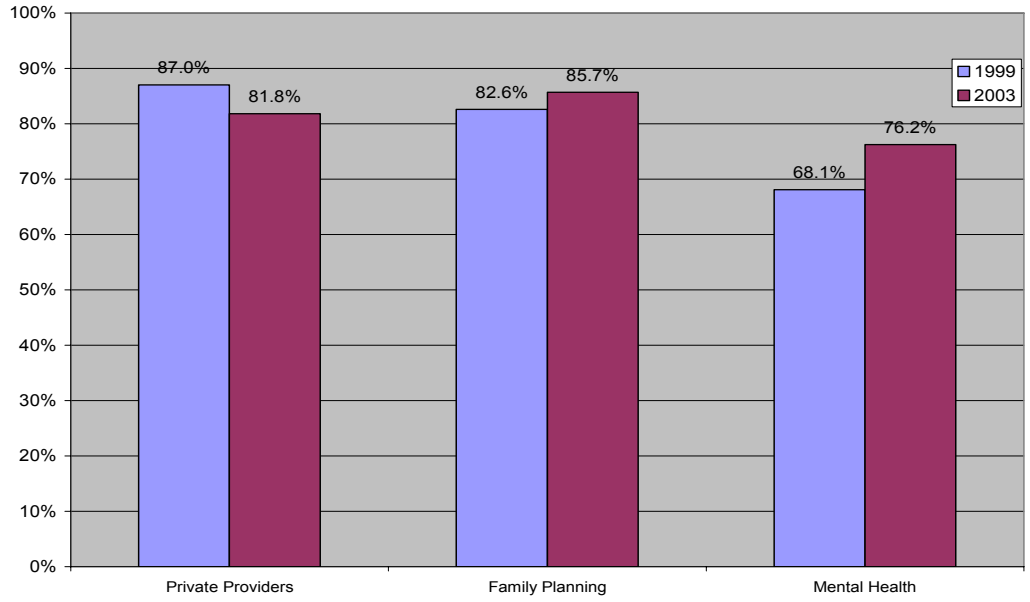


Figure 13: Percentage of Counties Reporting Variable Hours Not Available or Inadequate by Provider



In 2005, the Governor's Council on Developmental Disabilities statewide community forum sought input about barriers to care. The majority of the 580 participants identified transportation, both within the local community as well as to larger cities for treatment, as the biggest obstacle to receiving care. Families with disabilities often cannot afford the expense of public transportation if it is available to them.

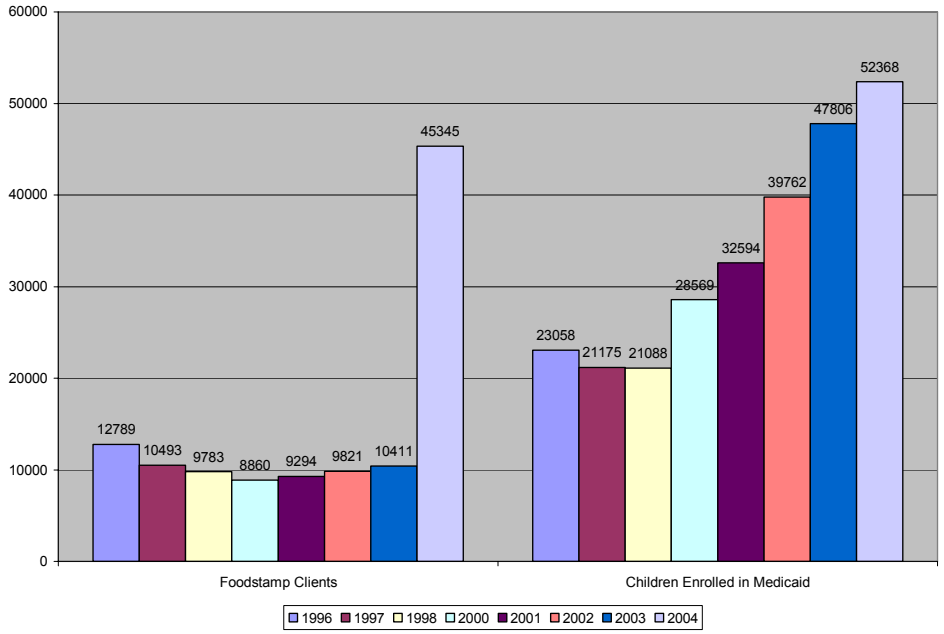
Welfare Reform

Welfare reform has had an impact in Wyoming. Immediately prior to welfare reform, in June 1996, 8,584 children received Aid to Families with Dependent Children (AFDC). In 1997, AFDC was converted to Temporary Assistance for Needy Families (TANF), which Wyoming refers to as Personal Opportunities with Employment Responsibilities (POWER). By 2002, about 831 children were receiving TANF/POWER.[20] From 2001 to 2003 POWER cases decreased by 49%.

In the late nineties, Medicaid eligibility rules were separated from TANF eligibility rules in order to allow families to continue to receive Medicaid, though they may not longer be eligible for TANF. It appeared, at the beginning, that many families left Medicaid when they became ineligible for TANF. However, Wyoming's Kid Care outreach efforts discovered that many applicants for Kid Care (CHIP) were actually eligible for Medicaid and since 1998, the number of children enrolled in Medicaid has steadily increased. In 2000, 20.8% of children under 19 were covered by Medicaid while 36.9% were covered in 2003.

Food stamp cases also appear to have stopped declining and, since 2000, are starting to increase. From 2000 to 2004, food stamp cases increased more than 5 times, due to a federal mandate to increase food stamp enrollments by 10% each year. As a result, Wyoming has conducted quite a bit of outreach, and the majority of the increase has occurred in the elderly population.[21]

Figure 14: Caseload Changes, Wyoming 1996-2004



Sources: Wyoming Department of Family Services & Wyoming Department of Health, Office of Medicaid

Maternal and Infant Health

Summary of Maternal & Infant Health Indicators

Birth Rate: From 1999-2003, there was an average of 6,350 births annually in Wyoming. The Wyoming crude birth rate (births per 1,000 population) decreased from 15.4 in 1990 to 12.7 in 1998 and remained steady until 2002 when it increased to 13.1 and to 13.4 in 2003, compared to 14.1 nationally in 2003.

Teen Births: The Wyoming teen birth rate (births per 1,000 teens ages 15-19) for 2003 was 40.5 per 1,000 from 1999-2003 compared to the U.S. rate of 43.0 in 2002. Wyoming ranked 25th nationally in 2002 for teen birth rate.

Unintended Pregnancy: In 2003, unintended pregnancy rates ranged from 49.7% of MOMS respondents to 63.4% of family planning clients to 70.1% of Best Beginnings clients.

Tobacco Use in Pregnancy: In 2003, 19.2% of women giving birth smoked during their pregnancy, compared with 11.4% nationally in 2002. The United States has seen a 42% drop in smoking during pregnancy since 1989, and a 7% drop between 1999 and 2000. While Wyoming has seen a significant decrease since 1989, it has not done as well. Smoking during pregnancy has decreased by only 18% since 1989 and 9% since 1999.

Alcohol Use in Pregnancy: Birth certificate data indicate that in 2003 1.1% of Wyoming mothers reported drinking alcohol during their pregnancy compared to 1.9% in 1996 –1998.

Illicit Drug Use in Pregnancy: Preliminary data from the 2004 Wyoming Women's Reproductive Health Study indicate that 4.6% of pregnant women who consented to the toxicologic screen were found to be using illicit substances. Of the clients in the Best Beginnings program who completed the pregnancy wellness assessment from November 2003 to May 2004, 13.3% reported having used marijuana in the past year and 5.3% report having used methamphetamine in the past year.

Prenatal Care: From 1999-2003, 83.6% of Wyoming women who gave birth received prenatal care in the first trimester, compared to 84.1% nationally in 2002. During the same time period, 11.3% of women giving birth received inadequate or no prenatal care, compared to 11.3% nationally in 2002.

Preterm Birth: The percentage of Wyoming births that were preterm in 2001-2003 was 12.1% compared to 11.6% for 1996-1998 and 11.1% nationally in 2002.

Low Birth Weight: From 1999-2003, the percentage of Wyoming babies born LBW was 8.5%, with the highest being in 9.0% in 2003. In 2002, in the United States, 7.8% of babies were born LBW. In 2002, Wyoming ranked 15th out of the U.S. states and DC overall for LBW and ranked 2nd for LBW to White, non-Hispanic mothers and 4th for LBW to Hispanic mothers.

Newborn Screening: In 2003, 98.4% of newborns born in Wyoming were screened for hearing disorders compared to 94.2% in 1999. In 2003, 97.4% of the newborns born in Wyoming were screened for phenylketonuria (PKU), congenital hypothyroidism, galactosemia, sickle cell disease, biotinedase, and cystic fibrosis compared to 99% in 1999.

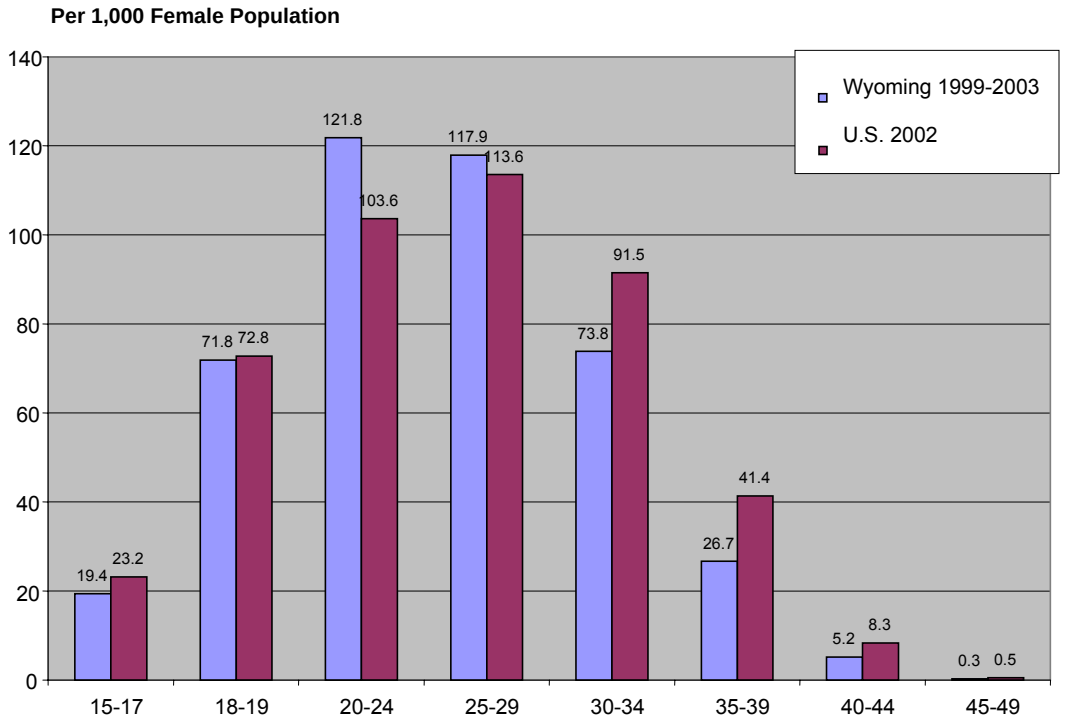
Breastfeeding: In 2003, 79.5% of Wyoming women surveyed by the annual Ross Mothers Survey reported breastfeeding at hospital discharge, compared to 66% nationally.

Infant Mortality: The IMR for Wyoming from 1999-2003 was 6.4 per 1,000 live births[17] compared to the 2002 national rate of 7.0 per 1,000.

Births and Birth Rates

From 1999-2003, there was an average of 6,350 births annually in Wyoming. The Wyoming crude birth rate (births per 1,000 population) decreased from 15.4 in 1990 to 12.7 in 1998 and remained steady until 2002 when it increased to 13.1 and to 13.4 in 2003. The United States birth rate for 2003 was 14.1 per 1,000. [23] The Wyoming fertility rate (births per 1,000 women ages 15-44) has increased from 55.4 per 1,000 in 1999 to 65.3 in 2003. The U.S. fertility rate is also increasing, and was 66.1 per 1,000 in 2003. [23] The highest age-specific rates in Wyoming are in women between the ages of 20-24. With the exception of women ages 20-29, the age-specific birth rates of Wyoming women are lower than the U.S. rates.[22]

Figure 15: Age-Specific Birth Rates, Wyoming 1999-2003 and U.S. 2002



Source: Wyoming Department of Health. Vital Records.

Pregnancy and Abortion

Accurate data on abortions and therefore on total number of pregnancies are difficult to obtain in Wyoming. By state statute, Wyoming abortion data cannot be released to the public, although the data are sent to the federal government. As of 2004, there were 3 abortion providers in Wyoming, compared to four in 1996. All 3 providers are located in the northwestern part of the state. The Alan

Guttmacher Institute (AGI) estimated that in 2000, there were 93.4 pregnancies per 1,000 women ages 15-44, compared to a U.S. pregnancy rate of 101.6. The AGI estimated that in 2000, there were 1.0 abortions per 1,000 women of reproductive age in Wyoming, compared to 21.3 per 1,000 nationally. However, these numbers represent only abortions that occurred in the state of Wyoming. Therefore, the rate of Wyoming residents obtaining abortions could be very different, depending on how many women travel out-of-state for abortions.[24] In 2003, there were 4 abortion-related hospitalizations in the state of Wyoming, at a total cost of $20,816. As with many other health-related procedures, Wyoming residents often travel to facilities in surrounding states such as Colorado, Montana, Idaho, South Dakota and Nebraska for abortions and other services.

Table 11: Hospital Charges Related to Abortion. (635-638.9 and 779.6)

	2000	2001	2002	2003	Total 2000-2003	Average 2000-2003
Number of Hospitalizations	6	2	3	4	15	3.8
Total Length of Stay (Days)	13	4	17	9	43	10.8
Average Length of Stay (Days)	2.2	2.0	5.7	2.3	2.9	2.9
Total Charges	$34,797	$14,242	$22,079	$20,816	$91,934	$22,983
Average Charge per Discharge	$5,799	$7,121	$7,360	$5,204	$6,129	$6,129

*No data reported from hospitals in Johnson, Carbon or Niobrara counties

Source: Wyoming Hospital Discharge Database

Age of Mother

Teen Births

According to the Healthy People 2010 final document, teenage pregnancies are concerning for many reasons:

> "Teenaged mothers are less likely to get or stay married, less likely to complete high school or college, and more likely to require public assistance and to live in poverty than their peers who are not mothers. Infants born to teenaged mothers, especially mothers under age 15 years, are more likely to suffer from low birth weight, neonatal death, and sudden infant death syndrome. The infants may be at greater risk of child abuse, neglect, and behavioral and educational problems at later stages. Estimates of the overall cost to U.S. taxpayers for teenage childbearing range between $7 billion and $15 billion a year, mainly attributed to higher public assistance costs, foregone tax revenues resulting from changes in productivity of teen parents, increased child welfare, and higher criminal justice costs".[11]

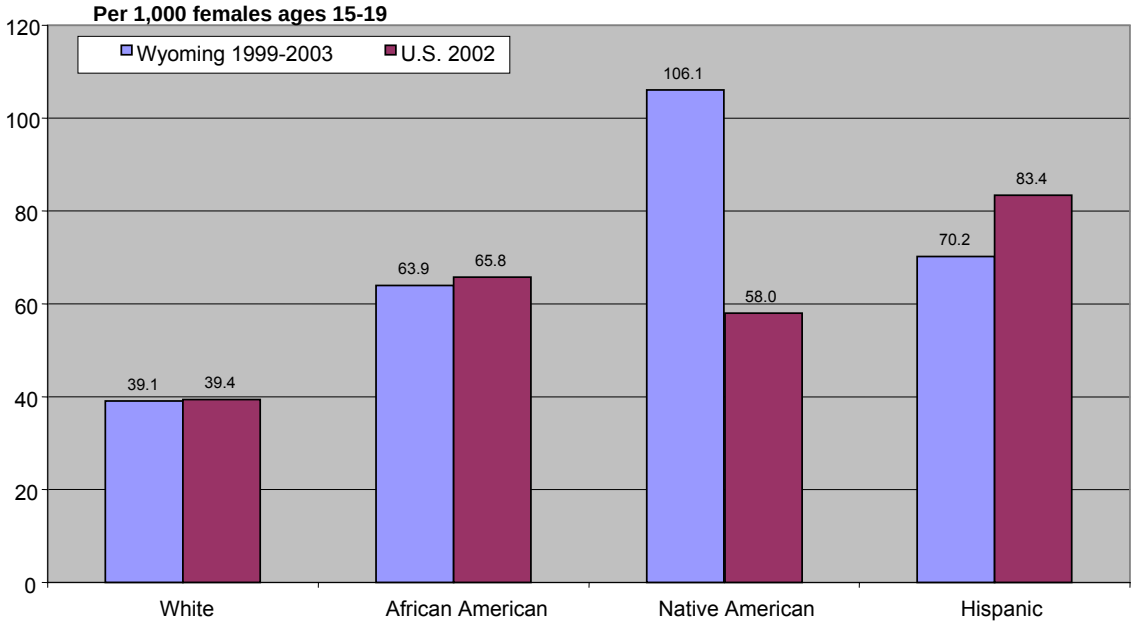
The Wyoming teen birth rate (births per 1,000 females ages 15-19) for 2003 was 40.5 per 1,000 from 1999-2003 compared to the U.S. rate of 43.0 in 2002. Wyoming ranked 25th nationally in 2002 for teen birth rate.

From 1999-2003, 3.8% of births in Wyoming were to females under the age of 18. The teen birth rate in Wyoming has steadily declined since 1980 when the rate was approximately 70 per 1,000. From 1995 to 2003, the teen birth rate in Wyoming declined from 47.2 to 41.0. From 1999-2003, 69.9% of teen births (ages 15-19) in Wyoming were to unmarried females, compared to 74.6% nationally. According to AGI, the Wyoming teen pregnancy rate in 2000 was 77 per 1,000 teens compared to the U.S. rate of 84 per 1,000. **The Healthy People 2010 objective is to reduce teenage pregnancy to no more than 46 per 1,000 teens.**[11]

In 2003, 3.7% of Wyoming high school students responding to the Youth Risk Behavior Survey (YRBS) reported they had ever been pregnant or gotten someone pregnant (2.8% male & 4.7% female), compared to 5.7% in 1995 [25] and 4.2% nationally in 2003.[26]

Teen birth rates are higher in Wyoming minorities than in Whites (Figure 16). Based on 95% confidence intervals, Wyoming teen birth rates for African American, Native American and Hispanic teens were significantly higher than for Whites. Compared to the nation, the overall teen birth rate for Wyoming is significantly lower, and teen birth rates in Wyoming are lower than the national rates for all racial/ethnic groups except Native Americans.[22, 23]

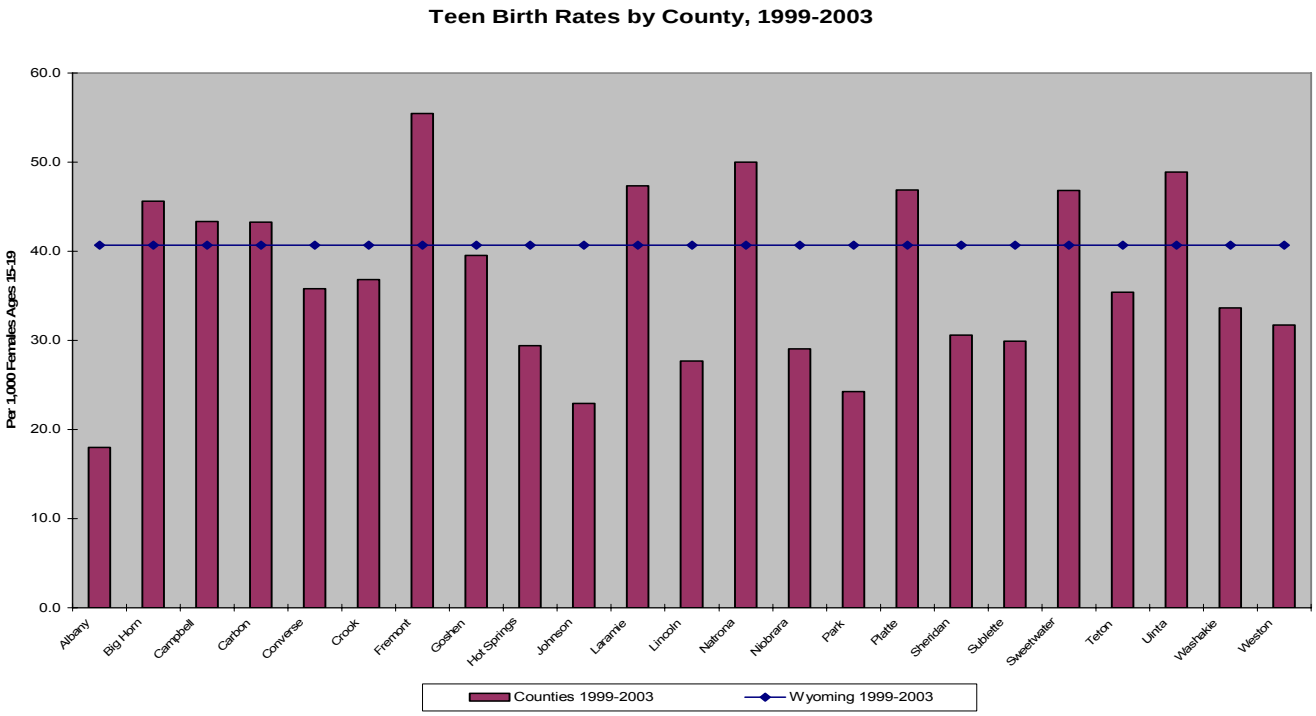
Figure 16: Teen Birth Rates by Race/Ethnicity, 1999-2003



Sources: Wyoming Department of Health, Vital Records.
Centers for Disease Control & Prevention, National Center for Health Statistics.

Wyoming county-specific teen birth rates are listed in Appendix A. **Caution should be used when looking at these data due to small numbers.** As shown in Figure 17, Wyoming counties with the highest teen birth rates from 1999-2003 were Fremont (55.5/1,000), Natrona (50.0/1,000) and Uinta (48.9/1000). Counties with the lowest rates were Albany (18.0/1,000), Johnson (22.9/1,000) and Park (24.2/1,000).

Figure 17: Teen Birth Rates by County, 1999-2003



Source: Wyoming Department of Health, Vital Records.

Maternal Age Greater than 40

From 1999-2003, the number of live births to women over aged 40 and over averaged 112 per year (1.8% of all live births). Although the numbers are small, pregnancies to older women are associated with a greater risk for maternal mortality and morbidity, such as high blood pressure and diabetes. Infants born to women aged 40 and over are at increased risk for chromosomal defects and congenital malformations. For example, women aged 25 have a 1 in 1,250 chance of having a baby with Downs Syndrome. By age 40, their chance is 1 in 100 and by age 45, 1 in 30. Older first time mothers are also at greater risk of having placenta previa or a low birth weight or premature baby. First time mothers over 40 also have the highest chance of caesarean-section (43%) compared to first time mothers in their 20's (14%).[27]

The number of live births to women age 40 and over in Wyoming increased from 58 in 1990 to 92 in 1998 to 99 in 2003. The age specific birth rate for women ages 40-44 increased from 3.9 per 1,000 in 1989-1991 to 5.1 in 1996-1998 and has held steady since then. The 2001-2003 age specific birth rate to women ages 40-44 was 5.0 per 1,000. The U.S. rate for women ages 40-44 in 2002 was 8.3 per 1,000. As more women delay childbearing and the number of older women increases in this country, the number of births to older women will likely continue to increase.[22, 23]

Table 12: Wyoming Age-Specific Birth Rates for Older Women

	Ages 40-44	Ages 45+
Wyoming 1989-1991	3.9	0.2
Wyoming 1996-1998	5.1	0.2
Wyoming 2001-2003	5.0	0.3
U.S. 1998	7.3	0.4
U.S. 2002	8.3	0.5

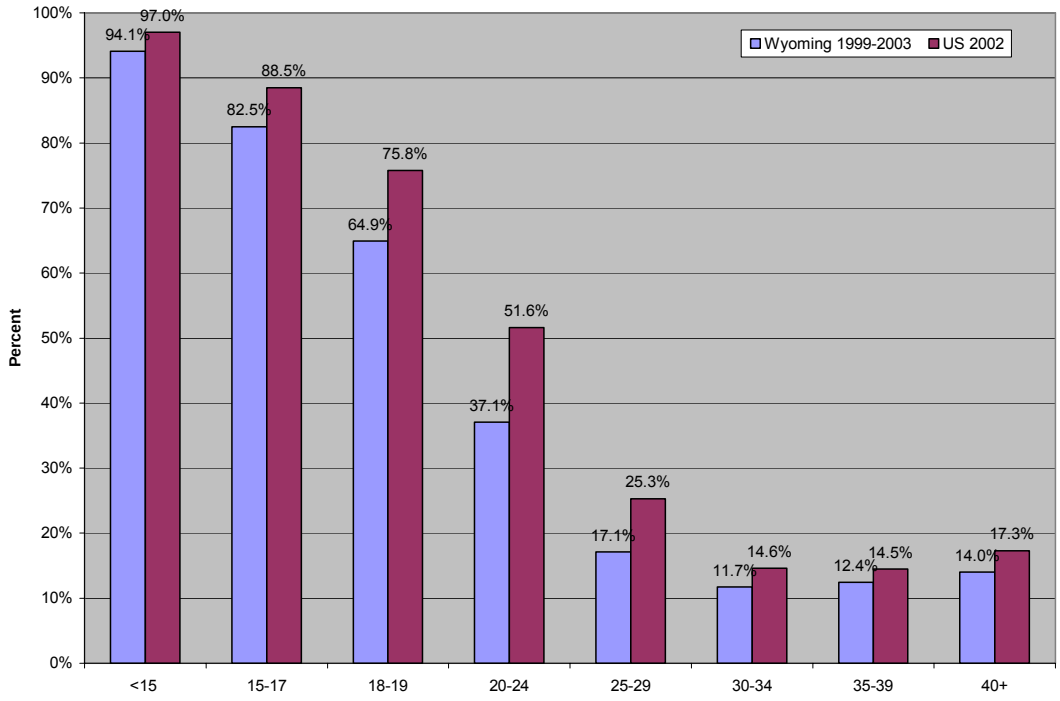
Source: Wyoming Department of Health, Vital Records., National Center for Health Statistics

Births to Unmarried Women

Single marital status by itself may not be a risk factor for adverse birth outcomes; however, single women are more likely to have unintended pregnancies.[48] Unintended pregnancy is associated with delayed prenatal care, higher rates of substance abuse during pregnancy, low birth weight births, and higher infant mortality rates.[11]

From 1999-2003, there was an average of 2,437 births annually to unmarried women in Wyoming. This represents 38.4% of all births in the state, compared to 34.6% nationally in 2003.[22,23] In both Wyoming and the United States, teens have the highest percentages of births to unmarried mothers.

Figure 18: Percentage of Births to Unmarried Women by Age, Wyoming and United States



Sources: Wyoming Department of Health, Vital Records.
Centers for Disease Control & Prevention, National Center for Health Statistics.

In Wyoming, African American, Native American and Hispanic women have significantly higher proportions of births to unmarried women than White women. In Wyoming, all racial/ethnic groups, except African Americans have higher proportions of unmarried births than their national counterparts, which is a change from 1996-1998 when all groups, except Native Americans had lower proportions of unmarried births than their national counterparts.

Wyoming county-specific data on pregnancies to unmarried women are available in Appendix A. **Caution should be used when interpreting these data due to small numbers.** Counties with the highest proportion of births to unmarried women in 1999-2003 were Fremont (46.3%), Natrona (37.6%) and Niobrara (32.7%). Counties with the lowest proportion of births to unmarried mothers were Sublette (16.8%), Lincoln (17.1%) and Albany (20.0%).[22]

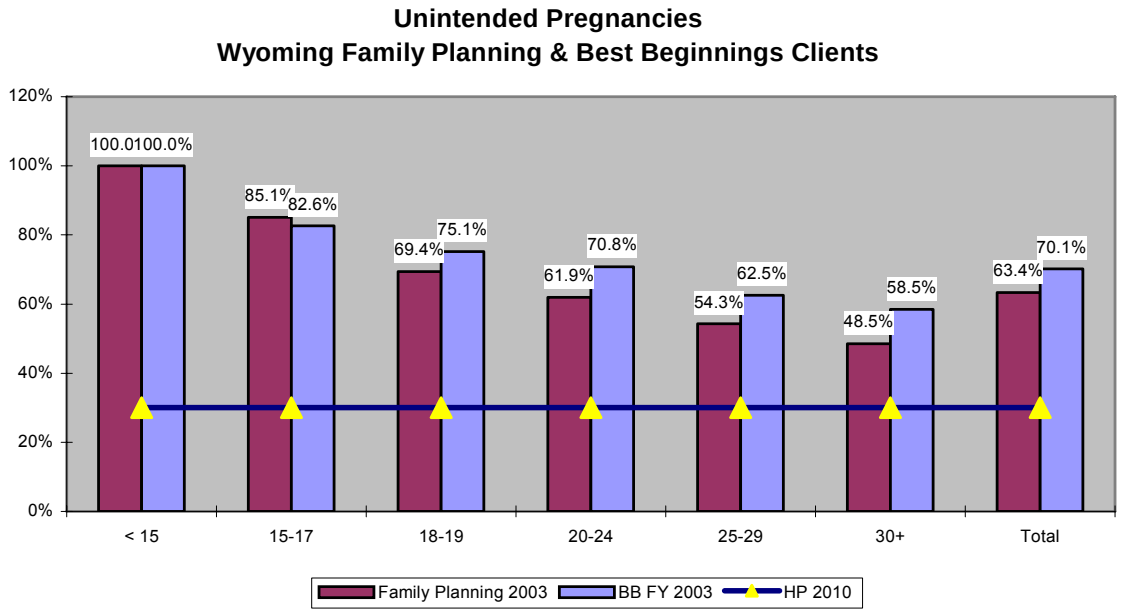
Unintended Pregnancy

National estimates of unintended pregnancy indicate that 49% of all pregnancies (excluding miscarriages) and 31% of live births in the United States are unintended.[11]

The Wyoming Maternal Outcome Monitoring System (MOMS) provides statewide, representative data on Wyoming women who have given birth. Data from 2003 show that 41.0% of Wyoming mothers either did not want to be pregnant or wanted to conceive later.[63] Data for more specific populations show that in 2003, 63.4% of all pregnant clients at Wyoming's family planning clinics reported that their current pregnancy was unintended. Women under 15 followed by women ages 15 to 17 had the highest percentages of unintended pregnancy.

There were no significant differences between rates of unintended pregnancy for family planning clients and clients of Best Beginnings, an MCH perinatal program. More than 70% of Best Beginnings clients from fiscal year 2003 reported their current pregnancy was unplanned. Among clients who were under the age of 18, 83.6% from Best Beginnings and 85.9% from family planning clinics reported that their pregnancies were unplanned. **The Healthy People 2010 objective is to increase the percentage of *intended* pregnancies to 70%, therefore reducing unintended pregnancies to no more than 30%.**[11]

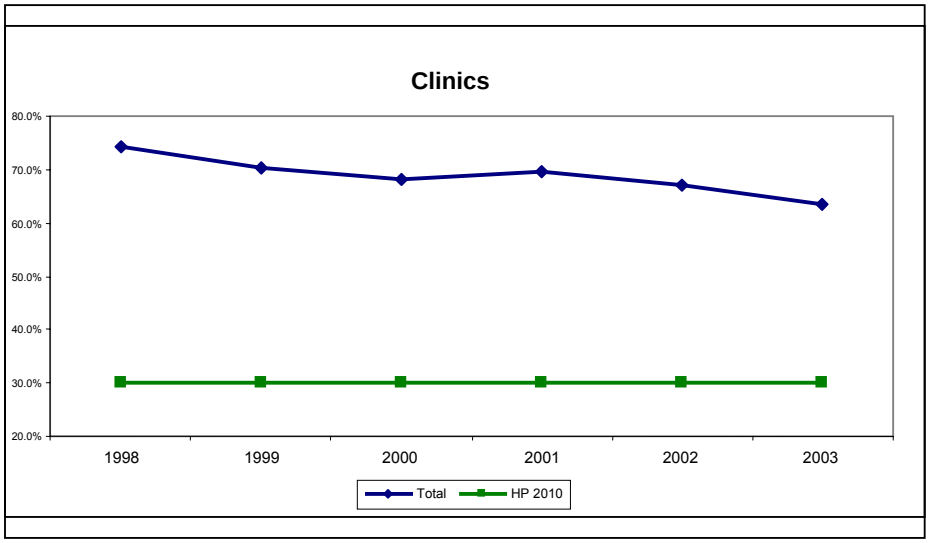
Figure 19: Unintended Pregnancies Family Planning & Best Beginnings Clients



Source: Best Beginnings, Ahlers Data

Data from the Wyoming Family Planning clinics show that the trend for unintended pregnancies has decreased 14.7% since 1998, which is statistically significant (X^2 test for trends, $p < .0001$). Unintended pregnancy rates have decreased significantly in women ages 20-24 and women 30 and over (15.6% and 30.9% respectively).

Figure 20: Unintended Pregnancies - Wyoming Family Planning

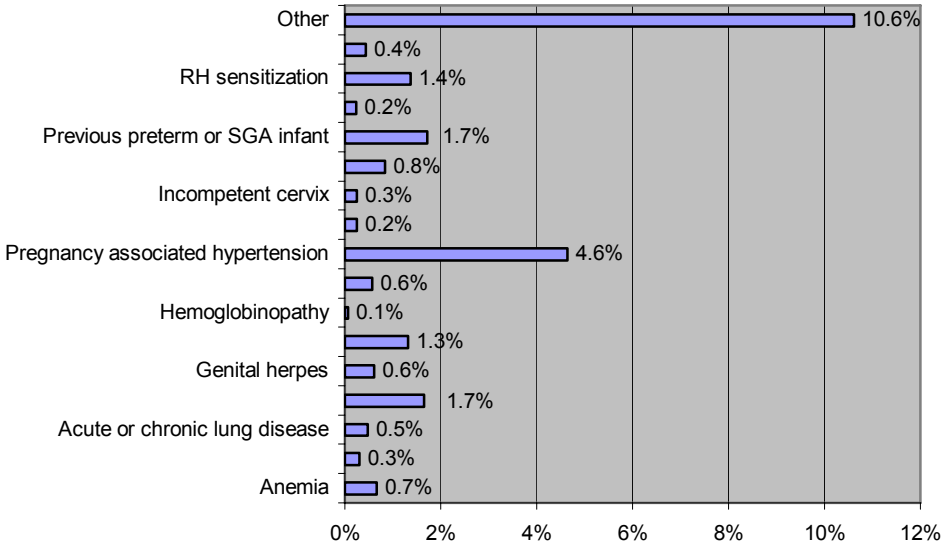


Source: Wyoming Health Council. AHLERS Data.

Medical Risk Factors

From 2001 to 2003, 26.1% of Wyoming births had at least one medical risk factor present. Nearly 11% of these risk factors are identified only as other. Of the remainder, the most common, occurring in 4.6% of births, was pregnancy-associated hypertension.[22]

Figure 21: Percentage of Wyoming Births with Various Medical Risk Factors Present, 2001-2003



Source: Wyoming Vital Records

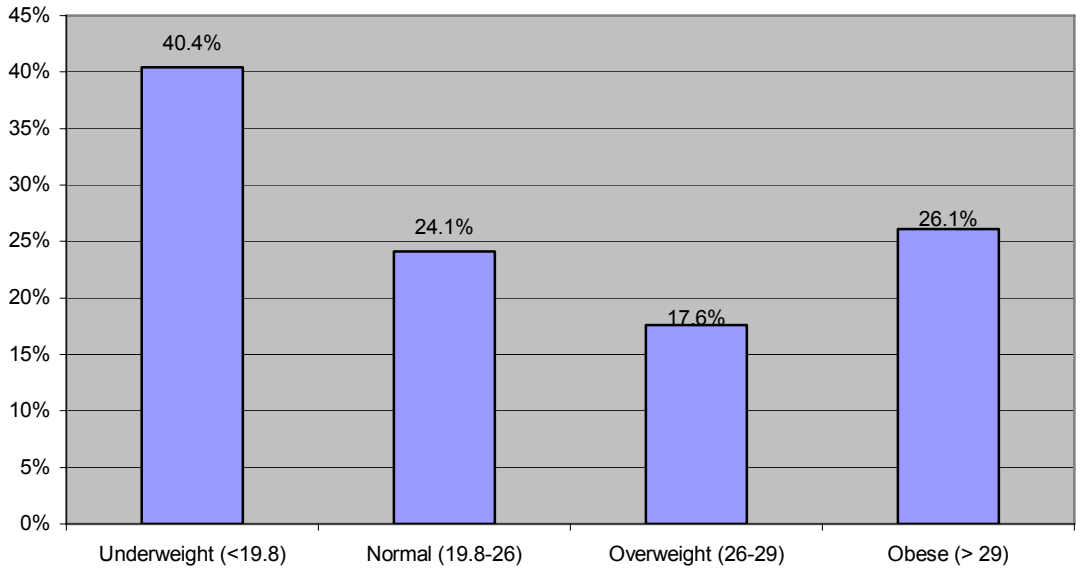
Maternal Weight Gain

In a 2004 Wyoming Department of Health study, a statistical model was built to determine which variables and multiplicative interactions are important in explaining LBW in Wyoming. The model was based on 29,922 birth certificates for births to Wyoming residents from 1998 to 2002. As in a similar Colorado Department of Public Health and Environment [28] study in which they identified inadequate maternal weight gain as the leading cause of LBW in the state, maternal weight gain was identified by our model as an important factor in explaining LBW in Wyoming. Maternal weight gain differed in normal birth weight and low birth weight births. Over 20% of LBW mothers gained less than 15 pounds during their pregnancy compared to 11% of normal birth weight (NBW) mothers. The effect of maternal weight gain depended on the altitude of maternal residence. Among women who lived at altitudes $\geq$5000 feet, those who gained less than 15 pounds during pregnancy were 3.6 times as likely to have a LBW birth as those who gained 15 pounds or more. The effect was less (OR=1.93) at lower altitudes. The effect of a weight gain of less than 15 pounds on LBW was also exacerbated in non-smokers and in women under 20.[29]

In 2003, 14.3% of Wyoming women gained 15 pounds or less during pregnancy compared to 10.8% in 1998. The majority of women, 67%, gained between 16 and 40 pounds while 10.5% gained 46 pounds or more compared to 10.9% in 1998.

Institute of Medicine guidelines from 1990 recommend that women who are underweight (low body mass index (BMI)) gain 28-40 pounds during pregnancy, those of normal weight (average BMI) gain 25-35 pounds, those who are overweight (high BMI) gain 15-25 pounds, and obese women gain at least 15 pounds.[30] Because information is not currently collected on the birth certificate for pre-pregnancy weight and height, we cannot calculate BMI for women giving birth in Wyoming based on birth certificate data. In 2003, Wyoming's Maternal Child Health Section implemented the Maternal Outcome Monitoring System (MOMS) survey following methodology used in the Centers for Disease Control and Prevention's Pregnancy Risk Assessment Monitoring System. This survey collects both BMI and pregnancy weight gain data. According to 2003 MOMS data, 25.9% of women gained an inadequate amount of weight during their pregnancy. As shown in Figure 22, the highest percentage of inadequate weight gain was among underweight women followed by obese women.[63]

Figure 22: Percentage of 2003 MOMS Respondents With Inadequate Weight Gain by BMI



Source: Wyoming MOMS

Substance Use During Pregnancy

Use of tobacco, alcohol and drugs during pregnancy is associated with miscarriage, low birth weight, premature birth, increased infant morbidity and mortality, fetal alcohol syndrome and some birth defects. Other maternal and child health indicators associated with alcohol and drug use during pregnancy include single marital status, having a chemically dependent partner, poverty, being a victim of domestic violence, lack of health care, and a history of sexually transmitted disease.[11]

Data on tobacco and alcohol use during pregnancy are available for all births from Wyoming birth certificates. However, accurate information on the number of women who smoke or use alcohol during pregnancy is difficult to obtain due to underreporting on the birth certificates.[31] However, since birth certificate data are available for all births and multiple years, the data that follow are from birth certificates, unless otherwise stated. Despite the biases involved in using birth certificate data, they are very effective for following trends over time. Data on illicit drug use are harder to obtain, since drug use is not reported on Wyoming birth certificates. Estimates on the national prevalence of illicit drug use during pregnancy range from 8% to 20%.

In 2004, Wyoming MCH conducted the Wyoming Women's Reproductive Health Study. This is a cross-sectional study of 1,149 women of reproductive age (15-44). Participants were free to choose any or all of the following sections in which to participate: a 120 question survey, a urine sample for illicit drug use and cotinine use, a urine sample for gonorrhea and chlamydia testing and a vaginal swab that was analyzed for bacterial vaginosis using the Nugent method. About

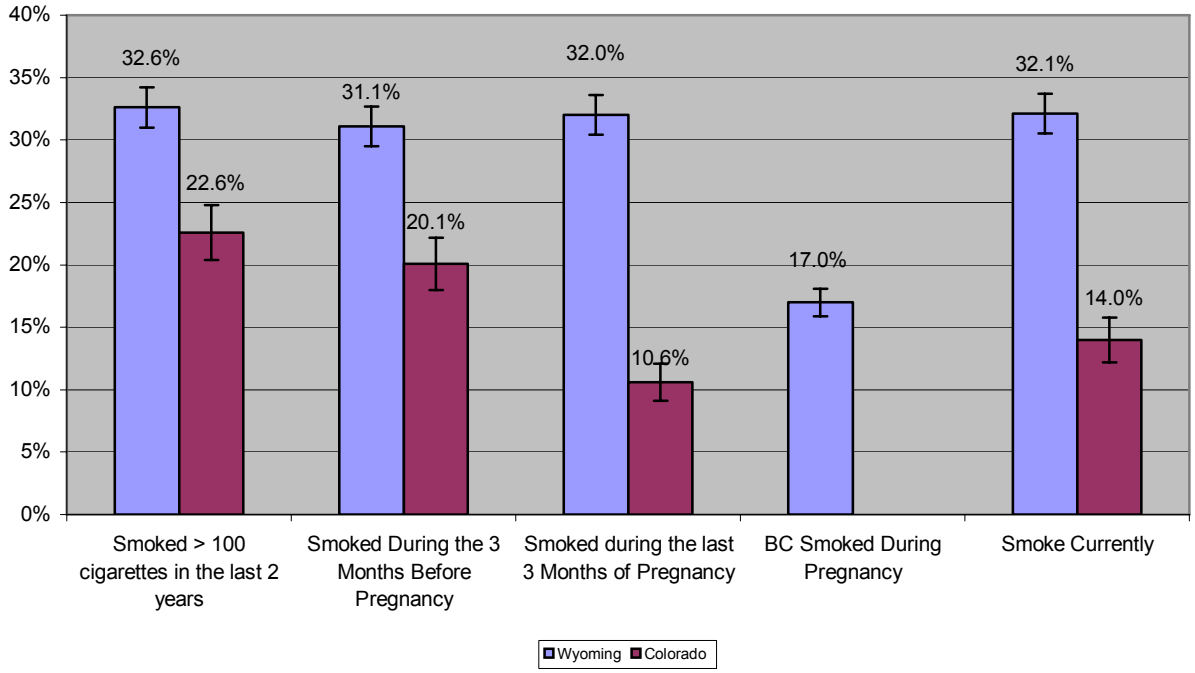
23 family planning, public health nursing and private providers participated in the study and subjects were recruited from 22 counties. Of the 1149 women included in the study, 68.2% participated in the drug screen. Nine percent of the participants were pregnant at the time of the study; however, the study was conducted on women of reproductive age because any of those women could potentially become pregnant. Preliminary data indicate that of the pregnant women who consented to the toxicologic screen, 4.6% were found to be using illicit substances. Data are expected to be finalized by December 2005.

Tobacco Use

Smoking during pregnancy is associated with an increased risk for low birth weight births, preterm labor, SIDS and fetal and infant death. Smoking accounts for 20% of all low birth weight deliveries. Women with unintended pregnancies are up to 30% more likely to smoke than women with intended pregnancies.[11]

From 1999-2003, 20.9% of women giving birth in Wyoming reported smoking tobacco during pregnancy, compared to 11.0% in the United States in 2003.[23] Data from 2003 MOMS showed that of women who delivered in 2003, 32.6% smoked more than 100 cigarettes in the last 2 years, 31.1% smoked during the 3 months before pregnancy, 32.0% smoked in the last 3 months of pregnancy and 32.10% smoke currently.[63] Figure 23 shows the disparities between Wyoming and neighboring Colorado.

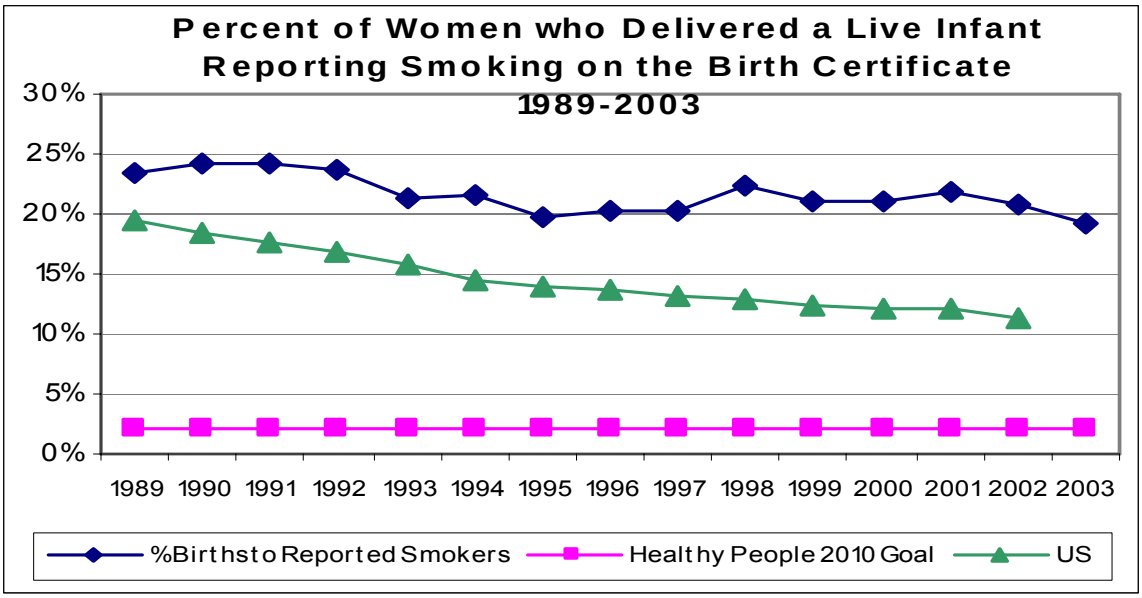
Figure 23: Percentage of MOMS/PRAMS Respondents Who Smoked 2003



Sources: Wyoming MOMS, Colorado PRAMS

In 2003, 19.2% of women giving birth smoked during their pregnancy, compared with 11.4% nationally in 2002. The United States has seen a 42% drop in smoking during pregnancy since 1989, and a 7% drop between 1999 and 2000. While Wyoming has seen a significant decrease since 1989, it has not done as well as the nation. Smoking during pregnancy has decreased by only 18% since 1989 and 9% since 1999. In 2002 Wyoming had the third highest percentage of smoking among pregnant women in the nation behind only Kentucky and West Virginia.[64] **The Healthy People 2010 goal is to reduce the percentage of women smoking tobacco during pregnancy to no more than 2%.[11]**

Figure 24: Percent of Women Who Delivered a Live Infant Reporting Smoking on the Birth Certificate



In 2003, maternal smoking was highest among women ages 18-19, (31.2%), and among women ages 20-24 (,26.8%). The percentage of mothers who smoked increased as the level of education decreased. Of women with greater than a high school education, 9% smoked compared to 25.3% of women with a high school diploma and 37.8% of those with less than a high school education. Smoking among pregnant women also differed by race and ethnicity. While only 11.1% of Black mothers smoked, 19.3% of White women and 23.6% of Native American women smoked during pregnancy. Percentages were also lower among Hispanic women with only 10.5% smoking during pregnancy compared to 20.3% of non-Hispanics.

Maternal smoking also plays a role in low birth weight. While 18.4% of mothers of normal birth weight infants smoked, 28.6% of mothers of LBW infants smoked.[22]

Wyoming county-specific data on women who report smoking during pregnancy are available in Appendix A. **Caution should be used when interpreting these data due to small numbers.** The counties with the highest proportion of births to women who smoke and gave birth in 1999-2003 were Sweetwater (29.1%), Weston (26.8%) and Campbell (26.7%). Counties with the lowest proportion were Teton (5.2%), Albany (8.8%) and Lincoln (14.3%).[22]

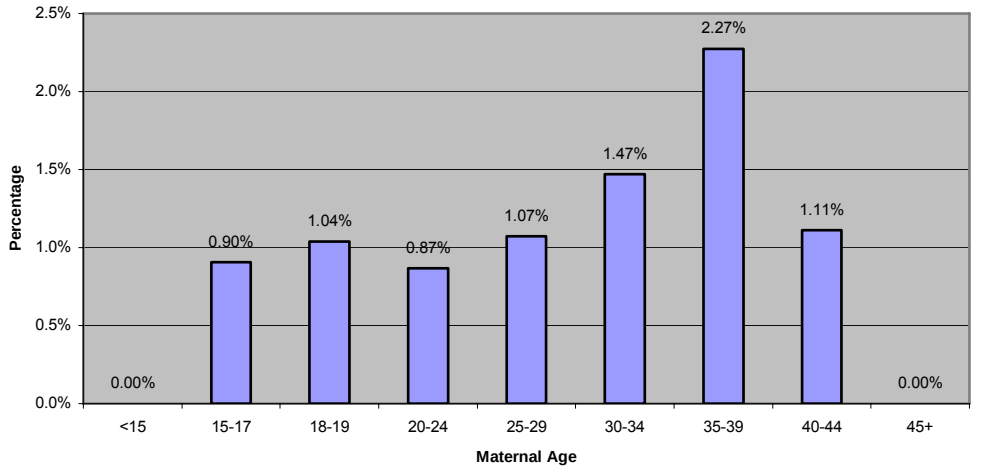
Alcohol Use

Alcohol use has been called "the leading preventable cause of birth defects." [32] Use of alcohol during pregnancy is associated with low birth weight, infant mortality, neurological conditions associated with alcohol consumption, and developmental disabilities in the infant. Maternal and child health indicators associated with alcohol use include single marital status, low socioeconomic status and lack of early prenatal care.[11]

Birth certificate data indicate that in 2003 1.1% of Wyoming mothers reported drinking alcohol during their pregnancy compared to 1.9% from 1996-1998. The percentage differed by maternal race and ethnicity with 1.1% of White mothers reporting drinking during pregnancy compared to 2.73% of Native American mothers. More Hispanic mothers reported drinking during pregnancy (1.6%) than non-Hispanic mothers (1.1%). Additional data by race are unavailable due to small numbers.

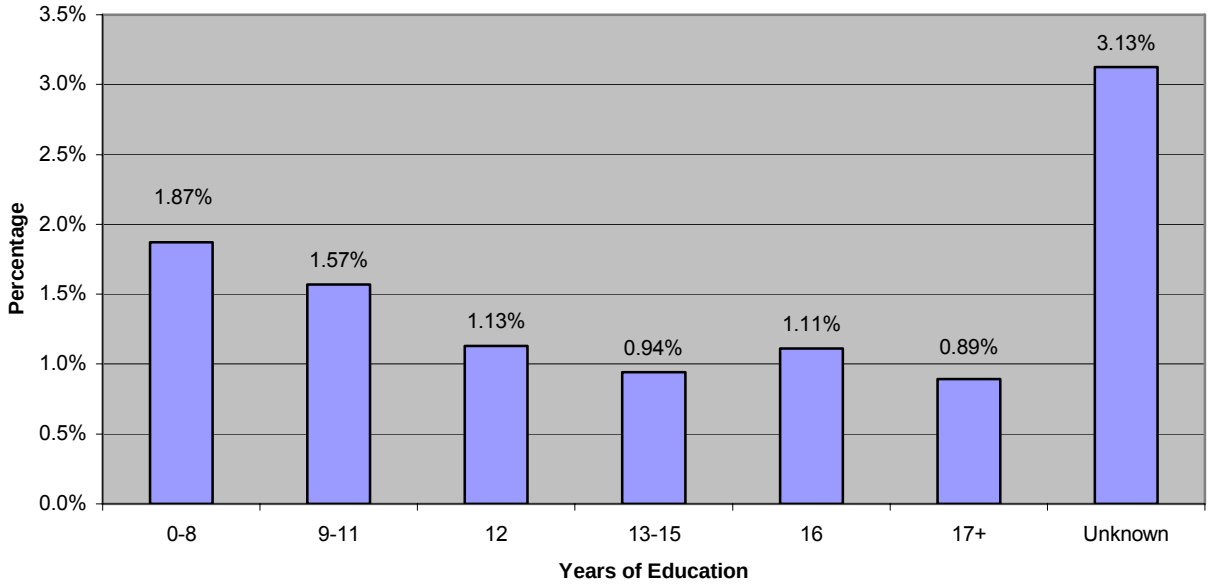
The percentage of Wyoming mothers reporting alcohol use during pregnancy in 2003 differed by maternal age as shown in Figure 25. In general, the percentage of women drinking during pregnancy increased with increasing maternal age to ages 35-39 after which it decreased. Alcohol use during pregnancy also differed by maternal education level. In general, maternal alcohol use decreased as level of maternal education increased. The highest percentage of maternal alcohol use was found in mothers who did not report their education level.[22]

Figure 25: Percentage of Live Births with Reported Maternal Alcohol Use by Maternal Age, Wyoming, 2003



Source: Wyoming Vital Records

Figure 26: Percentage of Live Births in Wyoming with Reported Maternal Alcohol Use by Maternal Education Level, Wyoming 2003



Other sources report higher levels of maternal alcohol use. In the 2003 MOMS survey, 4.5% of women reported drinking alcohol during the last three months of pregnancy, and 0.5% reported binge drinking at least once during their last three months of pregnancy.[63]

The Healthy People 2010 Goal is for 94% of women to abstain from drinking during pregnancy. Wyoming has met this goal. Birth certificate data indicate that rates of fetal alcohol syndrome (FAS) in Wyoming are relatively low. From 2001 to 2003, the rate of FAS in Wyoming as reported on birth certificates was 0.2 cases per 1,000 births compared to 0.8 per 1,000 nationally. However, because alcohol consumption is known to be underreported on birth certificates and FAS/FAE is not always evident at birth, better surveillance is necessary to determine the true burden of FAS in Wyoming.[22]

Illicit Drug Use During Pregnancy

Illicit drug use is on the rise in the United States, but there are less data on the effects of drug use during pregnancy than on alcohol use. Cocaine has been associated with decreased blood flow to the placenta, increased blood pressure and heart rate, and an increased incidence of placental abruption. Some studies have associated cocaine use with low birth weight, small head circumference and Sudden Infant Death Syndrome.[11]

As reported previously, 4.6% of pregnant women in the WWRHS who consented to the toxicologic screen were found to be using illicit substances. Of the clients in the Best Beginnings program who completed the pregnancy wellness assessment, 13.3% reported having used marijuana in the past year and 5.3% report having used methamphetamine in the past year.

Medical Service Utilization

Prenatal Care

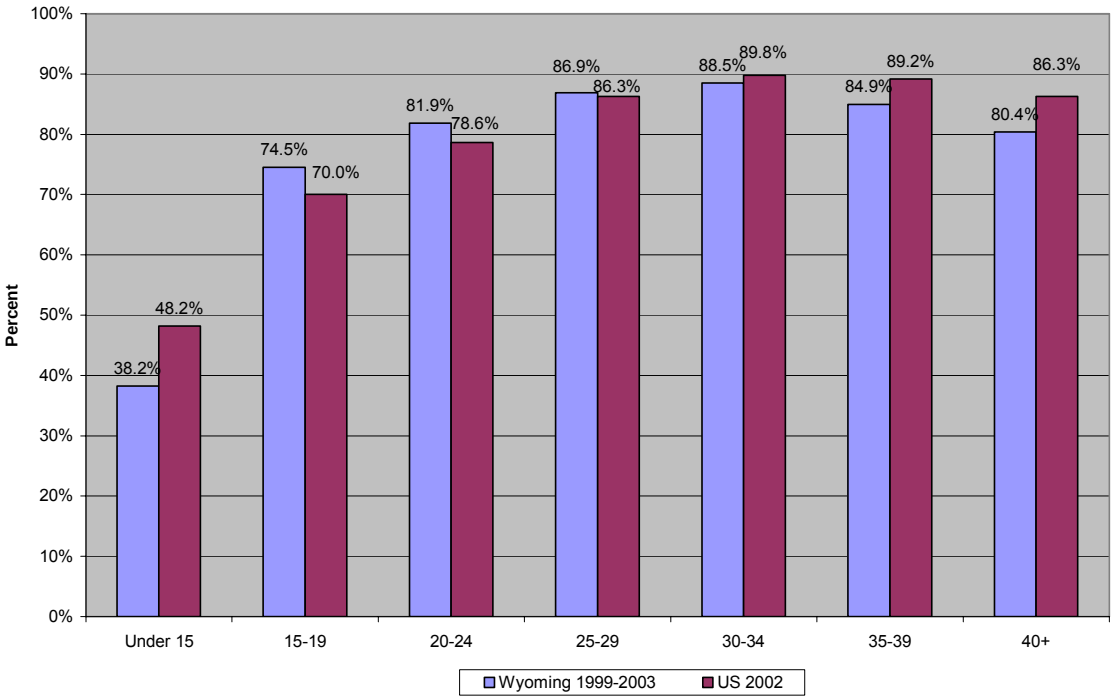
Early and comprehensive prenatal care is vital to improving pregnancy outcomes. Prenatal care can reduce the complications of pregnancy through health promotion and education, early risk assessment, and intervention in high-risk pregnancies. Women who most need comprehensive prenatal care, such as women who use tobacco, alcohol, or drugs, women who are less educated, single, or very young or older women, are the least likely to get early prenatal care. Lack of sufficient prenatal care is also costly. A 1990 Washington state study found the average Medicaid payment for delivery of infants whose mothers got no prenatal care was $3,034 compared to $1,465 for infants of women with any prenatal care.[32] Prenatal care can be measured by timeliness and adequacy.

Timing of Prenatal Care

From 1999-2003, 83.6% of Wyoming women who gave birth received prenatal care in the first trimester, compared to 84.1% nationally in 2002. **The Healthy People 2010 objective is that 90% of pregnant women receive prenatal care in the first trimester.[11]** Early entry into prenatal care varies by age group, with the lowest proportion in teens, peaking at ages 30-34 and then decreasing again.[22,23]

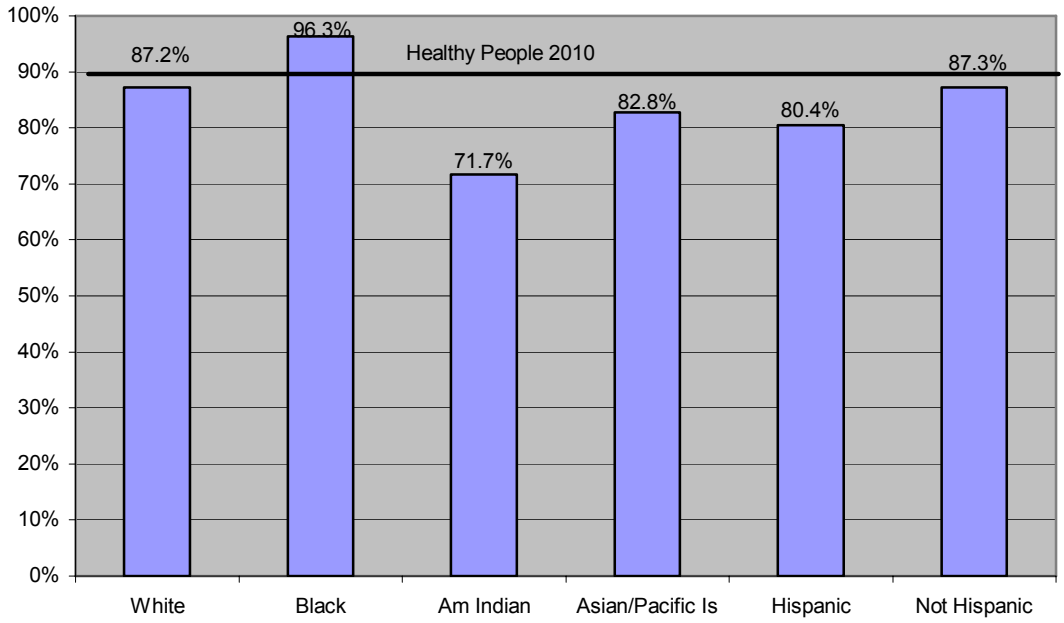
Timing of prenatal care also varies by race and ethnicity. Only Blacks, which comprise less than 1% of Wyoming's population, achieved the Healthy People 2010 goal with 96.3% entering prenatal care in the first trimester. Whites, at 87.2%, were close to 90% while Asians, at 82.8%, and Native Americans, at 71.7%, fell short. Additionally, 87.3% of non-Hispanics began prenatal care in the first trimester compared to 80.4% of Hispanics.

Figure 27: Percentage of Women Receiving Prenatal Care in the First Trimester



Sources: Wyoming Department of Health, Vital Records.
Centers for Disease Control & Prevention, National Center for Health Statistics

Figure 28: Percentage of Wyoming Live Births Where Prenatal Care Began in the First Trimester by Race/Ethnicity, 2003



Adequacy of Prenatal Care

The Adequacy of Prenatal Care Utilization Index (APNCU) was used to determine adequacy of prenatal care. The APNCU index assesses both the timeliness of initiation of prenatal care and the adequacy of services received once prenatal care has begun. Three primary factors are used to calculate the index categories: month of initiation of prenatal care, the number of observed versus expected prenatal care visits, and gestational age of the infant at birth. Using the APNCU, prenatal care utilization is classified into five categories: inadequate, intermediate, adequate, adequate plus, and missing/ unknown.[33]

Table 13: Prenatal Care Adequacy Definitions, APNCU

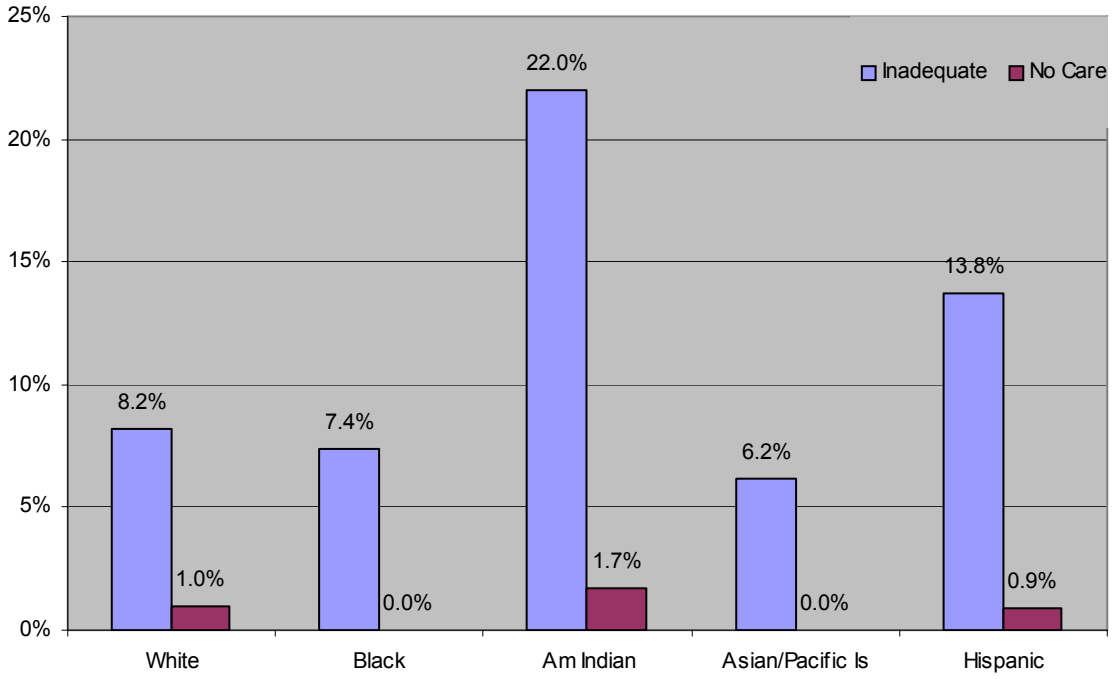
Category	Definition
Inadequate	Prenatal Care initiation begun in month 5 or later or less than 50% expected number of visits
Intermediate	Prenatal Care onset 1-4th month and 50-79% expected Prenatal Care visits
Adequate	Prenatal Care onset 1-4th month and 80-109% expected Prenatal Care visits
Adequate Plus	Prenatal Care onset 1-4th month and greater or equal to 110% expected Prenatal Care visits
Missing/ Unknown	Prenatal Care information not recorded.

Source: APNCU Index

In Wyoming, from 1999-2003, 69.9% of women giving birth had received adequate or adequate plus prenatal care, compared to 74.6% nationally in 2002. During the same time period, 11.3% of women giving birth received inadequate or no prenatal care, compared to 11.3% nationally in 2002. Adequacy of prenatal care in Wyoming has remained consistent during this time period.[22] **The Healthy People 2010 objective is for 90% of pregnant women to have adequate (adequate and adequate plus) prenatal care.[11]**

Native American and Hispanic women in Wyoming are more likely to have inadequate or no prenatal care than Whites, Blacks or Asians. In 2003, nearly one quarter of Native American women and slightly less than 15% of Hispanic women had inadequate prenatal care compared to 8.2% of white women.

Figure 29: Percentage of Wyoming Live Births with Inadequate or No Prenatal Care by Race/Ethnicity, Wyoming 2003



Wyoming county-specific data on women who received first trimester prenatal care are available in Appendix A. **Caution should be used when interpreting data due to small numbers.** Counties with the highest proportion of births to women with prenatal care in the first trimester from 1999-2003 were Hot Springs (89.4%), Sheridan (88.6%) and Teton (88.0%). The counties with the lowest proportion in 1999-2003 were Sweetwater (76.2%), Weston (77.5%), and Fremont (77.7%).

Counties with the highest proportion of births to women with inadequate or no prenatal care in 1999-2003 were Weston (17.2%), Sweetwater (14.3%) and

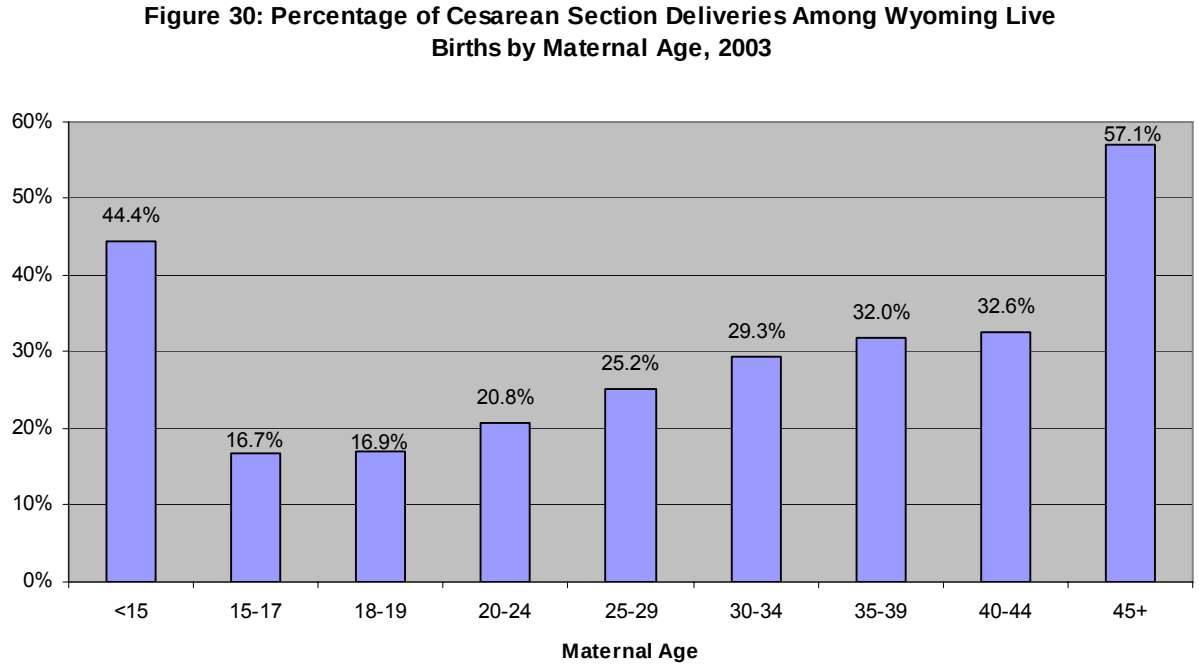
Niobrara (14.3%). Counties with the lowest proportion were Sheridan (6.5%), Lincoln (7.4%) and Johnson (7.8%).

Method of Delivery

From 1999-2003, the percentage of births that were delivered by Caesarean section in Wyoming increased about 21% from 19.8% to 24.0%. In the U.S., 26.1% of births were delivered by C-section in 2002. The percentage of women having VBACs (vaginal birth after Caesarean) decreased 42.3% from 2.6% to 1.5% from 1999-2003. The rate of VBAC has also decreased significantly nationwide. "The sharp decline in VBAC deliveries may be related to reports on the risks associated with VBAC, more conservative practice guidelines, legal pressures, as well as the continuing debate regarding the harms and benefits of vaginal birth versus Caesarean section, especially with regard to VBAC.[23]

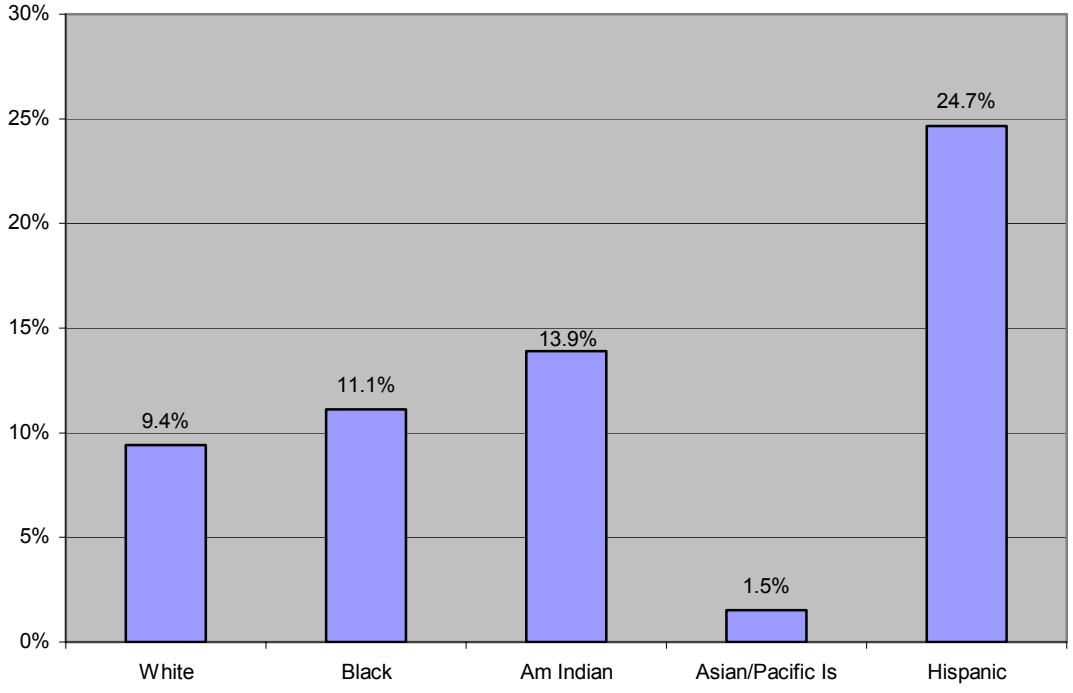
The percentage of Caesarean section deliveries differs by maternal age with the highest percentages among women under 15 and over 44. From age 15 to age 44, the percentage increases with increasing maternal age.

Figure 30: Percentage of Caesarean Section Deliveries among Wyoming Live Births by Maternal Age, 2003



From 1996 to1998 there was little difference in C-section rates by race and ethnicity. However, since then this situation has changed. In 2003, nearly one quarter of Hispanic deliveries and more than 13% of Native American deliveries were by C-section. C-section rates for whites and blacks were 11.1% and 9.4% respectively while the rates were lowest for Asians, 1.5%.

Figure 31: Percentage of Cesarean Section Deliveries Among Wyoming Live Births by Maternal Race/Ethnicity, 2003



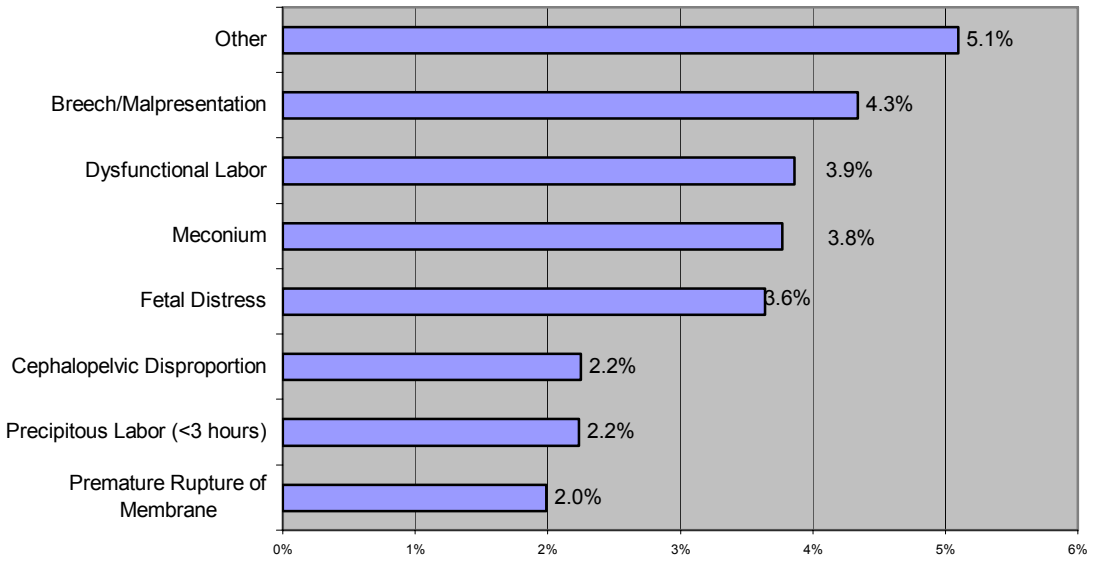
Attendant at Birth

From 1999-2003, 96% of Wyoming births were delivered by physicians, with the remaining 4% being delivered either by certified nurse-midwives out of state or by lay midwives. There are currently 9 Certified Nurse Midwives recognized to practice in Wyoming. In 2004, there were 9.6 licensed Ob-Gyn physicians per 100,000 population in Wyoming, compared to 14.4 nationally.

Complications of Labor and Delivery

From 2000 to 2003, 25.1% of Wyoming births had one or more complications of labor and delivery. Five percent of these were identified as other. The most common identified complication was breech/malpresentation, 4.3%, followed by dysfunctional labor, 3.9%, meconium, 3.8%, and fetal distress, 3.6%.[22]

Figure 32: Percentage of Wyoming Births by Complications of Labor and Delivery 2000-2003



Source: Wyoming Vital Records

Ectopic Pregnancy

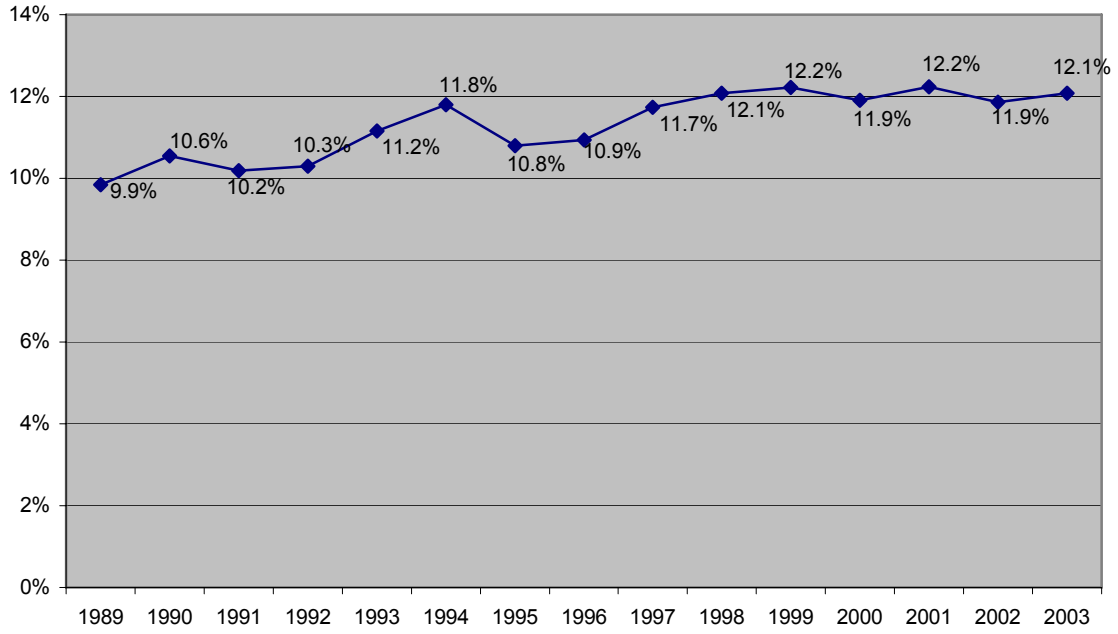
Ectopic pregnancy is an important cause of pregnancy-related illness and disability in the United States and is the leading cause of maternal death in the first trimester. The risk of ectopic pregnancy increases with age. Women of all races aged 35 to 44 years are at more than three times the risk of ectopic pregnancy than are women aged 15 to 24 years.[11] In FY 2003, there were 25 hospitalizations reported to the Wyoming Hospital Discharge Database for ectopic pregnancy, for a total cost of $189,433. Unlike the U.S., Wyoming hospitalization rates from 2000-2003 were highest in women ages 20 to 29 (60.3 per 100,000), followed by teens ages 15-19 (41.4 per 100,000). Hospitalization rates due to ectopic pregnancies from 2000-2003 were about 8 times higher for Native American women than for White women (154.6 per 100,000 vs. 18.7 per 100,000). **Caution needs to be used when interpreting this data, as numbers are small; however, numerators are greater than 20.**

Infant Health Characteristics

Period of Gestation

Preterm delivery (delivery before 37 weeks of gestation) is associated with low birth weight births, neonatal morbidity and infant mortality. The percentage of Wyoming births that were preterm 2001-2003 was 12.1% compared to 11.6% for 1996-1998 and 11.1% nationally in 2002. **The Healthy People 2010 objective is to limit preterm births to no more than 7.6% of all live births.[11]**

Figure 33: Percentage of Preterm Births Among Wyoming Live Births, 1989-2003



Source: Wyoming Vital Records

The percentage of preterm births in Wyoming has remained constant from 1997 to 2003. However, differences exist between racial and ethnic groups. In 2003 Native Americans had the highest percentage of preterm birth (15.3%) followed by Hispanics (13.9%) blacks (13%) and whites (11.9%). Asians had the lowest percentage (1.5%).

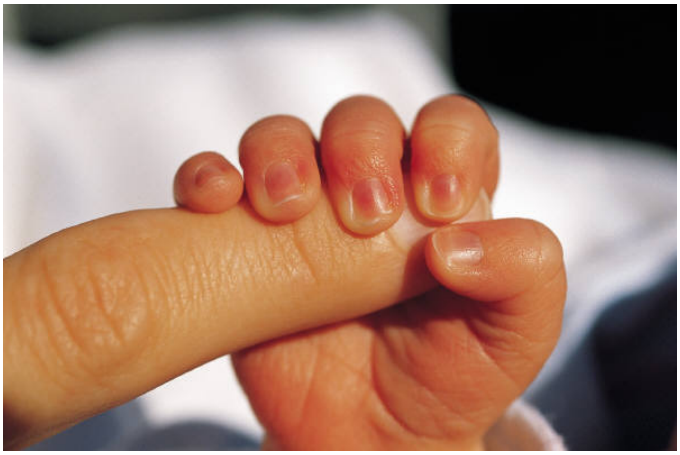
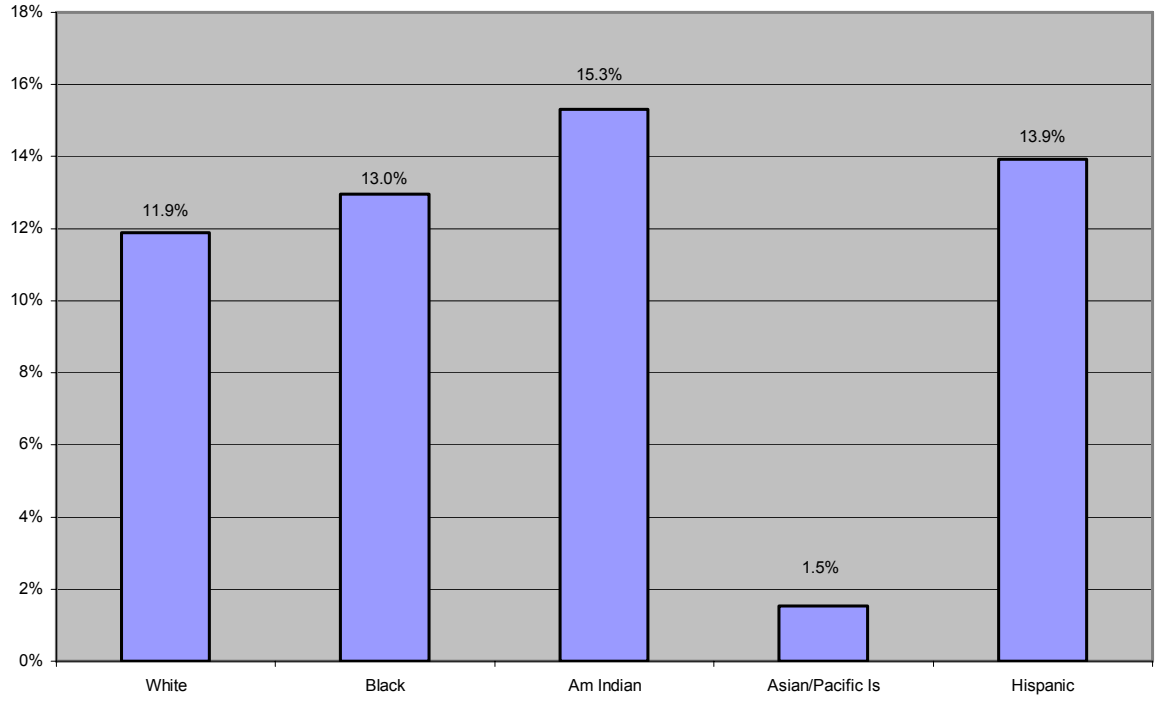


Figure 34: Percentage of Preterm Births Among Wyoming Live Births by Maternal Race, Wyoming 2003



Source: Wyoming Vital Records

County specific data for preterm birth is available in Appendix A. **Caution should be used in interpreting the data due to small numbers.** Johnson County and Crook County had the highest percentages of preterm births, 21.3% and 20.8% respectively. Counties with the lowest percentage of preterm births include Natrona(9.4%), Big Horn (10.2%), Sheridan (10.3%), Laramie (10.4%)Goshen (10.5%) and Park (10.8%).

Low Birth Weight

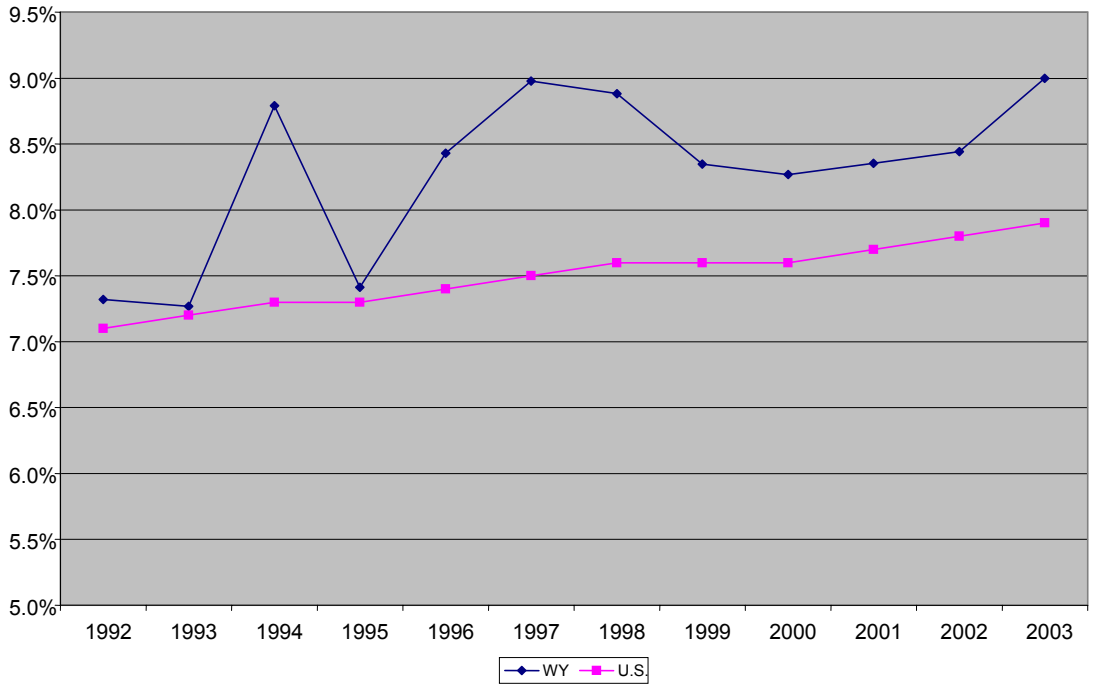
Low birth weight (LBW) is defined as an infant born weighing less than 2,500 grams (5 pounds, 8 ounces). Very low birth weight (VLBW) infants are those born weighing less than 1,500 grams (3 pounds, 4 ounces). LBW and preterm delivery are major factors in neonatal and infant morbidity and mortality. Low birth weight is associated with cerebral palsy, infant death, deafness, blindness, hydrocephalus, child respiratory problems and seizure disorders.[11]

There are many risk factors associated with low birth weight deliveries. Such factors include history of sexually transmitted disease and smoking, alcohol or drug use during pregnancy. Other conditions include inadequate maternal weight gain, diabetes, young maternal age, high parity, short intervals between births, race (African American), poverty and previous preterm or LBW births.[29,11]

From 1999-2003, the percentage of Wyoming babies born LBW was 8.5%, with the highest being 9.0% in 2003. From 1999-2003, 1.1% of Wyoming babies were born VLBW.[22] In 2002 in the United States, 7.8% of babies were born LBW and 1.5% were born VLBW. In 2002, Wyoming ranked 15th out of the U.S. states and Washington DC overall for LBW and ranked 2nd for LBW to White, non-Hispanic mothers and 4th for LBW to Hispanic mothers. In 2002, Wyoming was tied for 45th place for VLBW.[23] **The Healthy People 2010 objectives are to limit LBW births to no more than 5% and VLBW deliveries to no more than 0.9% of all live births.[11]**

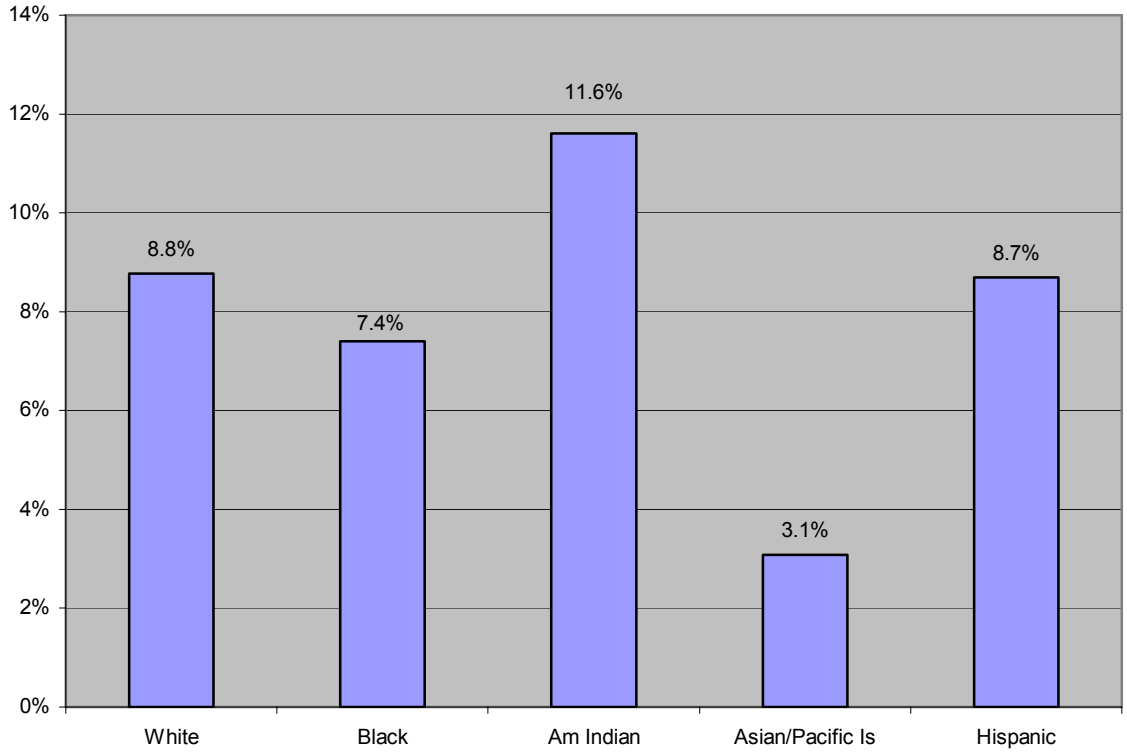
It is concerning that the proportion of births that are low birth weight have been increasing in Wyoming. In 2003, 9% of births were LBW, the highest percentage since 1997.

Figure 35: Percentage of Live Births Born at Low Birth Weight



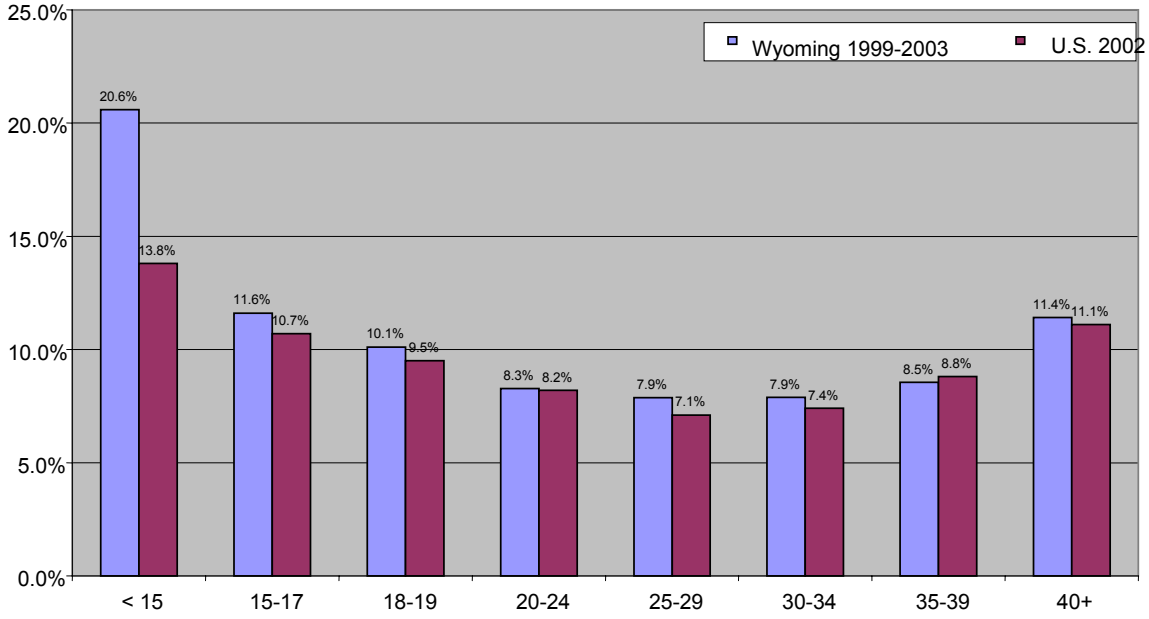
Sources: Wyoming Department of Health, Vital Records.
Centers for Disease Control and Prevention, National Center for Health Statistics.

Figure 36: Percentage of Low Birth Weight Births Among Wyoming Live Births by Maternal Race/Ethnicity, 2003



The percentage of low birth weight births differs by race and ethnicity. In 2003, 11.6% of births to Native Americans were LBW compared to 8.8% of births to whites, 8.7% of births to Hispanics, 7.4% of births to blacks and 3.1% of births to Asians. Disparities also exist in LBW by age. From 1999-2003, mothers with the highest percentage of LBW births were teens under 15 (20.6%). Women ages 25-34 have the lowest percentage (7.9%) and then the percent begins to climb again in women aged 35 or over.

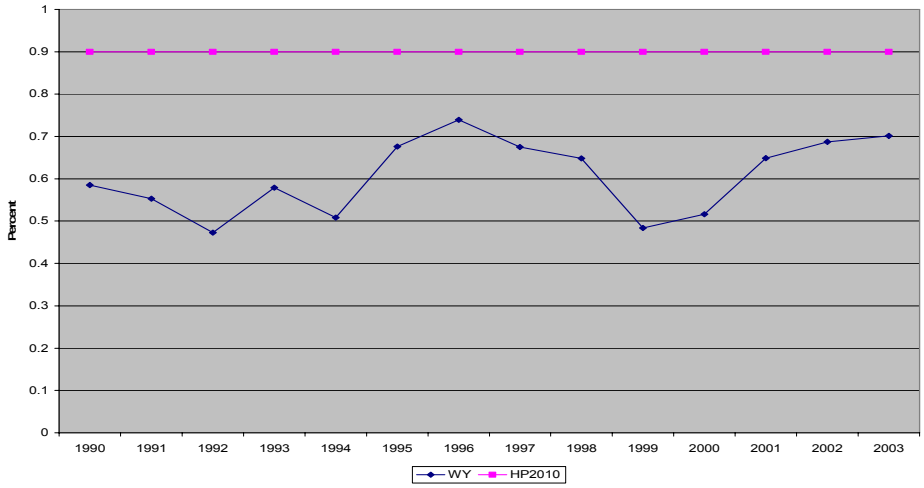
Figure 37: Percentage of Low Birth Weight Births by Maternal Age



Sources: Wyoming Department of Health, Vital Records.
Centers for Disease Control and Prevention, National Center for Health Statistics.

In 2003, 70.1% of VLBW babies born to Wyoming residents were born in Level III facilities (facilities able to provide specialty neonatal care). There are no Level III facilities in Wyoming and therefore, all mothers and babies needing such care must be transported out-of-state. The percentage of VLBW babies delivered at Level III facilities reached a peak of 73.9% in 1996 and then began to decrease; however, since 1999, the percentage has begun to increase again and reached 70.1% in 2003.[22] **The Healthy People 2010 objective is for 90% of VLBW births to occur in Level III hospitals or subspecialty perinatal care centers.[11]**

Figure 38: Percentage of VLBW Births Born at Level III Facilities



Source: Wyoming Department of Health, Vital Records

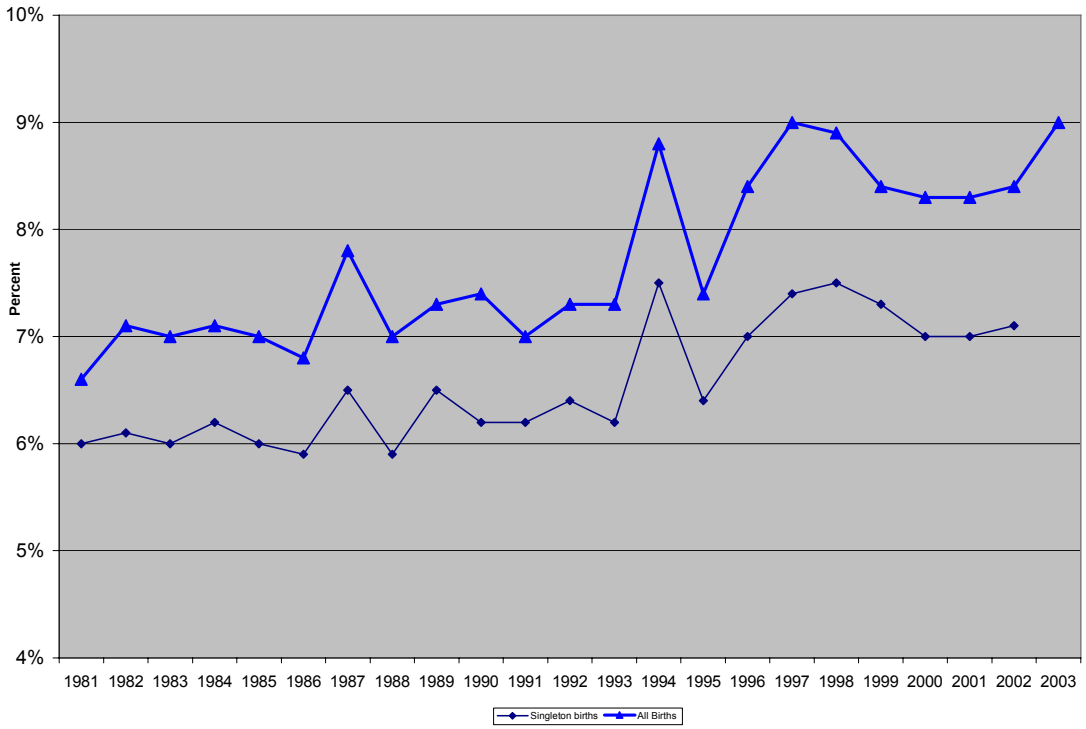
Wyoming county-specific data on women who had low birth weight and very low birth weight births from 1999-2003 are available in Appendix A. **Caution should be used when looking at these data due to small numbers.** Counties with the highest proportion of LBW births from 1999-2003 were Uinta (11.8%), Sublette (11.3%) and Johnson (9.7%). Counties with the lowest proportion of LBW births from 1999-2003 were Niobrara (3.1%), Goshen (5.6%) and Crook (6.0%).

Counties with the greatest proportion of VLBW births from 1999-2003 were Crook (2.0%), Sublette (1.8%) and Converse (1.6%), while those with the lowest proportion were Niobrara (0.0%), Washakie (0.2%) and Hot Springs (0.5%). Statistical significance cannot be determined, however, due to very small sample size.

Multiple Births

Infants in multiple births are born earlier, tend to be smaller than singletons, have higher infant mortality rates, and are more likely to have lifelong disabilities.[23,35] Wyoming did mirror the U.S. trend from 1981 to 1997 of an increase in multiple births (1.6% to 3.3%); however, the percentage of live births that were multiple began to decrease in 1998 and was at 2.5% in 2002,[22] compared to 3.3% nationally.[23] While multiple births do contribute to the increasing LB W in Wyoming, singleton LBW births are also on the rise.

Figure 39: Low Birth Weight Trends, Wyoming 1981-2003



Source: March of Dimes, Peristats.

Apgar Scores

The Apgar score is used to evaluate the physical condition of newborns and uses five characteristics (heart rate, respiratory effort, muscle tone, reflex irritability and color). The 5-minute Apgar is based on an assessment at five minutes after birth and can be used to predict a newborn's chance of survival. From 1999-2003, 1.5% of Wyoming newborns had a 5-minute Apgar less than 7 compared to 1.4% nationally in 2002.[22,23]

Hyaline membrane disease and assisted ventilation accounted for the largest percentages of births with abnormal conditions in Wyoming, followed by birth injuries (impairment of the infant's body function or structure due to adverse influences which occurred at birth). Wyoming had higher proportions than the nation in every condition except for assisted ventilation <30 minutes and anemia.[22, 65]

Congenital Anomalies

The rates for births by specific congenital anomaly are noted in the following table (Table 14). Wyoming rates per 100,000 live births are higher than U.S. rates for anomalies of the central nervous system, gastrointestinal system, urogenital system, musculoskeletal/integumental systems and for chromosomal anomalies. Anomalies of the circulatory/respiratory systems do not occur at a statistically different rate in Wyoming than in the United States. County specific data are not available due to small numbers.

Figure 40: Percentage of Abnormal Conditions of the Newborn Among Live Births, Wyoming 2001-2003 and the U.S. 2002

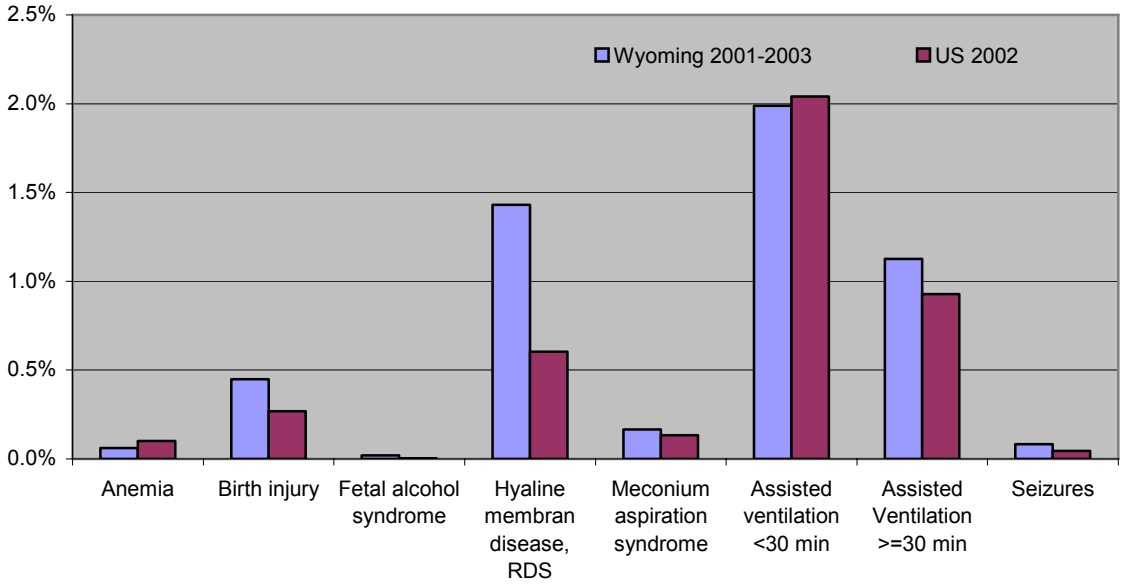


Table 14: Congenital Anomalies, Wyoming and the United States

	Wyoming 1999-2003				United States 2002		
	Number	Rate*	- 95% CI	+ 95% CI	Rate*	- 95% CI	+ 95% CI
Births with one or more anomalies	552	**1747.3**	1601.5	1893.0			
**Central Nervous System	43	**136.1**	95.4	176.8	**79.5**	76.8	82.3
Circulatory/Respiratory Systems	74	**234.2**	180.9	287.6	**259.7**	254.8	264.7
**Gastrointestinal System	44	**139.3**	98.1	180.4	**85.0**	82.1	87.8
**Urogenital System	156	**493.8**	416.3	571.3	**202.3**	197.9	206.7
**Musculoskeletal/Integumental anomalies	184	**582.4**	498.3	666.6	**458.0**	451.4	464.6
Chromosomal anomalies	36	**114.0**	76.7	151.2	**77.7**	75.0	80.4

*Rate is per 100,000 live births ** Indicates statistically significant difference between WY and U.S. rate

Newborn Hearing Screening

In 2003, 98.4% of newborns born in Wyoming were screened for hearing disorders compared to 94.2% in 1999. Of those screened, 2.8% were referred for re-screening, and 85.2% of those referred for rescreening passed. Ten percent were referred for diagnostic work-up and 16 infants were diagnosed with confirmed hearing loss.

Of the 99 infants (1.6%) not screened initially, 71.6% of the infants were transferred, 14.7% of the families waived the screening, 9.8% died and 3.9% were classified as "Other." Of the 169 referred for re-screening, only 3% were moved or were lost to follow-up compared to 22% in 1999.[58] **The HP2010 objective is to increase the proportion of newborns with hearing screening, referral and treatment.[11]**

Newborn Genetic Screening

In 2003, 97.4% of the newborns born in Wyoming were screened for phenylketonuria (PKU), congenital hypothyroidism, galactosemia, sickle cell disease, biotinedase, and cystic fibrosis compared to 99% in 1999. Seven cases were confirmed and received appropriate intervention (4 congenital hypothyroidism, 1 PKU, 1 galactosemia, and 1 cystic fibrosis).

Of the 159 infants (2.6%) not screened initially, 62.9% of the infants were transferred, 20.1% were missed, 13.8% of the families declined screening and 3.1% of the infants died.[59]

The HP 2010 objective is to ensure that all newborns are screened to detect conditions mandated by their states, such as phenylketonuria (PKU), congenital hypothyroidism, galactosemia, and hemoglobinopathies (such as sickle cell disease). The objective also recommends appropriate follow-up and interventions for those with positive test results.[11]

Breastfeeding

The benefits of breastfeeding include decreased new cases or severity of diarrhea, respiratory infections, and ear infections, among others, and reduced cost to the family. In addition, breastfeeding has been shown to improve maternal health, with demonstrated effects, including reduction in postpartum bleeding, earlier return to pre-pregnancy weight, reduced risk of pre-menopausal breast cancer, and reduced risk of osteoporosis, continuing long after the postpartum period. In general, the American Academy of Pediatrics considers breastfeeding to be "the ideal method of feeding and nurturing infants".[11]

In 2003, 34.4% of Wyoming women surveyed by the annual Ross Mothers Survey reported breastfeeding at 6 months, compared to 32.8% nationally. Of the women enrolled in the Wyoming WIC program, 28.1% reported breastfeeding at 6 months, compared to 21% nationally.[43]

Nearly 80% of Wyoming women surveyed by the annual Ross Mothers Survey reported breastfeeding at hospital discharge, compared to 66% nationally. Of the women enrolled in the Women, Infants, and Children (WIC) program, 71.9% reported breastfeeding at hospital discharge, compared to 54.3% nationally.[36]

The Healthy People 2010 goal is to increase to at least 75% the proportion of mothers breastfeeding their babies in the early postpartum; to at least 50% at 6 months old, and at least 25% at 1 year.[11]

Figure 41: Percentage of Women who Initiated Breastfeeding, Wyoming and U.S.

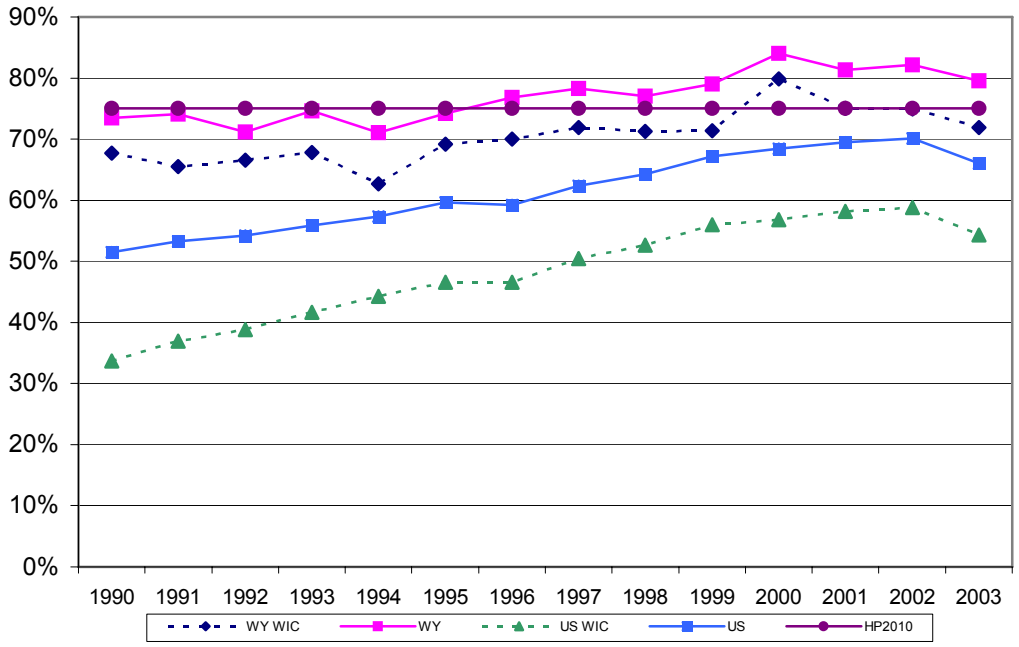
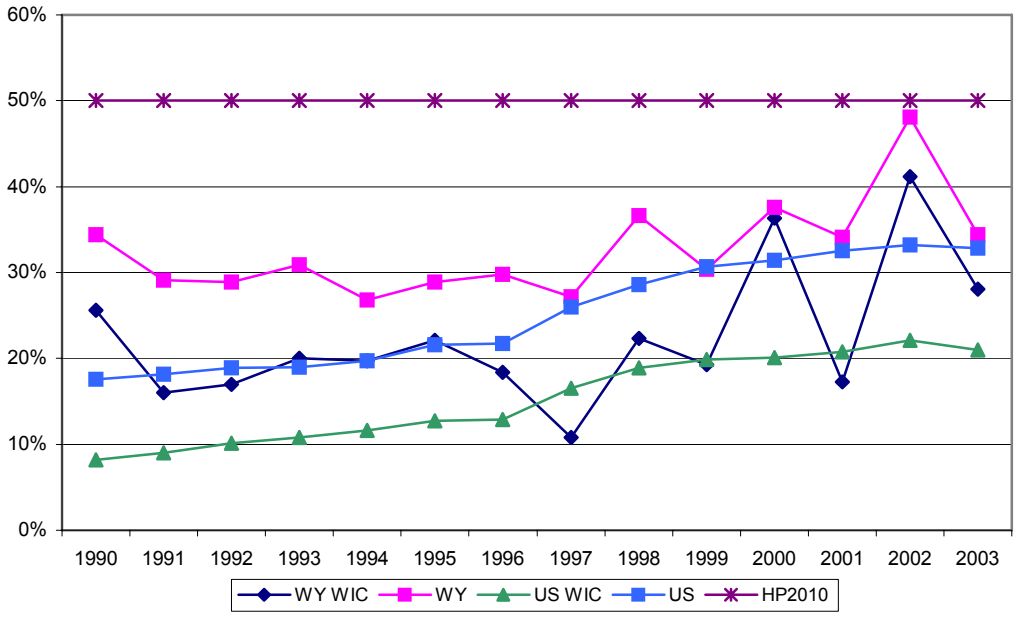


Figure 42: Percentage of Women Breastfeeding at 6 Months, Wyoming and U.S.



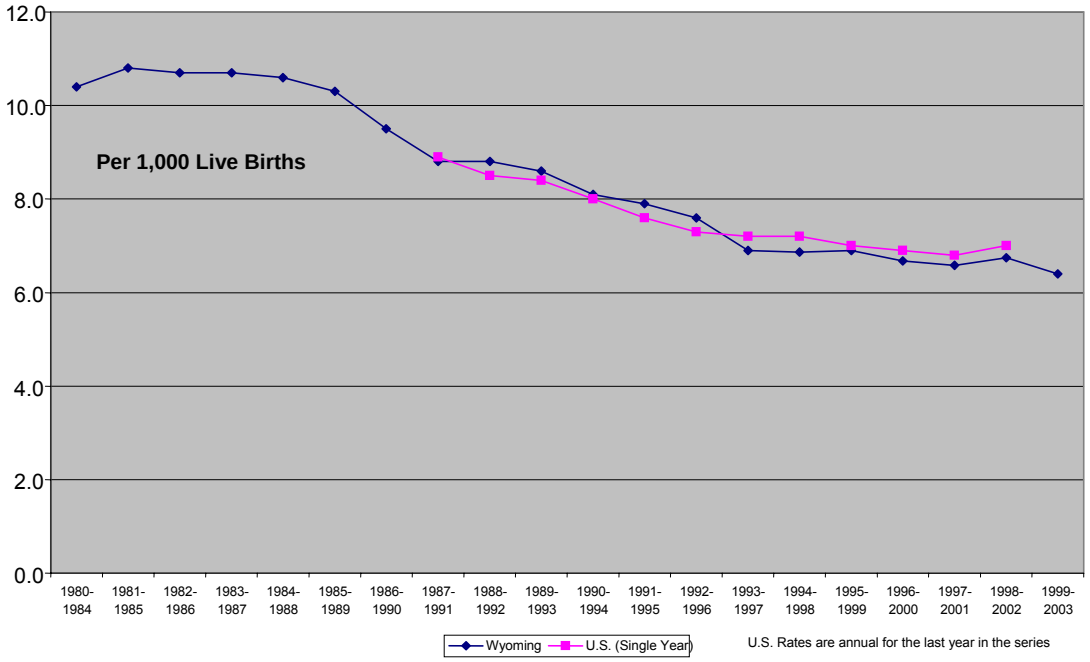
In 2003, 79.5% of counties were asked in the 2003 MCH Systems Enhancement survey to rate the adequacy of their breastfeeding networks. Fifty-three percent of counties responding reported they had a breastfeeding support network but it was inadequate. Twenty-nine percent reported an adequate support network down from 39% in 2001. Eighteen percent reported no network compared to 13% in 2001.

Perinatal Mortality

Infant Mortality

Infant mortality rates can often indicate health status problems with the mother or child, as well as potential problems with access to and quality of health services. Infant mortality is associated with many factors, including birth defects, low birth weight, insufficient prenatal care, short pregnancy interval, substance abuse during pregnancy and African American and Native American ethnicity.[11]
The infant mortality rate (IMR) is the number of infant deaths less than one year per 1,000 live births. The IMR for Wyoming from 1999-2003 was 6.4 per 1,000 live births[22] compared to the 2002 national rate of 7.0 per 1,000.[23] Infant mortality in the United States has decreased greatly throughout the 20th century. However, in 2002, the IMR increased for the first time since 1958. While further research needs to be done, the Centers for Disease Control and Prevention (CDC) has determined that the increase was due to an increase in births of infants weighing less than 750 grams. Wyoming has not shown a statistically significant change in trend since 1994. **The Healthy People 2010 objective for infant mortality is 4.5 per 1,000.[11]**

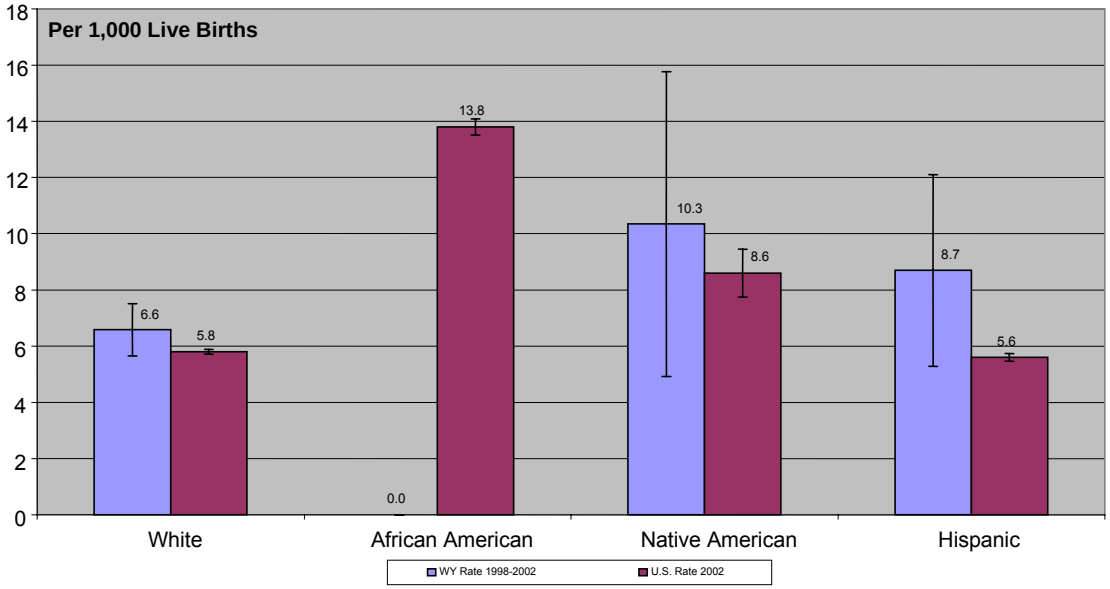
Figure 43: Infant Mortality Rates Wyoming 5-Year Rolling Averages, U.S. Annual Rates



Sources: Wyoming Department of Health, Vital Records.
Centers for Disease Control and Prevention, National Center for Health Statistics.

Infant mortality rates in Wyoming were higher in Native Americans and Hispanics than in Whites from 1998 to 2002; **however, caution should be used in interpreting these rates due to small numbers.** There were less than 20 deaths to Native American infants in those five years, making the rates unstable. Wyoming has higher rates of IMR in all racial/ethnic groups than the U.S., with the exception of African Americans, where there were no infant deaths from 1998-2002. However, these differences are not statistically significant and are most likely the result of small numbers.

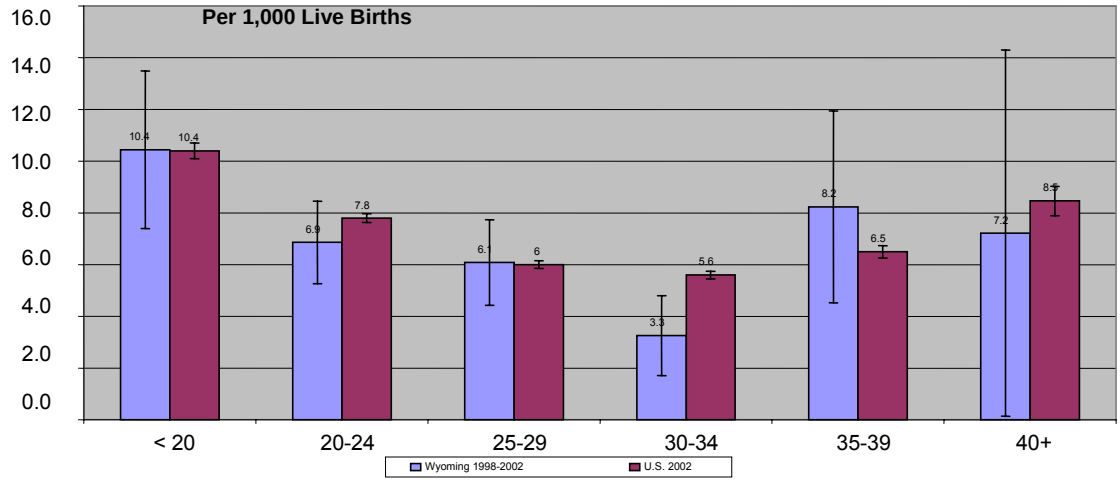
Figure 44: Infant Mortality Rate by Race/Ethnicity



Sources: Wyoming Department of Health, Vital Records.
Centers for Disease Control and Prevention, National Center for Health Statistics.

In Wyoming from 1998 to 2002, infant mortality occurred at a higher rate in mothers less than 20 years of age. This declined with age until the age group of 30-34 year olds. Beginning at 35-39, the infant mortality rate begins to increase again. This mirrors the pattern nationally and due to the small numbers of infant deaths, there are no significant differences by age group in Wyoming, nor between Wyoming and the U.S., with the exception of Wyoming mothers ages 30-34, who have a significantly lower rate of infant mortality than mothers nationally in the same age group (3.3 per 1,000 vs. 5.6).[22,23]

Figure 45: Infant Mortality Rate by Maternal Age, Wyoming



Sources: Wyoming Department of Health, Vital Records.
Centers for Disease Control and Prevention, National Center for Health Statistics.

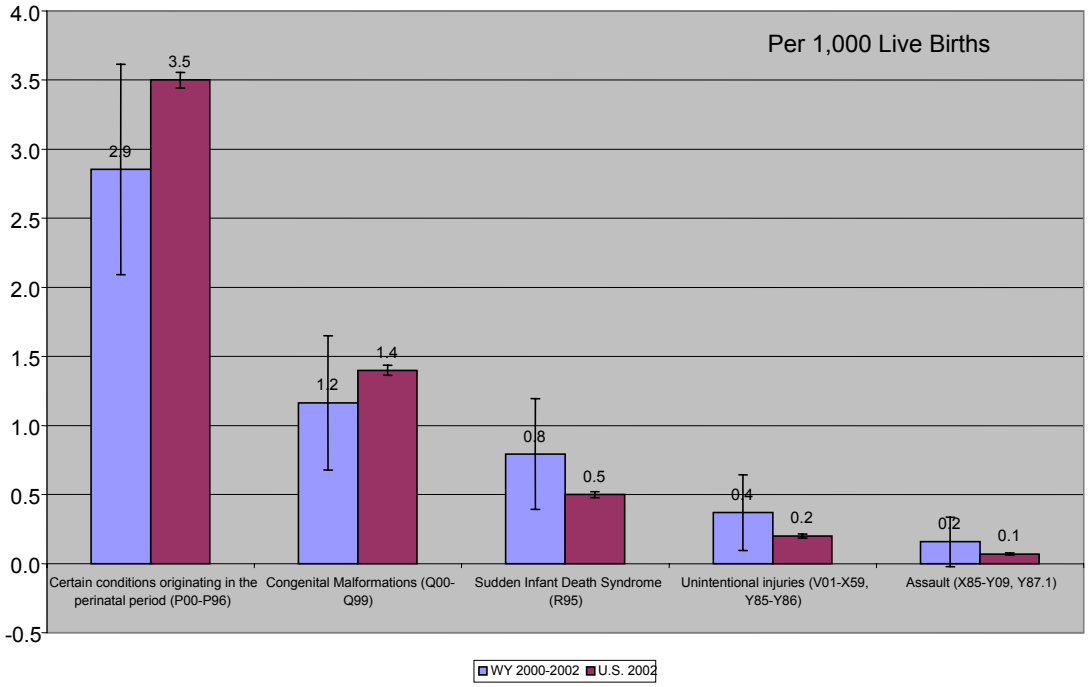
Infant mortality rates are highest in babies born VLBW and LBW. From 1998-2002, 41% of infant deaths occurred in LBW infants, followed by 31% in VLBW infants and 27% in normal birth weight infants.[22]

Infant deaths can be divided into neonatal (deaths occurring in the first 28 days of life) and post-neonatal (deaths occurring from 28 days to 1 year). **The Healthy People 2010 objective for neonatal mortality is no more than 2.9 deaths per 1,000 live births and no more than 1.5 deaths per 1,000 live births for post-neonatal mortality.[11]** The Wyoming neonatal mortality rate for 1999-2003 was 3.9 per 1,000 live births compared to 4.7 nationally in 2002. The post-neonatal mortality rate for Wyoming was 2.4 compared to 2.3 nationally in 2002.[22,23] Overall, about 62% of infant deaths in Wyoming from 1999-2003 occurred during the first 28 days of life.[22]

Causes of Infant Death

In Wyoming from 1999-2002, certain conditions originating in the perinatal period accounted for 39% of infant deaths. Of those, the most common were disorders related to short gestation and unspecified low birth weight, maternal conditions of pregnancy and complications of placenta, cord and membranes. Other common causes of infant deaths were congenital malformations (17.7%) and Sudden Infant Death Syndrome (SIDS) (13.4%).[22] Nationally in 2002, conditions originating in the perinatal period accounted for 50% of infant deaths, followed by congenital malformations (20.2%) and SIDS (7.3%).[23] There are no significant differences between Wyoming in 2000-2002 and the United States in 2000 for rates of infant death by cause per 1,000 live births.

Figure 46: Rates of Infant Death by Cause



Sources: Wyoming Department of Health, Vital Records.
Centers for Disease Control and Prevention, National Center for Health Statistics.

County level data are available in Appendix A; however, **caution should be used when interpreting rates due to the very small numbers.** The counties with the highest rates of infant mortality per 1,000 live births from 1999-2003 were Sublette (12.2), Sweetwater (10.5) and Uinta (9.8), while those with the lowest rates were Crook (0.0), Niobrara (0.0) and Big Horn (2.9).[22]

Sudden Infant Death Syndrome (SIDS)

Sudden Infant Death Syndrome (SIDS) is "the sudden death of an infant under one year of age which remains unexplained after a thorough case investigation, including performance of a complete autopsy, examination of the death scene, and review of the clinical history." Although SIDS is a diagnosis of exclusion and of unknown etiology, it is the leading cause of post-neonatal mortality in the United States, accounting for approximately one-third of all such deaths.[39]

From 1998 to2002, babies born weighing less than 2500 grams were three times more likely to die from SIDS than babies born at or above 2500 grams (OR = 3.10, 95% CI = 1.12, 8.10).[22]

Babies born to women ages 18-19 were the most likely to die from SIDS at a rate of 2.3 per 1,000 live births from 1998-2002. Women under 20 years of age were 2.64 times more likely to lose a baby to SIDS than were women aged 20 and over (OR – 2.64, 95% CI = 1.06, 6.35).[22]

Native American women had higher rates of SIDS deaths from 1998-2002 than did White women (2.22 vs. 0.82 per 1,000 live births)[22]; however, due to small numbers, significance could not be ascertained.

Wyoming reported 15 deaths due to SIDS from 2000-2003. The SIDS mortality rate during this period was 0.8 per 1,000 live births, representing a decrease from 1.1 in 1996-1998[22] and compared to 0.5 nationally in 2002.[23] It is not possible to calculate age or race-specific SIDS mortality rates due to the very small numbers of SIDS deaths in Wyoming. **The Healthy People 2010 objective is to reduce SIDS mortality to no more than 0.3 per 1,000 live births.[11]**

Fetal Deaths

Fetal deaths (deaths at 20 weeks or more gestation) accounted for 58.6% of perinatal deaths (fetal & neonatal deaths) in Wyoming from 1998-2002. Fetal deaths provide a more complete picture of pregnancy outcomes and risks than infant deaths alone. From 1998-2002, the fetal death rate for Wyoming was 5.6 per 1,000 live births and fetal deaths[22], compared to the 2002 national rate of 6.6.[23] **The Healthy People 2010 objective is to reduce the fetal death rate to no more than 4.1 per 1,000 live births and fetal deaths.[11]**

From 1998 to 2002 women aged 35-39 were the most likely to experience a fetal death (9.9 per 1,000). Women 35 and over were 80% more likely than women under 35 to experience a fetal death (OR = 1.80, 95% CI = 1.17, 2.76).[22]

Native American women were more likely to experience a fetal death from 1998-2002 than were White women or African American women; however these differences were not statistically significant. There were no differences between Latina and non-Latina women.[22]

Maternal Mortality

The Healthy People 2010 goal is to reduce the maternal mortality rate to no more than 3.3 per 1,000 live births. There were no maternal deaths in Wyoming from 2001 to 2003.

Top Issues for the Maternal, Infant and Early Childhood Population

In 2003, a survey of Maternal and Child Health stakeholders was conducted and 938 people responded. Respondents included health care providers (41.4%), school personnel (19.9%), state/local government employees (10.8%), parents/grandparents (8.4%) and others (28.8%). The top fifteen issues identified by stakeholders for the Maternal, Infant and Early Childhood population group were (in order of importance):

1. Health insurance
2. Teen pregnancies/Births to teens
3. Early care and education
4. Poverty and financial support
5. Smoking during pregnancy
6. Births to single mothers
7. Education for parents
8. Social/emotional health of children to age 8
9. Alcohol use during pregnancy
10. Immunizations
11. Child care
12. Drug use during pregnancy
13. Access to obstetricians
14. Family planning
15. Family violence

(See Appendix B)

Retreats with MCH program managers were held in March 2005. Participants were provided with detailed issue briefs, results of the above-mentioned survey and results from a series of statewide stakeholder focus groups and asked to determine the top issues for each MCH population.

Priorities for the perinatal population were determined to be (not in ranked order):

1. Access to data
2. Family Planning/Unintended pregnancy
3. Access to healthcare
4. Genetic testing
5. Low birth weight and premature birth
6. Tobacco/alcohol use
7. Lack of adequate weight gain
8. Early entry into prenatal care/Specialty care
9. Social/emotional health of pregnant women
10. Vaginal infections

Priorities for the children ages 0-8 population were determined to be (not in ranked order):

1. Medical home use
2. Early care and education
3. Unintended injuries
4. Child mortality
5. Access to care and health insurance

Issues identified through the 2003 MCH Systems Enhancement Survey

- 33.3% of counties reported there were no or an inadequate number of prenatal and maternity providers in their county. Forty-five percent reported an inadequate number of family planning providers in their county.
- 28.6% of counties reported a need for county residents to travel for perinatal and delivery services; 13.6% reported a need to travel for family planning services; and 18.2% reported a need to travel for infant, child and adolescent health services.
- Nearly 82% of counties reported that private providers had no variable office hours or that the hours were inadequate. Nearly 86% reported the same for family planning providers.
- 47.6% of counties reported they lacked a tracking system for high-risk infants and toddlers, which indicates an improvement from 61% in 1999.
- Almost all counties reported an inadequate number of translators, culturally competent materials, and training opportunities for providers in cultural competence.

(See Appendix D)

Child and Adolescent Health

Summary of Child and Adolescent Health Indicators

Poverty: From 2001-2003, there were approximately 46,000 Wyoming children under 19 (36.3%) living at or above 200% of poverty level, compared to 38.2% nationally. This represents a decrease from 43% of children in 1997-1998.

Insurance: An estimated 7.3% of Wyoming children were uninsured and at or below 200% of poverty level from 2001-2003, compared to 7.5% nationally.

Health Care Utilization: According to the National Survey of Children's Health, 9.3% of Wyoming children ages 1-17 have no health insurance and 15.1% either currently have no insurance or have been uninsured in the past year. In addition, 28.3% of Wyoming children received no preventive medical care in the past twelve months. In FY 2004, 37.4% of Medicaid eligible children received at least one age appropriate initial or periodic screen. The proportion receiving a screening decreased sharply with increasing age.

Leading Causes of Death: Unintentional injuries (UI) are the leading cause of death for all Wyoming children and adolescents, and motor vehicle crashes (MVC) account for the majority of UI deaths. For all age groups, Wyoming's UI and MVC death rates for 1999-2002 are higher than U.S. rates for 2002.

Physical Activity: Data from the 2003 Youth Risk Behavioral Survey (YRBS) indicates that 52.9% of Wyoming High School Students were enrolled in Physical Education (PE), 23.2% attended PE daily, 56.3% participated in a team sport and 67.7% reported vigorous physical activity on three or more days in the past week. About 73% of high school students (77.9% female and 68.9% male) reported watching less than 3 hours of television per day.

Nutrition/Weight: Wyoming high school students differ significantly from U.S. high school students when comparing weight by BMI. In 2003, 7.2% of Wyoming high school students were overweight according to BMI, compared to 13.5% nationally and 11.7% were at risk of becoming overweight, compared to 15.4% nationally.

Immunizations: In 2003, the National Immunization Survey (NIS) estimated that almost 76% of Wyoming children ages 19-35 months were up-to-date with the recommended 4:3:1:3:3 vaccination schedule (4 DPT, 3 Polio, 1 MMR or Measles, 3 HIB, 3 Hepatitis B).

Lead: From 1999 to 2004, 95 Wyoming children 0-18 have been identified with elevated blood lead levels ($\geq$10ug/dL).

Demographics

There were an estimated 185,357 children and youth ages 0 to 24 in Wyoming in 2003 (91,504 males and 85,447 females), representing 35.3% of the population. This represents a 6.6% increase since the 1990 census. In 2003, there were an estimated 62,176 children ages 0 to 9 and 123,181 youth ages 10 to 24 in Wyoming. For the purpose of this Needs Assessment, adolescence will be defined as ages 10 to 24. However, data may not always be available by these categories. The population ages 20 to 24 showed the largest increase (40.3%) from 1990 to 2003 from 27,846 to 39,081.[1]

Table 15: Population Estimate by Age by Sex for Wyoming: 1990 to 2003

Both Sexes	1990 Census	2000 Census	2003 Estimate	% Change
<1	7,032	6,130	6,383	-9.2%
1-4	28,396	24,810	24,635	-13.2%
5-9	40,516	34,127	31,158	-23.1%
10-14	28,818	38,376	35,507	23.2%
15-19	34,934	41,903	40,187	15.0%
20	6,339	7,633	8,406	32.6%
20-24	27,846	33,455	39,081	40.3%
Total 0 - 24	173,881	186,434	185,357	6.6%

Source: U.S. Census Bureau

Race/Ethnicity

Based on 2003 Census estimates, Wyoming's children and adolescent population is predominantly White, non-Hispanic (84.5%), followed by Hispanic/Latino (9.2%), Native American, non-Hispanic (2.9%), and other races, non-Hispanic (3.4%).[1]

Table 16: Wyoming Child and Adolescent Population by Race/Ethnicity 2003

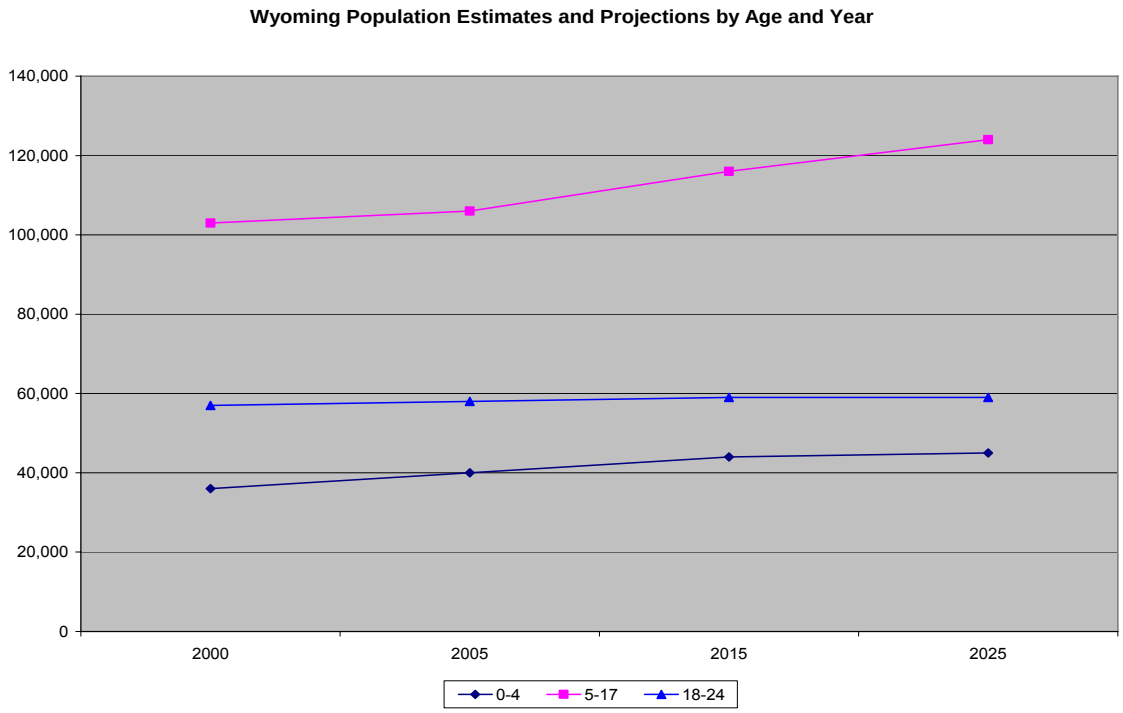
	Total	White	African American	Native American	Asian	Native Hawaiian/ Pacific Islander	Two or More Races	Hispanic/Latino (All Races)
< 1	6383	5321	63	254	40	3	119	583
1-4	24635	20288	193	877	131	13	536	2597
5-9	31158	25825	289	933	142	22	621	3326
10-14	35507	30092	334	1075	160	25	634	3187
15-19	40187	34688	373	1078	215	27	592	3214
20-24	39081	33267	578	915	331	46	488	3456
Total	176951	149481	1830	5132	1019	136	2990	16363

Source: US Census Bureau

Projected Population

The population of children and adolescents in Wyoming is expected to continue to grow until at least 2025. Children under five are expected to see the greatest increase (25.0%) from 2000 to 2025, followed by children and youth ages 5 to 17 (20.4%) and young adults ages 19-24 (3.5%). Overall, there will be a 16.2% increase in Wyoming's population of children and adolescents ages 0-24 from 2000 to 2025.[4]

Figure 47: Wyoming Population Estimates and Projections by Age and Year



Source: U.S. Census Bureau, Projections of the Population, By Age and Sex, of States: 1995 to 2025.

Economics

From 2001-2003, there were approximately 46,000 Wyoming children under 19 (36.3%) living at or above 200% of poverty level, compared to 38.2% nationally. This represents a decrease from 43% of children in 1997-1998. An estimated 7.3% of Wyoming children were uninsured and at or below 200% of poverty level from 2001-2003, compared to 7.5% nationally, resulting in a Wyoming ranking of 17th nationally.[1].

In 2004, the Wyoming Department of Health, Office of Medicaid reported covering 52,368 children under 19 in Wyoming, an 83.3% increase from the 28,569 covered in 2000. This represents approximately 36% of the population of

children. The increase may be attributed to the aggressive and successful efforts by the state's Kid Care/SCHIP program to enroll eligible children.[15]

In 2004, Kid Care/SCHIP estimated that 3,854 children under 19 years were enrolled in their program and an additional 3,646 were eligible but not enrolled. The number of children enrolled in Kid Care/SCHIP is expected to increase when the eligibility increases to 200% of poverty level in July 2005.[16]

Wyoming's Child Support Enforcement Agency, which helps to give Wyoming children and families financial security by assuring assistance in obtaining child support, aided in the collection of $53 million in child support in 2004. Also in 2004, 61% of current child support and 64% of child support arrears was being collected.

Families

In 2001, 27% of families with children were headed by a single parent, compared to 28% nationally and 26% in Wyoming in 1996, ranking Wyoming 16th nationally. Twenty percent of children were living with no parent having full-time year round employment, compared to 25 % nationally and 21% in 1996, ranking Wyoming 8th in the nation.[7]

Health Care Utilization

According to the National Survey of Children's Health, 9.3% of Wyoming children ages 1-17 have no health insurance and 15.1% either currently have no insurance or have been uninsured in the past year. In addition, 28.3% of Wyoming children received no preventive medical care in the past twelve months. Nearly 13% of children visited the emergency room at least once during the past year for health care and 5.3% visited two or more times. Only 1.3% of Wyoming children did not get the medical care needed in the past year, and only 0.4% did not get needed prescriptions.

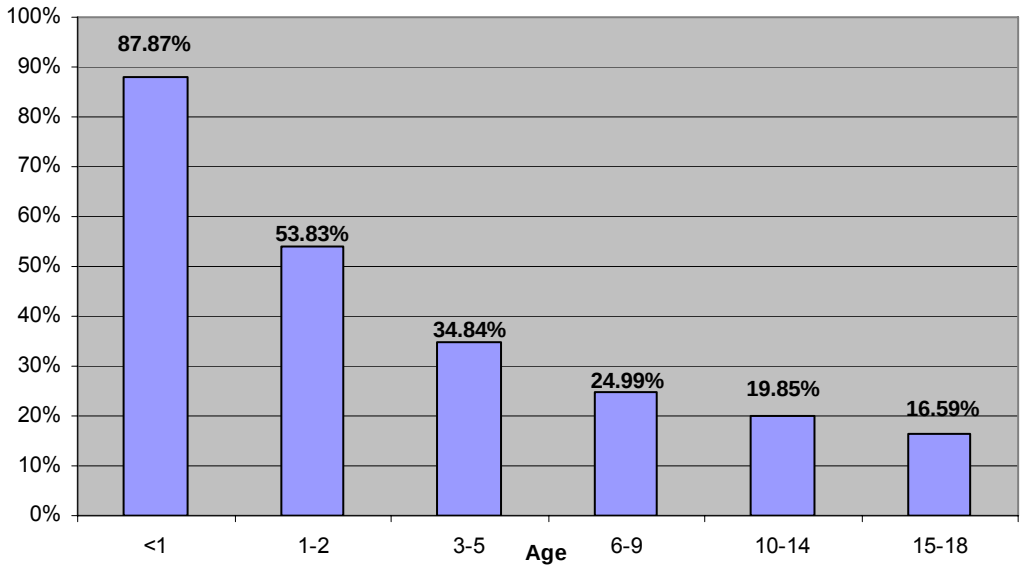
However, significantly more Wyoming children are without a medical home (59.5%) compared to all U.S. children (53.9%). Seventeen percent of Wyoming children do not have a personal doctor or nurse, 16.1% had problems getting specialty care or other services recommended by their health care professional and 46% had a doctor or nurse who did not regularly follow up on referrals. Of highly concerned parents, 72.8% report that their doctor did not give them information to address their concerns about their child's learning, development or behavior.[68]

Early Periodic Screening, Diagnosis and Treatment (EPSDT)

Wyoming Medicaid recommends that infants under 1 should receive 6 EPSDT visits in the first year and 4 visits between the ages of 1 and 2. Children should then receive visits at 4, 5, 6, 8 and 10 years of age and a visit each year from

age 11 to age 20. In FY 2004, 37.4% of Medicaid eligible children received at least one age appropriate initial or periodic screen. The proportion receiving a screening decreased sharply with increasing age.

Figure 48: Percentage of Children Enrolled in Medicaid who Received At Least One Initial or Periodic EPSDT by Age, 2003-2004



Mortality and General Health

Overall, 89.2% of Wyoming children are in excellent or very good health, significantly more than the 84.1% of U.S. children.[69] There was an average of 108 deaths annually for Wyoming children and youth ages 1-24 from 1999-2003.[22] The number of deaths per year for some age categories is very small; therefore, Wyoming rates are computed for 1999-2003. From 1999-2003, Wyoming children and youth had higher age-specific death rates per 100,000 population than their national counterparts in 2002.[22,23] According to the 2004 KIDS Count Databook (based on 2001 data), Wyoming ranks 42nd for the rate of child death for ages 1-14 and 38th in teen (ages 15-19) death by accident, homicide and suicide. This does show improvement from 1996 when Wyoming ranked 45th highest for child death and 50th highest for teen death due to accident, homicide and suicide.[7]

Table 17: Age-Specific Death Rates per 100,000 Population

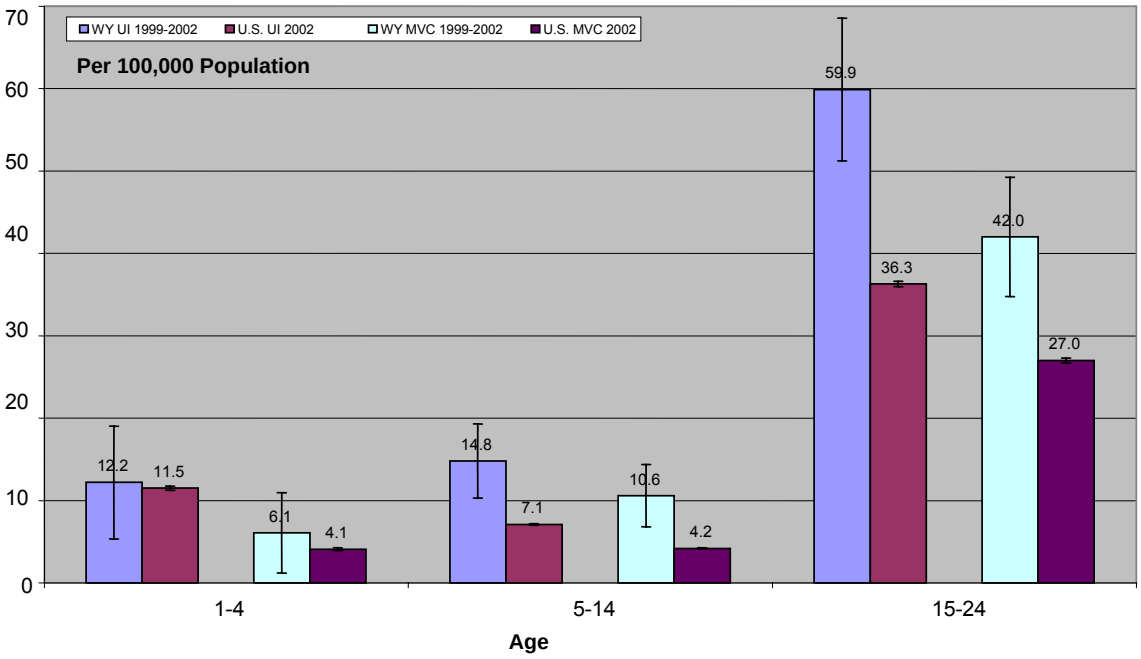
Age	# WY Deaths 1999-2003	WY Rate 1999-2003 w/ 95% Confidence Intervals	U.S. Rate 2002
1 – 4	48	38.0 (27.3, 48.8)	31.2
5 – 14	103	29.1 (23.5, 34.8)	17.5
15 - 24	394	100.5 (90.6, 110.4)	81.5

Sources: Wyoming Department of Health, Vital Records.
Centers for Disease Control and Prevention, National Center for Health Statistics.

Leading Causes of Death

Unintentional injuries (UI) are the leading cause of death for all Wyoming children and adolescents, and motor vehicle crashes (MVC) account for the majority of UI deaths. For all age groups, Wyoming's UI and MVC death rates for 1999-2002 are higher than U.S. rates for 2002. They are significantly higher for all groups except ages 1-4, which may be due to the small numbers of deaths in this age group in Wyoming.

Figure 49: Unintentional Injury Mortality Rates



For children ages 1-14, after unintentional injuries, the leading causes of mortality are other, congenital anomalies and malignant neoplasms. For adolescents and youth ages 15-24, after unintentional injury, the leading causes of mortality are suicide, other and malignant neoplasms.

Table 18: Leading Causes of Death for Children and Adolescents: Rates per 100,000 Population

	# of WY Deaths 1999-2003	WY Rate per 100,000 with 95% Confidence Intervals	U.S. Rate 2002
Ages 1-14			
Unintentional Injuries	75	15.0 (11.5, 18.5)	7.6
Motor Vehicle Related	50	10.4 (7.5, 13.3)	3.9
Other	22	4.6 (2.7, 6.5)	3.7
Malignant Neoplasms	12	2.5 (1.1, 3.9)	2.6
Congenital Anomalies	15	3.1 (1.5, 4.7)	1.6
Influenza & Pneumonia	2	0.4 (-0.2, 1.0)	0.4
Homicide	4	0.8 (0.0, 1.7)	1.3
Suicide	4	0.8 (0.0, 1.7)	0.5
Heart Disease	3	0.6 (-0.1, 1.3)	0.7
All Other Causes	39	8.1 (5.6, 10.7)	6.6
Ages 15-24			
Unintentional Injuries	222	56.6 (49.2, 64.1)	37.0
Motor Vehicle Related	155	39.5 (33.3, 45.8)	27.8
Other	67	17.1 (13.0, 21.2)	9.2
Suicide	88	22.4 (17.8, 27.1)	9.7
Diabetes Mellitus	4	1.0 (0.0, 2.0)	0.4
Heart Disease	2	0.5 (-0.2, 1.2)	2.3
Influenza & Pneumonia	5	1.3 (0.2, 2.4)	0.0
Malignant Neoplasms	18	4.6 (2.5, 6.7)	4.3
Homicide	12	3.1 (1.3, 4.8)	12.5
Chronic Lower Respiratory Disease	3	0.8 (-0.1, 1.6)	0.4
Congenital Anomalies	2	0.5 (-0.2, 1.2)	1.2
All Other Causes	38	9.7 (6.6, 12.8)	12.6

Source: Wyoming Vital Records, National Center for Health Statistics

The following tables describe more specifically the leading causes of death for children and adolescents for the years 1999-2002 compared to 1995-1998.

Table 19: Leading Causes of Death by Age, Wyoming 1999-2002

	<1	1-4	5-9	10-14	15-24
1	Congenital Anomalies 31	Unintentional Injury 12	Unintentional Injury 17	Unintentional Injury 25	Unintentional Injury 184
2	SIDS 21	Homicide 4	Congenital Anomalies 7	Suicide 5	Suicide 70
3	Short Gestation 18	Congenital Anomalies 3	Malignant Neoplasms 6	Malignant Neoplasms 3	Malignant Neoplasms 12
4	Maternal Pregnancy Comp. 11	Malignant Neoplasms 3	Heart Disease 3	Congenital Anomalies 2	Homicide 9
5	Placenta, Cord, Membranes 9	Influenza & Pneumonia 2	Homicide 2	Chronic Lower Respiratory Disease 1	Heart Disease 5

Source: Centers for Disease Control & Prevention, National Center for Injury Prevention and Control, WISQARS

Table 20: Leading Causes of Death by Age, Wyoming 1995-1998

	<1	1-4	5-9	10-14	15-24
1	Congenital Anomalies 33	Unintentional Injury 21	Unintentional Injury 15	Unintentional Injury 33	Unintentional Injury 184
2	SIDS 31	Congenital Anomalies 4	Malignant Neoplasms 5	Malignant Neoplasms 5	Suicide 71
3	Short Gestation 16	Pneumonia & Influenza 3	Congenital Anomalies 3	Pneumonia & Influenza 2	Homicide & Legal Intervention 16
4	Maternal Complications 9	Heart Disease 2	Heart Disease 2	Suicide 2	Malignant Neoplasms 16
5	Placenta, Cord, Membranes 9	Homicide & Legal Intervention 2	Homicide & Legal intervention 2	Heart Disease 1	Heart Disease 12

Source: Centers for Disease Control & Prevention, National Center for Injury Prevention and Control, WISQARS

Adolescent Physical Activity

Data from the 2003 Youth Risk Behavioral Survey (YRBS) indicates that 52.9% of Wyoming High School Students were enrolled in Physical Education (PE), 23.2% attended PE daily, 56.3% participated in a team sport and 67.7% reported vigorous physical activity on three or more days in the past week. About 73% of high school students (77.9% female and 68.9% male) reported watching less than 3 hours of television per day. According to the 2003 YRBS, Wyoming high school students were more likely to report vigorous physical activity and were significantly less likely to watch 3 hours or more of television than their national counterparts and to exercise at least 20 minutes in an average PE class. The only significant change in Wyoming from 1999-2003 was that the percentage of students reporting daily PE decreased. [25] **The Healthy People 2010 objectives are to increase the proportion of children and adolescents who view television 2 or fewer hours a day to 75% and to increase the proportion of adolescents who participate in vigorous physical activity 3 or more days per week for 20 or more minutes per occasion to 85%.[11]**

Table 21: Physical Activity Questions from High School YRBS 1999 & 2003, % Responding "Yes"

	WY Female		WY Male		WY Total		U.S. Total	
	1999	2003	1999	2003	1999	2003	1999	2003
Enrolled in PE	53.4	46.1	67.6	59.6	60.8	52.9	56.1	55.7
Attended PE daily	29.1	15.5	37.0	30.7	33.1	23.2	29.1	--
Exercised $\geq$ 20 minutes in average PE	81.7	89.6	86.2	91.2	84.4	90.5	76.3	80.3
Played on a school sports team	53.9	52.1	63.7	60.5	58.9	56.3	55.1	57.2
Vigorous physical activity	64.6	59.7	76.4	75.6	70.7	67.7	64.7	62.6
Moderate physical activity	24.5	24.5	35.3	33.1	30.2	28.3	26.7	24.7
Watched < 3 hours of TV per day	78.6	77.9	66.9	68.9	72.6	73.4	57.2	38.2

Source: Centers for Disease Control & Prevention, YRBS

Middle School Data

In 2003, 88% of Wyoming Middle School Students (6-8th grades) reported being enrolled in PE, 71.6% reported playing on a school sports team, 81.2% reported vigorous physical activity. The only significant change from 1999 was that the percent of students reporting watching less than 3 hours of television per day dropped from 66% to 31.4%.[25]

Table 22: Physical Activity Questions from Middle School YRBS 1999 & 2003, % Responding "Yes"

	WY Female		WY Male		WY Total	
	1999	2003	1999	2003	1999	2003
Enrolled in PE	88	87	82	89	85	88
Played on a school sports team	71	70	74	73	72	72
Vigorous physical activity	82	82	78	80	80	81
Watched < 3 hours of TV per day	69	29	63	33	66	31

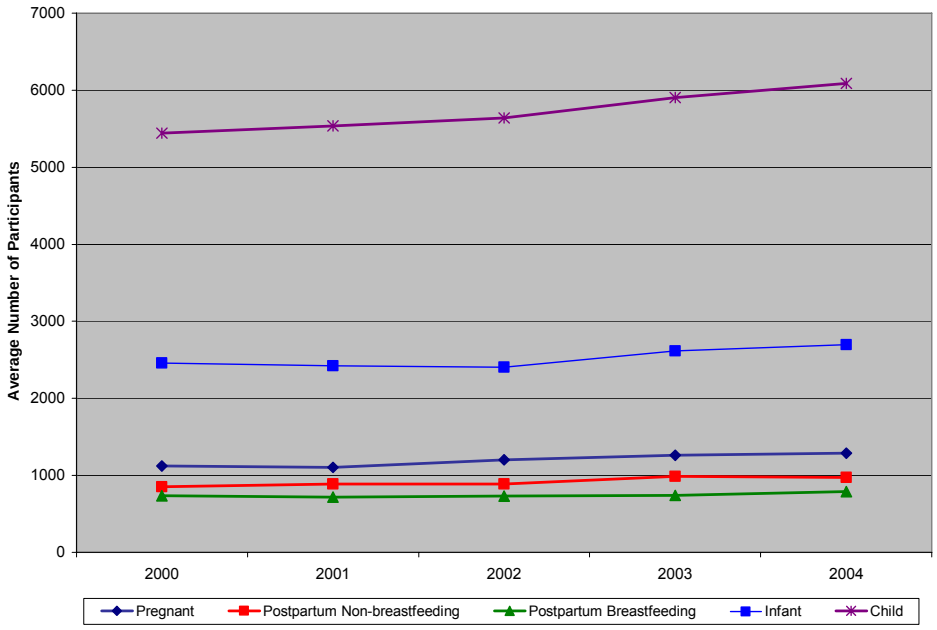
Source: Wyoming Department of Education

Nutrition and Weight

WIC Clients

In 2004, the Wyoming Women, Infants and Children (WIC) program had an average monthly participation of 3,052 women, 2,695 infants and 6,088 children. This represents an increase from the 1999 average monthly participation of 2,708 women, 2,462 infants and 5,556 children.

Figure 50: Average Monthly Participation in the Wyoming Women, Infants and Children Program, 2000 - 2004



Child Nutrition

The Pediatric Nutrition Surveillance System (PedNSS) monitors the nutritional status of low-income children enrolled in WIC, Head Start, the Early and Periodic Screening, Diagnosis and Treatment Program (EPSDT) and other maternal and child health programs. In 2003, 10.7% of these children in Wyoming were born at low birth weight, weighing less than 2500 grams compared to 9.1% nationally and to 9.0% of all Wyoming births. Sixty percent of Wyoming infants in these MCH programs were breastfed compared to 53.2% nationally and 22.8% were breastfed for at least 6 months compared to 21.5% nationally. In 2003, a lower percentage of children in Wyoming (10.3%) were anemic than children in the U.S. (12.8%). This also represents an improvement from 1999 when 14.3% of Wyoming children in WIC were determined to be anemic.

In December of 1999, 12.4% of children enrolled in WIC were overweight (at or above the 90th percentile for weight to height). PedNSS 2003 data reported that Wyoming had the 3rd lowest percentage of overweight children (9.5%) behind Colorado and Utah compared to 14.7% nationally. The percentage of Wyoming children with short stature, those under the 5th percentile of height or length for age, decreased from 11% of children enrolled in WIC to in 1999 to 8.7% in PedNSS in 2003. However, the percentage of Wyoming children with short stature is still higher than the national percentage of 6.2%. **The Healthy People 2010 objective is to reduce growth retardation (short stature) among low income children under 5 years of age to 5%.**

YRBS Nutrition/Weight Data

Data from the 2003 high school YRBS indicated that 29.2% of students themselves as slightly or very overweight and that 43.1% were trying to lose weight. Girls were more likely than boys to consider themselves overweight (36.6% vs. 21.8%) or to be trying to lose weight (61.6% vs. 25.3%). This represents no significant change from 1999, nor any significant difference from their national counterparts. However, Wyoming high school students differ significantly from U.S. high school students when comparing weight by BMI. In 2003, 7.2% of Wyoming high school students were overweight according to BMI, compared to 13.5% nationally and 11.7% were at risk of becoming overweight, compared to 15.4% nationally.25 While there were increases in these since 1999, the increase was not significant; however, it will be important to watch the trend in Wyoming and to act before increases in these indicators do become significant. **The Healthy People 2010 objective is to reduce the proportion of children and adolescents who are overweight or obese to 5% (based on MBI $\geq$ 95th percentile).**[11]

In 2003, 22.5% of Wyoming high school students reported eating five or more servings of fruits and vegetables per day in the previous week, compared to 22% nationally. Significantly more Wyoming high school students reported drinking 3

or more glasses of milk per day than their national counterparts (23.5% vs. 17.1%); however, there has been a significant decrease in milk consumption in Wyoming since 1999 (23.5% vs. 27.7%). [25,26]

While Wyoming high school students were less likely than U.S. students to actually be overweight, obese or at risk of being overweight or obese, there were no significant differences in their behaviors used to lose weight. There were also no significant changes in Wyoming since 1999. Nearly 37% of girls and 29% of boys describe themselves as overweight while only 3.8% of girls and 10.5% of boys were actually overweight by BMI. About 40% of respondents reported dieting, 59.0% reported exercising to lose weight, 12.7% reported fasting, 5.5% reported vomiting or using laxatives and 7.7% reported using diet aids. Females practiced all of these behaviors significantly more than males, although males were more likely to be overweight or obese by BMI.[25, 26]

Table 23: Nutrition and Weight Questions from YRBS, % Responding "Yes"

	Wyoming				United States
	1999 Total	2003 Female	2003 Male	2003 Total	2003 Total
Describe self as slightly or very overweight	28.4	36.6**	21.8	29.2	29.6
Trying to lose weight	40.4	61.6**	25.3	43.1	43.8
Overweight or obese by BMI	6.1	3.8**	10.5	7.2	13.5*
At risk of becoming overweight or obese by BMI	10.7	10.4	13.0	11.7	15.4*
Ate 5 or more servings of fruits & vegetables per day	21.6	19.3	25.2	22.5	22.0
Drank 3 or more glasses of milk per day	27.7*	16.2**	30.6	23.5	17.1*
Dieting to lose weight	38.9	71.8**	46.6	40.2	42.2
Exercising to lose weight	58.6	56.8**	24.0	59.0	57.1
Vomited or used laxatives	4.3	8.3**	2.7	5.5	6.0
Used diet aids	6.6	10.0**	5.3	7.7	9.2
Fasted	12.7	17.7**	7.9	12.7	13.3

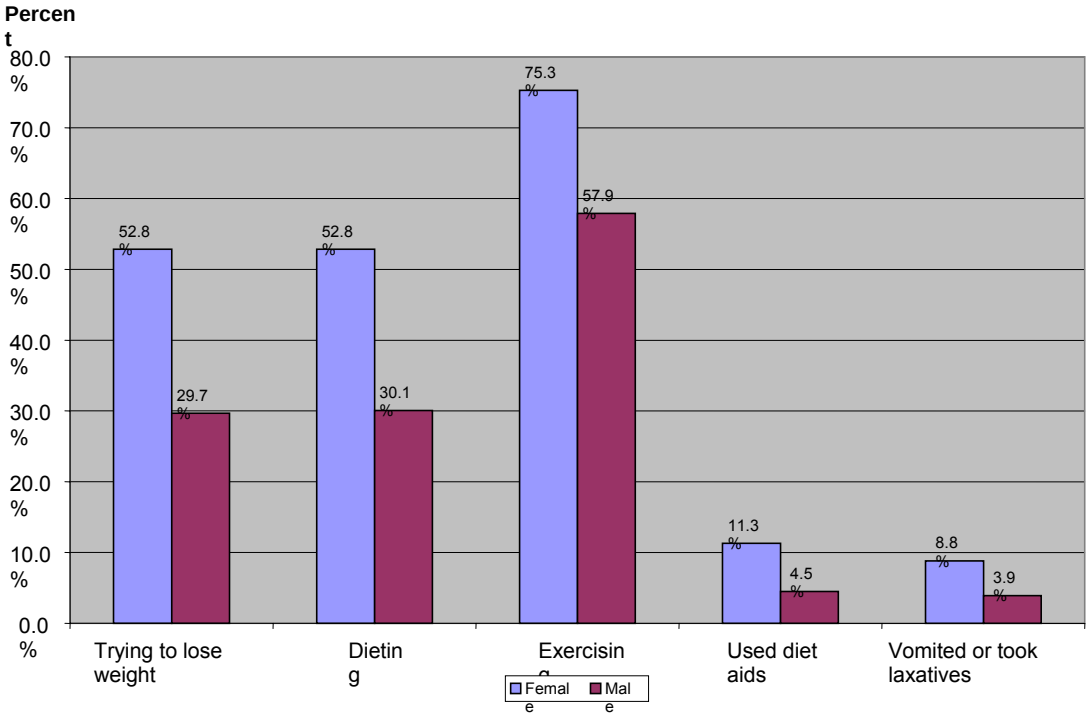
*Indicates statistically significant difference from Wyoming 2003 total.
**Indicates statistically significant difference from Wyoming 2003 Male

Sources: Wyoming Department of Education & Centers for Disease Control & Prevention, Youth Risk Behavior Surveys 1999 and 2003.

Middle School YRBS Data

In 2003, 9.0% of middle school students responding to the YRBS (7.7% female, 10.1% male) were overweight or obese by BMI, compared to 6% in 1999, and an additional 14.1% (12.2% female, 15.7% male) were at risk of becoming overweight or obese compared to 14% in 1999. As with the high school students, the students' perceptions of being overweight were greater than the reality. Twenty-seven percent (33.7% female, 21.1% male) described themselves as being overweight and 40.6% were trying to lose weight. Females were more likely than males to engage in activities to lose weight, although they were less likely to actually be overweight or obese.[25]

Figure 51: Percent of Wyoming Middle School Students Engaged in Activities to Lose Weight, YRBS

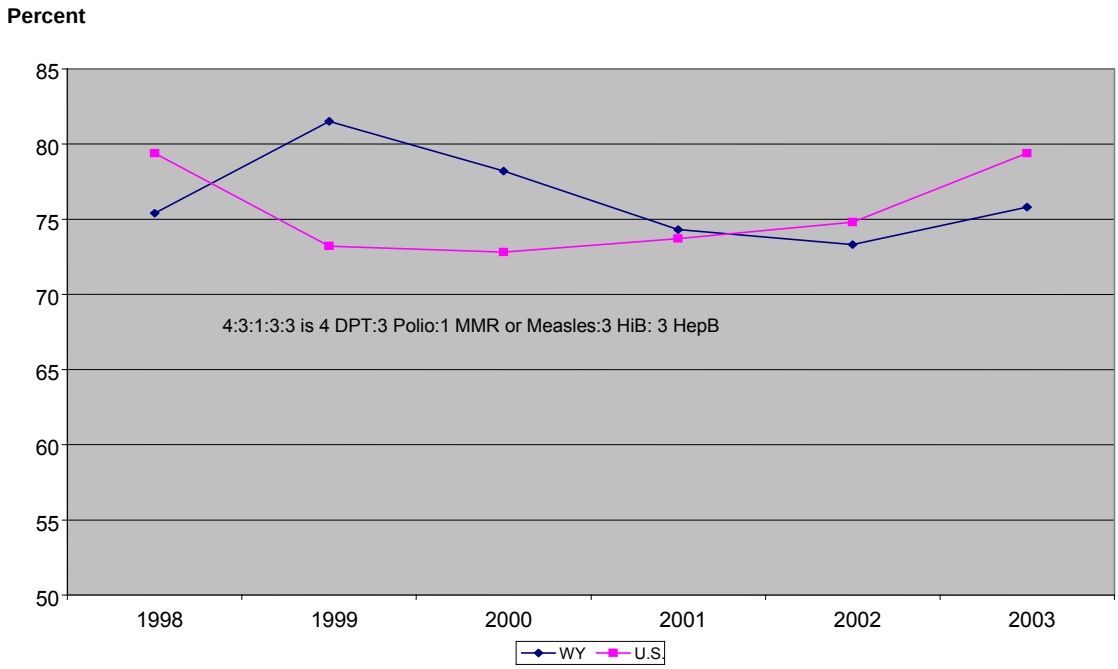


Source: Wyoming Department of Education, YRBS 2000

Immunizations

Vaccines can prevent the debilitating and, in some cases, fatal effects of infectious diseases. The serious health burden of vaccine-preventable diseases (VPDs) is evident from the measles resurgence of 1989 and 1991, resulting in more than 55,000 cases, 11,000 hospitalizations, 120 deaths, and $100 million in direct medical care costs. Vaccines protect more than the vaccinated individual. They also protect society. When vaccination levels in a community are high, the few who cannot be vaccinated – such as young children and persons with contraindications to vaccination – often are indirectly protected because of group immunity (in other words, they live among vaccinated persons who may offer protection from exposure to disease).[11]

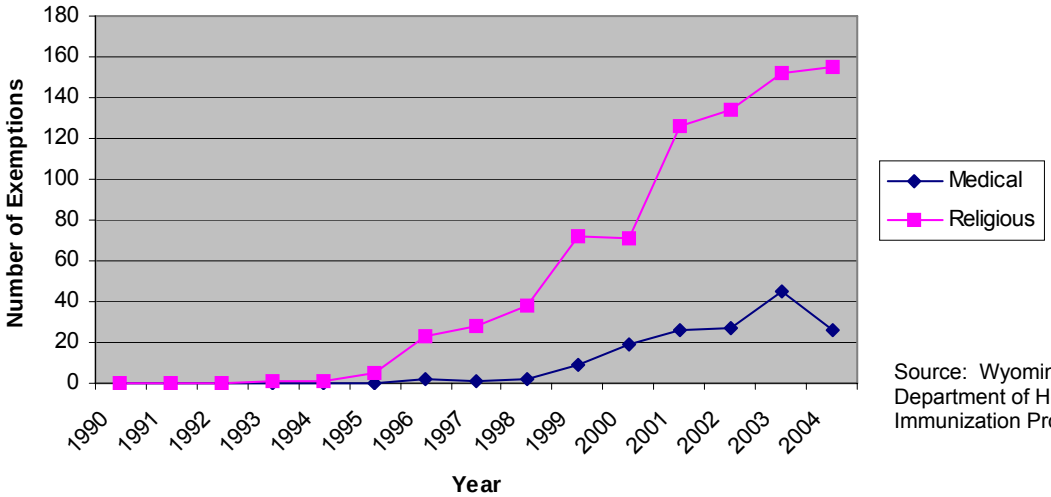
Figure 52: Immunization Levels at Age 19 to 35 Months 4:3:1:3:3



Source: Centers for Disease Control & Prevention, National Immunization Survey

In 2003, the National Immunization Survey (NIS) estimated that almost 76% of Wyoming children ages 19-35 months were up-to-date with the recommended 4:3:1:3:3 vaccination schedule (4 DPT, 3 Polio, 1 MMR or Measles, 3 HIB, 3 Hepatitis B). In 2003, Wyoming ranked 41st nationally for 4:3:1:3:3 in children ages 19 to 35 months.[38,51] While the percentage of Wyoming children ages 19 to 35 months has decreased since 1999, this decrease has not been statistically significant. Nevertheless, Wyoming has seen an increase in requests for vaccine exemptions with the largest increase seen in exemptions due to religious reasons.

Figure 53: Wyoming Immunization Exemptions by Type, 1990-2004

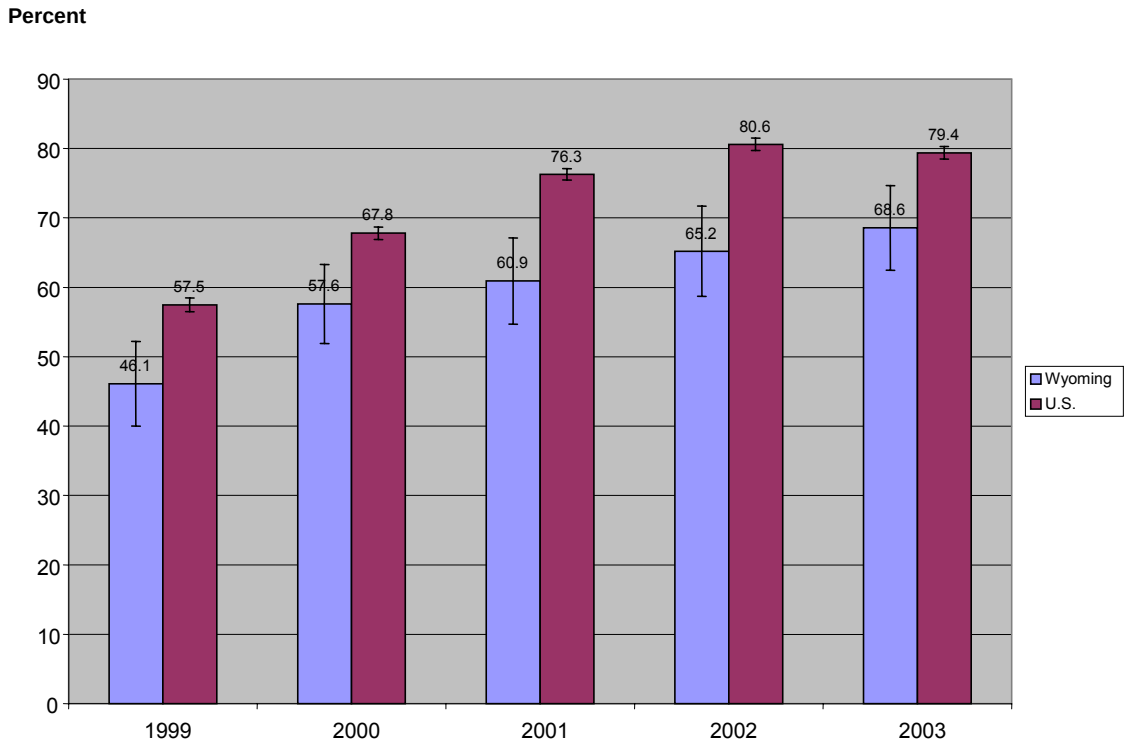


Source: Wyoming Department of Health. Immunization Program

Wyoming data are not available on disparities in immunization levels by race/ethnicity, WIC or poverty status due to insufficient numbers in the NIS sample. Nationally, immunization rates are lowest in African Americans and Native Americans, children on WIC and children living at or below the poverty level.[38]

The Varicella vaccine was approved for use in the United States in March 1995. It is recommended for all children without contraindications from 12 to 18 months of age and for all susceptible children without complications by the 13th birthday.[50] Wyoming consistently has had significantly lower rates of vaccination for Varicella than the United States; however, Wyoming has shown a significant increase in children vaccinated for Varicella since 1999.[38]

Figure 54: Varicella Vaccination Rates

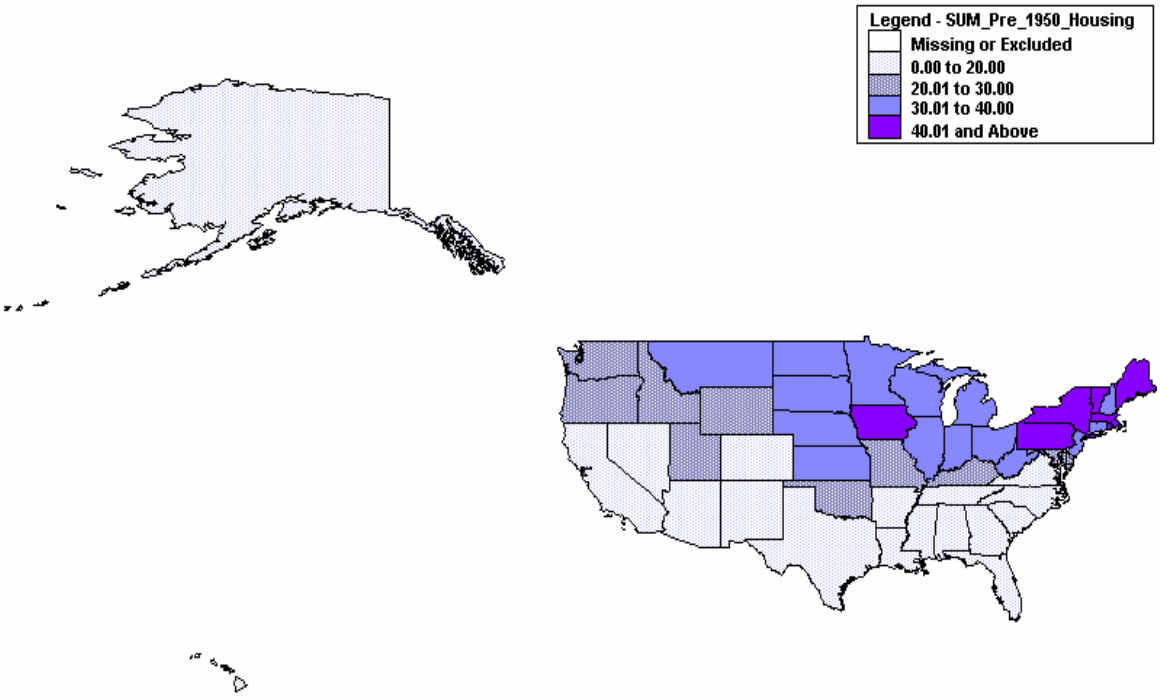


From 1999-2003, there were 100 cases of pertussis in all ages in Wyoming. From 1999-2001, there were less than 5 cases per year. There were 10 in 2002 and 84 in 2003. This mirrors the trend that has been seen nationally. From 1999-2003, there were less than 5 cases of mumps, 7 cases of Hepatitis A, 8 identified Hepatitis B carriers, 9 cases of acute Hepatitis B, less than 5 cases of *Haemophilus Influenzae* B, and 125 cases of chicken pox. Cases of chicken pox increased from less than 5 in 1999-2001 to 12 in 2002 and 109 in 2003, mostly due to improved reporting.[39]

Lead Poisoning

Childhood lead poisoning remains a major, preventable environmental health problem. Blood lead levels (BLL) as low as 10ug/dL are associated with harmful effects on children's learning and behavior. Very high BLLs cause devastating health consequences, including seizures, coma and death. Since the elimination of lead from gasoline, lead-based paint hazards in homes are the most important remaining source of lead exposure in U.S. children.[11] Results from a national survey suggest **that children living in metropolitan areas and in homes built prior to 1946 are at the greatest risk for having elevated BLLs.** With 23.7% of Wyoming housing built before 1950, our state ranks 22nd among states for percentage of older housing with lead-based paint.

Figure 55: Percentage of U.S. Housing Built Prior to 1950 by State



Source: CDC. Screening Young Children for Lead Poisoning. 1997

A 1999-2000 survey reports that 2.2% of U.S. children ages 1 to 5 have BLLs ≥10ug/dL. From 1999 to 2004, 95 Wyoming children 0-18 have been identified with elevated blood lead levels (≥10ug/dL). **The Healthy People 2010 objective is to eliminate elevated blood levels in children**.[11]

Oral Health

Oral health is an important and necessary part of overall health. Dental caries surpasses asthma as the "single most common chronic disease of childhood." Left untreated, dental decay and poor oral health can negatively impact a child's quality of life. Dental sealants, which coat susceptible tooth surfaces with plastic, protect teeth from developing dental caries. **The HP 2010 objective is increase the proportion of children receiving dental sealants on their molar teeth to 50%.**[11]

According to the National Survey of Children's Health, 69.7% of Wyoming children ages 1-17 have teeth that are in very good to excellent condition while 20.8% have teeth in good condition and 9.4% have teeth in poor condition. [68] The Wyoming Dental Health Program conducts dental screening programs in schools and preschools throughout the state. The parents are informed of any dental care needs; school nurses provide follow-up. From July 1, 2003 to June 30, 2004 (FY04), 2,690 students participated in a dental screening with 16% of the children referred for dental treatment. Oral health education was presented through 48 separate programs to 4,400 children from preschool to 12th grade.

The Dental Health Program also provides services for children not covered by Medicaid or Kid Care CHIP. In FY04, 100 children were assisted in accessing dental care and 710 children received orthodontic services (110 through Dental Health and 400 through Medicaid). The program provided 9,674 sealants for 1,789 children (155 of these children were 3rd graders). Medicaid Dental provided sealants for 3,082 children (509 of these children were 3rd graders). Current data is unavailable to determine the percentage of Wyoming children who have received dental sealants. A baseline survey conducted in 2000 revealed that 71.3% of 3rd graders had protective sealants on the occlusal surfaces of permanent molar teeth. **The HP 2010 objective is increase the proportion of children receiving dental sealants on their molar teeth to 50%.**

The Dental Health Program provides technical assistance for community leaders on fluoridation issues to promote community water fluoridation and technical assistance and supplies to schools (K-9) with below optimum fluoride levels in the drinking water. School nurses and volunteers supervise the weekly fluoride mouth rinse activity that reached over 1,900 youths in 11 school districts in FY04.

Substance Use

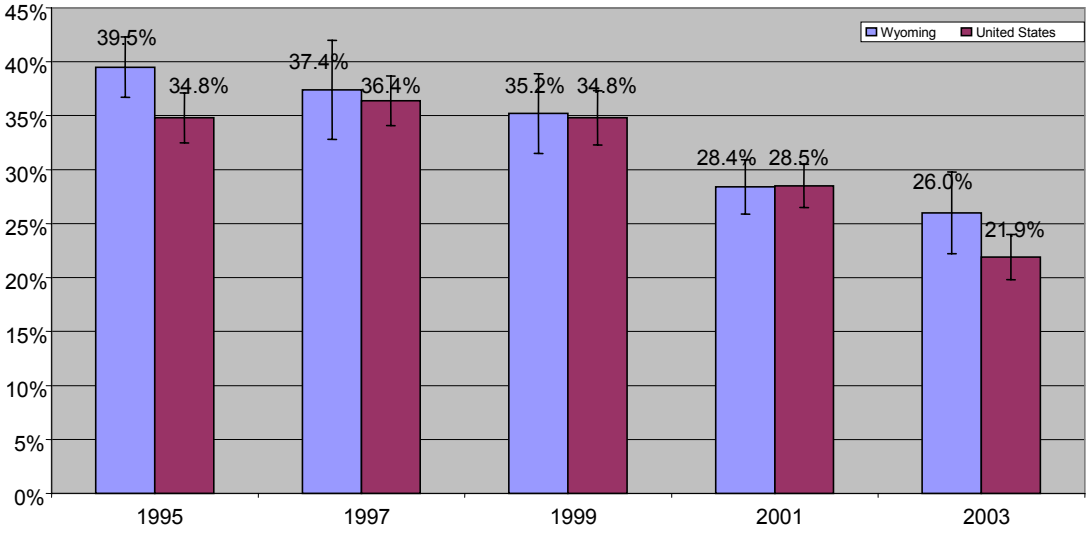
Tobacco

Cigarette smoking causes heart disease, cancer, and chronic lung disease. Smokeless tobacco use causes oral health problems, such as cancer of the mouth and gum and periodontitis. Tobacco use and addiction usually begin in

adolescence and tobacco use is associated with an increased use of illicit drugs.[11]

In 2003, 26% (26.4% females, 24.8% males) of Wyoming high school students responding to the YRBS reported current cigarette use compared to 21.9% of U.S. high school students, and 56.1% had ever tried cigarettes. This represents a significant decrease in current cigarette use among Wyoming high school students since 1999. About 13% of Wyoming high school students smoked on at least 20 of the past 30 days. In 2003, 57.8% of high school smokers reported that they had ever tried to quit smoking.[25, 26] **The Healthy People 2010 objective is for no more than 16% of high schools students to report current cigarette use.[11]**

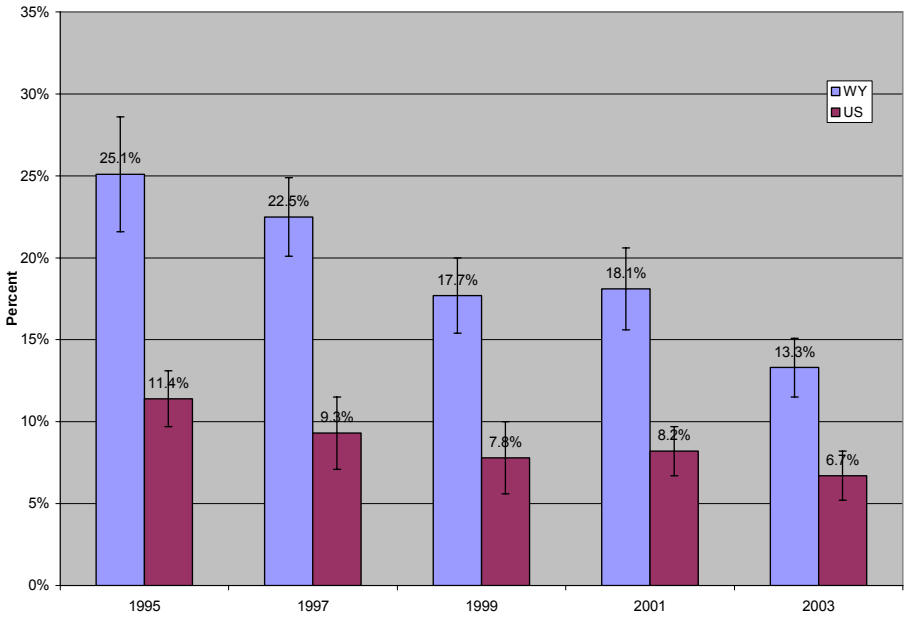
Figure 56: Percentage of High School Students Reporting Current Cigarette Use



Sources: Wyoming Department of Education & Centers for Disease Control & Prevention, Youth Risk Behavior Surveys 1999 and 2003.

While Wyoming high school students report significantly more current smokeless tobacco use than their national counterparts (13.3% vs. 6.7% in 2003), this percentage has decreased significantly since 2001. Males in Wyoming are much more likely than females to be current smokeless tobacco users (21.1% vs. 5.0%).[25,26] **The Healthy People 2010 objective is to reduce smokeless tobacco use in youth ages 12-17 to no more than 1%.[11]**

Figure 57: Percentage of High School Students Currently Using Smokeless Tobacco



Sources: Wyoming Department of Education & Centers for Disease Control & Prevention, Youth Risk Behavior Surveys 1999 and 2003.

Middle School Tobacco Use Data

In the 2003 Wyoming middle school YRBS, 35% of the respondents reported they had ever tried cigarette smoking and 10.2% (11.1% females, 8.0% males) reported they were current smokers. About 3% reported that they had smoked on at least 20 of the past 30 days. About 6% reported ever using smokeless tobacco (3.9% females, 8.2% males).[25]

Alcohol

Studies have shown that about 40% of those who start drinking at age 14 or younger develop alcohol dependence at some point in their life. Excessive alcohol use is associated with heart disease, cancer, and liver cirrhosis and disease. Alcohol use is associated with injuries and deaths from motor vehicle crashes, falls, fires, drowning, violence, and with high-risk sexual behavior.11

In 2003, 49% of Wyoming high school students (49.0% females, 49.2% males) reported current alcohol use, compared to 44.9% nationally. There has been no significant change in current alcohol use since 1995. The 2003 YRBS reported that 76.2% of Wyoming high school students had ever tried alcohol and 34.7% had their first drink before age 13.[25,26] **The Healthy People 2010 goal is to reduce current alcohol or illicit drug use in teens to 11% and to increase the proportion who have never used alcohol to 29%.[11]**

The percentage of Wyoming high school students reporting binge drinking (drinking ≥ 5 drinks on at least one occasion in the past 30 days) has not significantly changed since 1995. In 2003, 34.6% reported binge drinking (33.8% females, 35.7% males). The national percentage for 2003 was 28.3% and not statistically different the Wyoming percentage.[25, 26] **The Healthy People 2010 objective is to reduce binge drinking in youth ages 12-17 to no more than 3%.[11]**

Middle School Alcohol Use

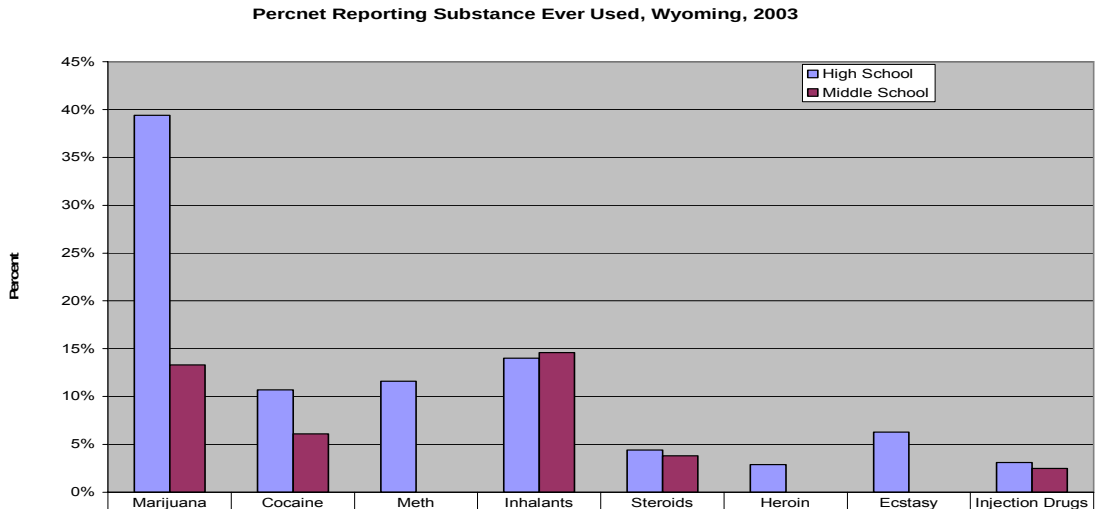
Nearly 46% of Wyoming middle school students reported ever having had alcohol in 2003, compared to 57% in 1999, and 19.7% reported having had their first drink before age 11.[25]

Illicit Drugs

Illicit use of drugs like methamphetamine, marijuana, cocaine and heroin is associated with injury, illness, disability and death. Drug users have higher risks of sexually transmitted disease, HIV and hepatitis infections. Cocaine and other substances can lead to cardiac problems, strokes and seizures. Dependence can lead to long-term physical and mental health problems.[11]

In 2003, 20.4% of Wyoming high school students reported current marijuana use, 4.3% reported current cocaine use and 3.4% reported current use of inhalants. These percentages are comparable to the U.S. reports of 22.4%, 4.1% and 3.9% respectively.[25, 26]

Figure 58: Percent of Wyoming Students Reporting Ever Using by Substance, 2003

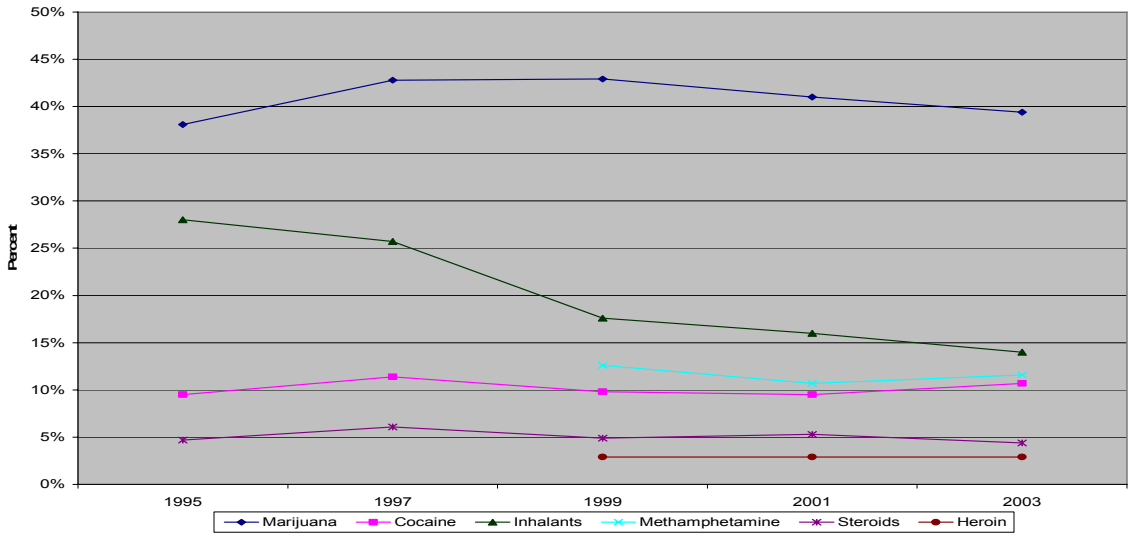


	Marijuana	Cocaine	Meth	Inhalants	Steroids	Heroin	Ecstasy	Injection Drugs
High School	39.4%	10.7%	11.6%	14.0%	4.4%	2.9%	6.3%	3.1%
Middle School	13.3%	6.1%		14.6%	3.8%			2.5%

Source: Wyoming Department of Education, YRBS

The only significant change in the percentage of Wyoming high school students reporting ever using by substance is in inhalant use, which has decreased fro 28% in 1995 to 14% in 2003.[26]

Figure 59: Trends for Wyoming High School Students Reporting Ever Used by Substance, 1995-2003



Middle School Substance Use

Of the middle school students surveyed in 2003, 13.3% reported ever using marijuana compared to 19% in 1999 and 3% reported using it before age 11 compared to 6% in 1999. About 6% reported ever having tried cocaine, just as in 1999, 14.6% reported ever using inhalants, compared to 19% in 1999, and 3.8% reported ever using steroids.[25]

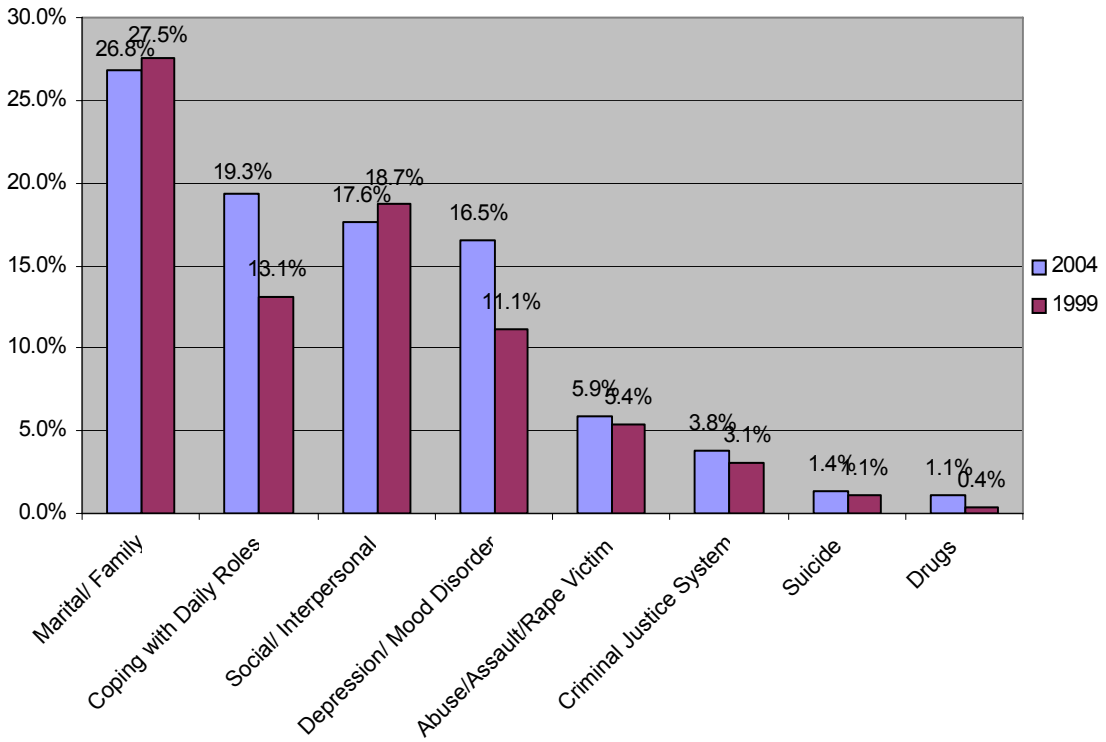
Mental Health

It is estimated that at least one in five children and adolescents ages 9-17 has a diagnosable mental disorder in a given year. Mental and behavioral disorders can lead to school failure, alcohol and illicit substance use, violence or suicide.[22] Nationally, suicide was the 3rd leading cause of death for ages 10-14 and ages 15-24 in 2001. [66]

In 2003, 8.7% of children in Wyoming public schools' special education programs were classified as emotionally disabled compared to 8% in 1999.[6] In 2004, 6,779 Wyoming children ages 0 to 17 were seen as clients in the state mental health outpatient system compared to only 2,664 in 1999. Of these clients, 46.9% were under the age of 12 and 53.1% were 12 to 17. Nearly 54% were male. The majority of these clients (87.4%) were White while 1.6% were Black, 3.4% were Native American and less than 1% were Asian. Nearly 7% of the clients were

Hispanic. Primary problems listed on admission for clients were marital/family (26.8%), coping with daily roles (19.3%), social /interpersonal problems (17.6%) and depression/mood disorder (16.5%).

Figure 60: Primary Problems Listed at Admission to Wyoming State Mental Health Outpatient System, 1999 & 2004



Suicide

In 2003, Wyoming had the highest rate of suicide mortality in the nation (21.1 per 100,000 population compared to 11% nationally).[23] Teen suicide rates in Wyoming are also high compared to the nation. The 2001-2003 teen suicide rate for youth ages 15 to 19 years was 18.6 per 100,000 population, compared to the 2002 U.S. rate of 7.4 per 100,000.The Wyoming rate of suicide per 100,000 population from 1999-2003 was 24.5 for youth ages 15-24, compared to the 2002 national rate of 9.9. As in the United States, Wyoming males ages 15-24 had a significantly higher rate of suicide (38.3, 95% CI = 29.8, 46.8) than females (9.5, 95% CI – 5.1, 13.9).[22, 23] **The Healthy People 2010 objective is to reduce the overall suicide death rate to no more than 6.0 per 100,000 population.[11]**

From 2000-2003, there were an average of 20 hospitalizations per year related to suicide attempts in Wyoming youth ages 0-24, for an average yearly cost of $72,500.[42]

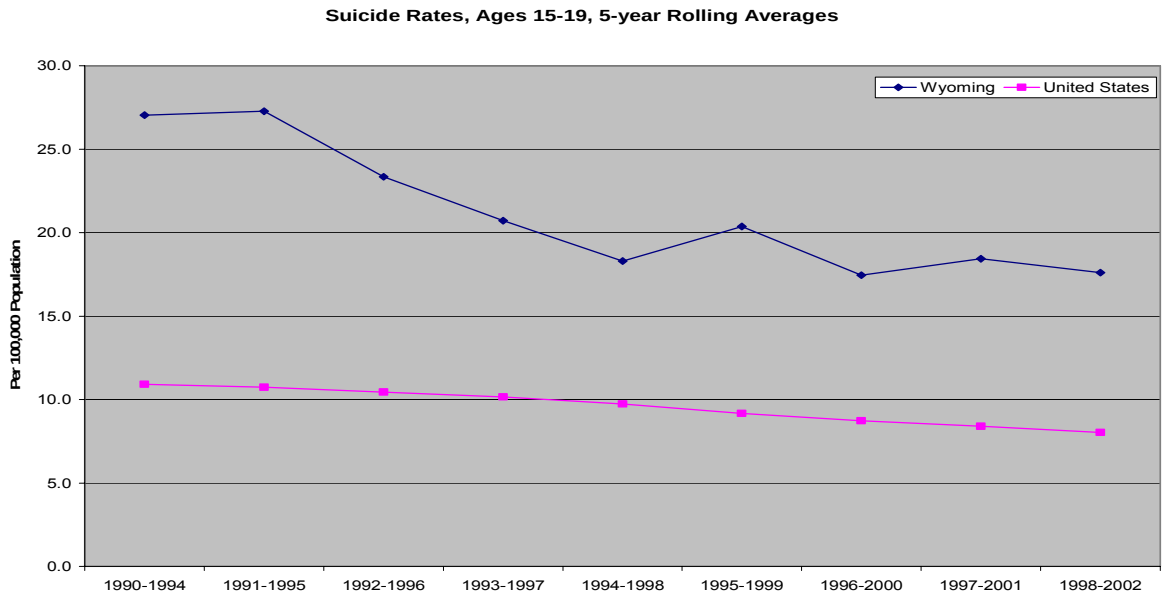
Table 24: Average Annual Hospital Discharges Related to Suicide, Ages 0-24, Wyoming, FY 2000-2003

	Average Number of Discharges	Average Annual Total Length of Stay (days)	Average Length of Stay (days) per Discharge	Average Annual Charges	Average Charge per Discharge
Suicide (E950-E959)	79	159	2.0	$72,524	$3,672

Source: Wyoming Department of Health, Hospital Discharge Database
Discharges where ICD code is any discharge diagnosis.
No data reported from Johnson, Niobrara or Sublette counties

Using 5-year rolling averages, the teen suicide rate for ages 15-19 in Wyoming has steadily declined, although not significantly, since 1990-1994, but still remains significantly higher than the U.S. rate for the same age group.[22]

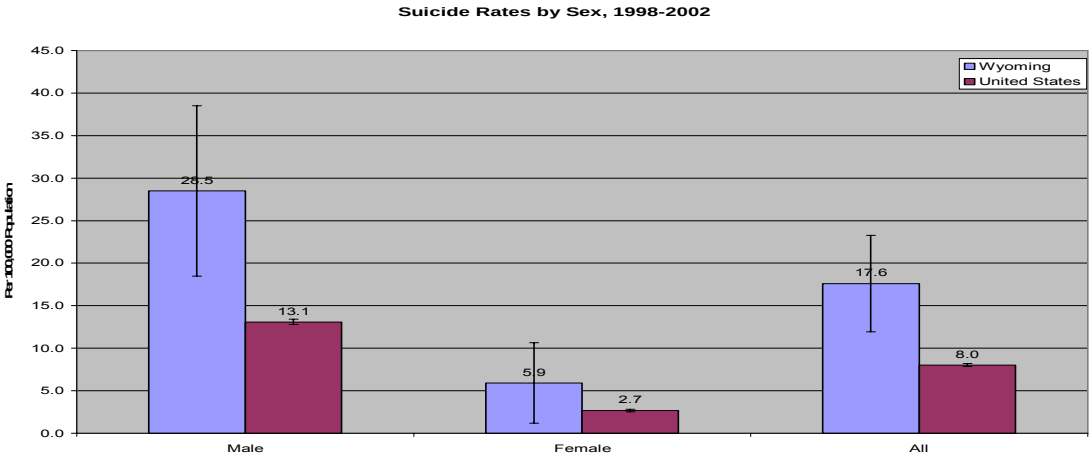
Figure 61: Suicide Rates for Youth Ages 16-19, 5 Year Rolling Averages



Source: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, WISQARS

Wyoming's overall rate for 1998-2002 was significantly higher than the U.S. rate (17.6 per 100,000 vs. 8.0), as was the rate for males in the same time period (28.5 vs. 13.1). There was no significant difference between the Wyoming and U.S. suicide rates for women ages 15-19 in the years 1998-2002.

Figure 62: Suicide Rates by Gender, 1998-2002



Source: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, WISQARS

In 2003, Wyoming high school students responding to the YRBS were more likely than their U.S. counterparts (21.0% vs. 16.9%) to seriously consider attempting suicide. Wyoming female high school students were more likely than males to report that in the past year they felt so sad or hopeless almost every day for 2 or more weeks in a row that they stopped doing some usual activities (36.9% vs. 23.5%), seriously considered attempting suicide (24.8% vs. 17.5%), and to have attempted suicide (12.9% vs. 5.5%).[25,26]

Table 25: Percent students responding "yes", 2003 YRBS

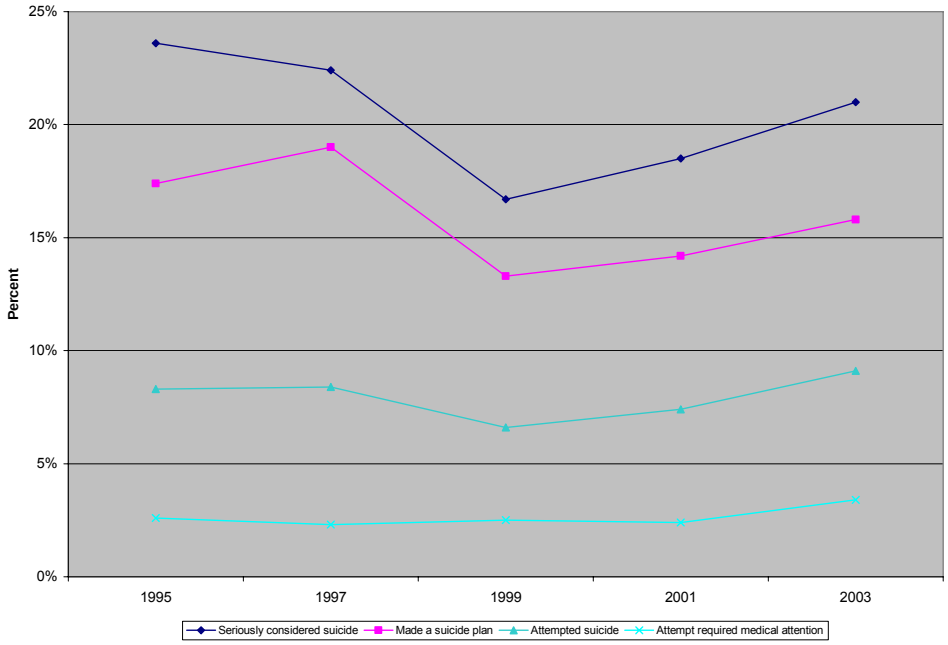
	Wyoming			United States
In the past year:	**Female**	**Male**	**Total**	**Total**
Felt sad or hopeless almost every day for 2 or more weeks	36.9**	23.5	30.2	28.6
Seriously considered attempting suicide	24.8**	17.5	21.0	16.9*
Made a suicide plan	17.5	14.1	15.8	16.5
Attempted suicide	12.9**	5.5	9.1	8.5
Suicide attempt required medical attention	4.1	2.7	3.4	2.9

*Indicates statistically significant difference from Wyoming total
**Indicates statistically significant difference from Wyoming males

Source: CDC, YRBS

After significant decreases from 1995 to 1999 in high school students seriously considering attempting suicide and making a suicide plan, these indicators increased in 2001 and 2003, so that overall, there has been no significant difference in trend since 1995. There has been no change in the percentage of high school students reporting that they attempted suicide or that they had a suicide attempt requiring medical attention.[25]

Figure 63: Percent of High School Student Responding that "Yes, In the Past Year..."



Source: CDC, YRBS

Middle School Suicide Data

In 2003, 22.6% of middle school students surveyed (27.6% females, 18.1% males) reported that they had ever considered suicide, compared to 25% in 1999. About 16% (18.3% females, 14.5% males) reported having made a plan compared to 18% in 1999, and 9.6% (11.3% females, 8% males) reported ever having attempted suicide compared to 11% in 1999.[25]

Injury and Violence

Injuries and violence are the leading causes of death for children and teens. In Wyoming, motor vehicle crashes (MVC) accounted for 33.1% of deaths in children ages 1-14 in 1999-2003 and 39.3% of deaths in youth ages 15-24 in the same time period, compared to 18.4% and 34.2% nationally in 2002. All unintentional injuries accounted for 47.7% of all deaths to children ages 1-14 from 1999-2003 and 56.3% of deaths to youth ages 15-24, compared to 35.9% and 45.5% nationally in 2002.[22]

Violence

From 1999-2003, there were 8 homicides in Wyoming for youth ages 1-14 for a rate of 1.6 per 100,000, compared to 1.2 nationally in 2002, and 11 homicides in youth ages 15-24 for a rate of 5.3 per 100,000, compared to 12.5 nationally in

2002. Based on 2003 YRBS data, Wyoming high school students were more likely than their national counterparts to have carried a weapon in the past 30 days, to have carried a gun in the past 30 days, and to have carried a weapon on school property. The only significant change since 1999 was that Wyoming high school students were more likely in 2003 to feel too unsafe to go to school (5.4% vs. 3.0%).[25] **The Healthy People 2010 objective is to reduce physical fighting among adolescents to 33.3% and reduce weapon carrying by adolescents on school property to 6%.[11]**

Table 26: Violence Questions on YRBS: % Responding "Yes" 2003

	Wyoming			United
	Female	Male	Total	States
Carried a weapon in the past 30 days	9.8**	39.1	24.6	17.1*
Carried a gun in the past 30 days	2.4**	16.3	9.5	6.1*
In a physical fight, past year	21.4**	40.7	31.2	33.0
Injured in a physical fight, past year	2.3	4.4	3.4	4.2
Physically hurt by boyfriend/girlfriend on purpose, past year	7.1	8.8	7.9	8.9
Forced to have sexual intercourse	11.6**	6.7	9.2	9.0
Felt too unsafe to go to school	4.7	6.2	5.4	5.4
Carried a weapon on school property	3.9**	16.0	10.1	6.1*
Threatened or injured with a weapon at school	5.9**	13.3	9.7	9.2
In a physical fight on school property	7.3**	17.9	12.7	12.8

*Indicates statistically significant difference between WY and U.S. totals
**Indicates statistically significant difference between WY males and females

Source: CDC, YRBS

Middle School Violence Data

Nearly half (49.3%) of Wyoming middle school students reported ever having carried a weapon (26.4% females, 69.7% males). More than half (55.3%) reported having been in a fight in the past 12 months (37.2% females, 71.3% males) and 7.2% reported having been in a fight that required treatment by a doctor or nurse (3.4% females, 10.5% males).[25]

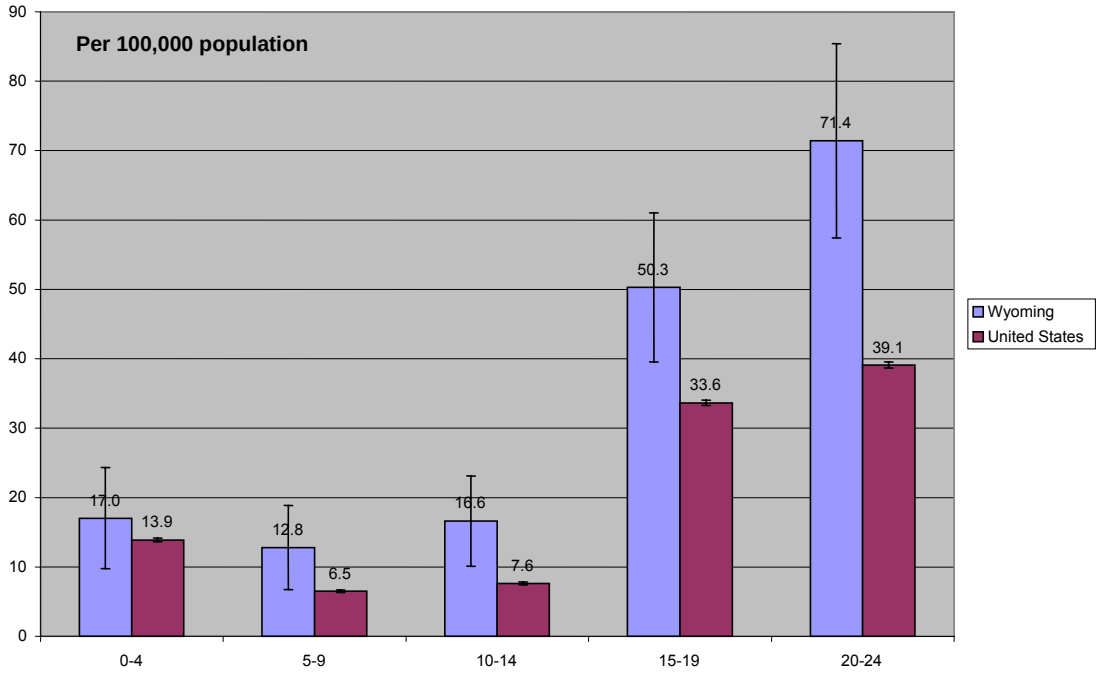
Crime Data

From 1999-2003, there was an average of 1,705 arrests of minors (under 18 years of age). The greatest average number of arrests per year was for larceny (1,372), followed by burglary (227), motor vehicle theft (73.8), robbery (16.6) and arson (16.2).[43]

Injury

From 1999-2002, Wyoming children and youth had significantly higher age-specific unintentional injury (UI) mortality rates than their national counterparts for all ages except 0-4. UI mortality rates were lowest for Wyoming children ages 0-14 and significantly higher for adolescents and young adults.[43]

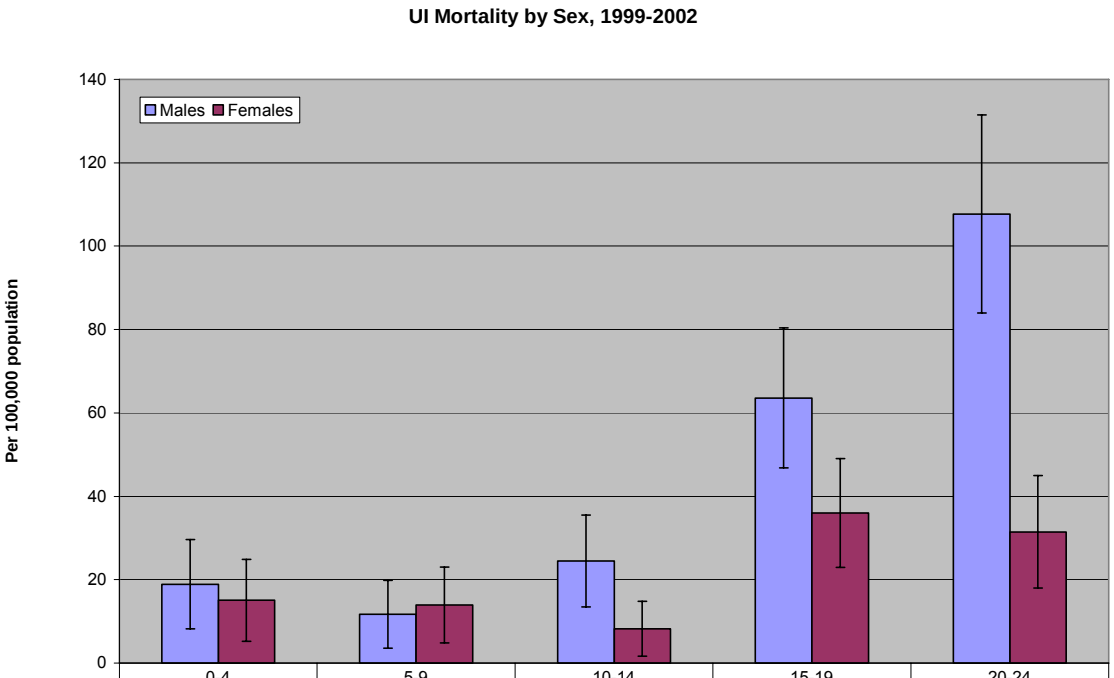
Figure 64: Unintentional Injury Mortality Rates, 1999-2002



Source: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, WISQARS

From 1999-2002, Wyoming males had significantly higher rates of unintentional injury mortality than females for young adults ages 20 to 24 (107.7 per 100,000 vs. 31.5). For all other age groups, there are no significant differences, although this may be due to such small numbers.[43]

Figure 65: Unintentional Injury Mortality by Gender, Wyoming 1999-2002



	0-4	5-9	10-14	15-19	20-24
Males	18.9	11.7	24.5	63.6	107.7
Females	15.1	13.9	8.2	36.0	31.5

Source: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, WISQARS

Yearly data are not included by age group, as the numerators are too small; however, overall, UI mortality rates for ages 0-24 have not significantly changed from 1999-2002.

From 2000-2003, motor vehicle accidents and falls were the greatest causes of injury hospitalizations for children and youth less than age 19 in Wyoming, followed by animal-related, poisonings and ATV accidents. Drowning and firearm related injuries were responsible for the longest average length of stay per discharge, and firearm related injuries and ATV accidents were responsible for the highest average charges per discharge.

Table 27: Hospital Discharges Related to Childhood Injuries, Wyoming 2000-2003

Condition (ICD-9-CM)	Average Annual Discharges	Average Total Length of Stay (Days)	Average Length of Stay per Discharge	Average Annual Cost	Average Cost per Discharge
Motor vehicle traffic accidents (E810-E813.9, E815-E819.9, E988.5)	183	509	2.8	$1,014,344	$5,543
Snowmobile Accidents (E820-E820.9)	11	29	2.7	$34,703	$3,305
ATV Accidents (E821-E821.9)	25	67	2.7	$186,689	$7,543
Drowning (E830-838.9, E910-E910.9, E984)	3	8	3.2	$16,147	$6,459
Falls (E880-E888.9, E987-E987.9)	180	421	2.3	$589,754	$3,286
Animal Related (E827-E828.9)	42	96	2.3	$174,613	$4,182
Pedal Cycle (E826-E826.9)	18	37	2.0	$100,153	$5,488
Choking (E911-E912.9)	3	6	1.8	$13,198	$4,061
Poisoning (E850-E869.9, E980-E980.9)	37	73	2.0	$97,468	$2,617
Pedestrian (E814-E814.9)	7	14	2.2	$27,963	$4,302
Firearms (E922-E922.9, E955-E955.4, E965-E965.4, E970-E970.9, E985-E985.4)	11	32	3.1	$108,309	$10,315

Discharges where ICD code is listed for any diagnosis
Note: No data reported from Johnson, Niobrara or Sublette counties.
Source: Wyoming Department of Health, Hospital Discharge Database

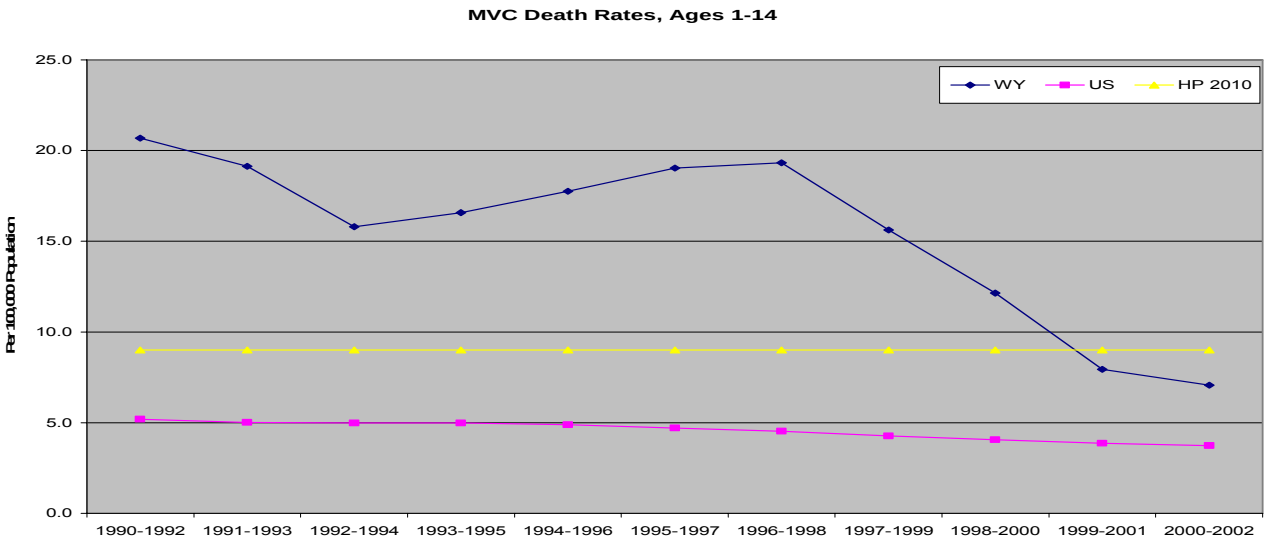
According to the 2003 YRBS, the proportion of Wyoming high school students who rode bicycles and reported rarely or never wearing a helmet was 87.3% (86.4% females, 88.0% males), compared to 85.9% nationally. This represents a significant decrease since 1995, when 93.8% reported rarely or never wearing a helmet. Almost 19% (18.6%) of Wyoming high school students reported in 2003 that they rarely or never wore seat belts (14.1% females, 22.6% males), compared to 18.2% nationally. This also represents a significant decrease since 1995 when 33.4% of high school students reported not wearing seatbelts.[25]

Motor Vehicle Crashes

From 1999-2002, Wyoming had an overall age-adjusted motor vehicle crash (MVC) death rate of 27.0 per 100,000, compared to 15.0 nationally. For these four years combined, Wyoming had the second highest rate of MVC crash deaths.[42] Alcohol was involved in 32.8% of the fatal MVCs in Wyoming in 1999-2002. During this time period, unintentional injury, primarily MVC was the leading cause of death for children and youth. MVC death rates for children and youth ages 1-24 are significantly higher in Wyoming than nationally (22.9 per 100,000 vs. 13.2), and Wyoming ranked as having the 2nd highest rate of MVC deaths in this age group for the same time period.[42,52] **The Healthy People 2010 objective is to reduce MVC mortality to 9.0 per 100,000 population.[11]**

While rates of MVC deaths are higher in Wyoming, there has been a significant decrease in MVC death rates for children ages 1-14 since 1997-1999 (7.1 per 100,000 from 15.6).[43]

Figure 66: Motor Vehicle Crash Death Rates, Children Ages 1-14



Source: Centers for Disease Control & Prevention, National Center for Injury Control & Prevention, WISQARS

In FY 2003, motor vehicle crashes accounted for the greatest number of injury-related childhood hospitalizations in Wyoming, accounting for 558 total days hospitalized and $1.1 million in hospitalization costs. This does not include expenditures for follow-up care, physical therapy, lost work/school time and other indirect costs related to injury.[42]

Almost 19% (18.6%) of Wyoming high school students reported in 2003 that they rarely or never wore seat belts (14.1% females, 22.6% males), compared to 18.2% nationally. This also represents a significant decrease since 1995 when 33.4% of high school students reported not wearing seatbelts.[25] **The Healthy People 2010 objective is to increase use of safety belts to 92%.[11]**

In 2003 motor vehicle accidents in Wyoming, 81% of children under 5 who received no apparent injury were using child restraints compared to 59.7% involved in injury accidents. Of the children under 5 involved in 2003 fatal motor vehicle accidents, none were using child restraints.

Table 28: Percentage of Vehicle Occupants Using Restraints in Motor Vehicle Accidents by Injury Status, Wyoming 2003

Age	% Using Restraints in a Non-Injury Motor Vehicle Accident	% Using Any Type of Restraints in an Injury Motor Vehicle Accident	% Using Child Restraints in an Injury Motor Vehicle Accident
1-4	81.0%	61.2%	59.7%
7-14	70.2%	57.8%	N/A
15-18	85.9%	62.4%	N/A
19-20	89.8%	70.0%	N/A
21-24	89.4%	65.5%	N/A

The 2003 proportion of Wyoming high school students who reported riding in a vehicle with a driver who had been drinking alcohol was 32.2% (33.9% females, 30.7% males), a significant decrease from 1995 (42.3%). There was no significant difference between Wyoming and the United States (30.2% in 2003). The proportion who reported driving after drinking alcohol was 19.2% in 2003 (19.4% females, 18.9% males). There has been no significant change since 1995, and the proportion of Wyoming teens reporting drinking and driving was significantly higher than their national counterparts in 2003 (19.2% vs. 12.1%).[25]

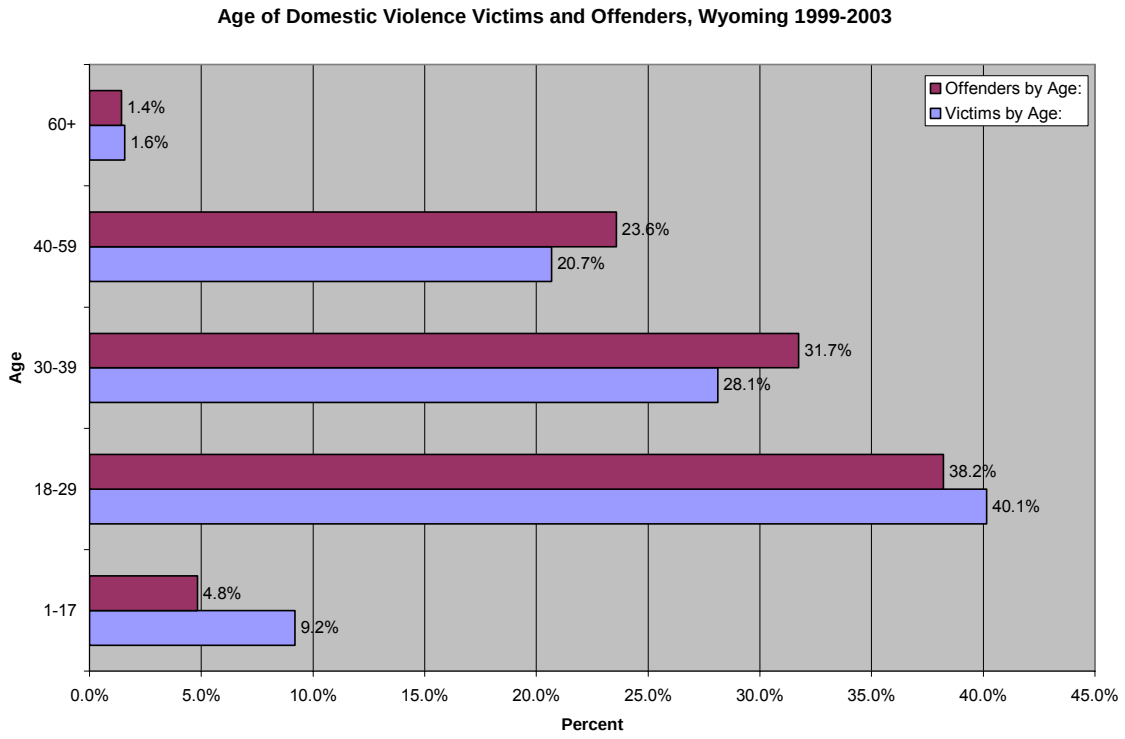
Middle School MVC-Related Data

In 2003, 15.7% of middle school students reported rarely or never using their seatbelts (13.0% females, 18.1% males), compared to 21% in 1999, while 84.3% reported wearing seatbelts always or “most of the time”, compared to only 56% in 1999. Seventy percent of middle school students (65.8% females, 73.7% males) reported never or rarely wearing a helmet while riding a bike in 2003, compared to 81% in 1999. In 2003, 40.1% of Wyoming middle school students reported riding in a vehicle with a driver who had been drinking compared to 49% in 1999.[25]

Family Violence

Males who are physically violent toward their partners are more likely to be sexually violent toward them and are more likely to use violence toward children. The perpetration of intimate partner violence is most common in adults who, as children or adolescents, witnessed intimate partner violence or became the targets of violence from their caregivers.[11]

Figure 67: Age of Domestic Violence Victims and Offenders, Wyoming 1999-2003



Source: Wyoming Office of the Attorney General, Division of Criminal Investigations

From 1999-2003, there were an average of 2,997 reports of domestic violence: 87.7% assaults, 8.5% intimidation, 2.7% violation of protection order, 0.4% sexual assault and 0.1% abductions. In 44.3% of the reports, the offender was an intimate partner (spouse, former spouse, dating partner or former dating partner). Other household members made up an additional 31.6% of the offenders, followed by child (7.3%) and parent (5.8%). Half of the victims were under the age of thirty and 9.2% were under 18 years. Most of the victims (71.7%) were women. The majority of the incidents (93.2%) involved no weapons other than fists, hands, feet and teeth. Of the remainder, 1.9% involved a knife or cutting instrument, 1.0% involved a firearm and 3.9% involved another dangerous weapon.[44]

From 1999 to 2003, family violence was the cause of an average of six deaths per year. Most (51.1%) had no reported injuries, 45.9% had minor injuries, and 2.8% reported major injuries. Offenders were arrested in 52.5% of the cases reported. From 2000 to 2003, there were 7.4 victims of child abuse and/or neglect under 18 years of age, per 1,000 population (n=3,658), compared to 12.3 nationally in 2002.[44] **The Healthy People 2010 objective is to reduce maltreatment of children to no more than 11.1 per 1,000 children under age 18 years.[11]**

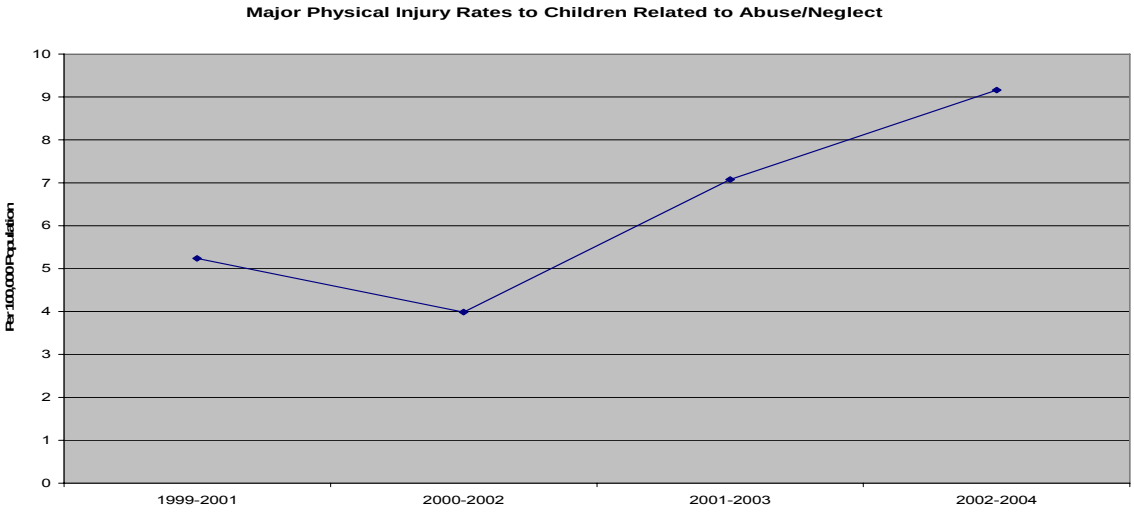
From 2000 to 2004, there was an average of 541 new placements by the Department of Family services. The number of new placements has increased every year between 2000 and 2004. From 2000 to 2004, there was an average of 1,160 Wyoming children who were victims of abuse:

- 29.1% neglect
- 17.7% neglect of treatment
- 12.2% lack of supervision
- 11.8% physical abuse
- 9.0% sexual abuse
- 3.9% dangerous act
- 2.9% educational neglect
- 2.7% physical injury
- 1.9% medical neglect
- 1.7% abandonment
- 1.7% other[44]

During this same time period, 72.8% of perpetrators were the victim's biological parents, 9.1% were a parent's significant other, 5.9% were relatives, 2.3% were child care providers and 1.7% were adoptive parents, foster parents or guardians.[44]

From 2000 to 2004, there was an average of 2.8 child deaths related to abuse/neglect yearly and 8.2 cases of major physical injury. The rate of major physical injury has decreased since the early 1990's, but has begun to increase again from 2000-2001 to 2002-2004; however, caution should be used when interpreting data due to the small numbers. Rates may also indicate changes in reporting, not changes in behaviors. [44]

Figure 68: Major Physical Injury Rates to Children Related to Abuse/Neglect



Reproductive Health

Results from Wyoming's 2003 YRBS indicate that less than half (45.8%) of high school students have had sexual intercourse (46.8% females, 44.7% males), compared to 47.9% in 1999 and 46.7% nationally in 2003. Almost 6% of Wyoming high school students (5.6% females, 5.9% males) had sexual intercourse by the age of 13 in 2003, which represents a significant decrease since 1995 when 8.9% had had intercourse before age 13. Nearly 16% of Wyoming middle school students (10.7% females, 20.8% males) had ever had sexual intercourse according to the 2003 Middle School YRBS.[25, 26] **The Healthy People 2010 objectives are to increase the proportion of adolescents who have never had sexual intercourse before age 15 to 88% and to increase the proportion of adolescents who have never had intercourse to 75%.[11]**

About one third (31.8%) of high school students reported being sexually active, and 27.4% reported using alcohol or drugs before their last sexual intercourse. Sixty-four percent reported using a condom before their last intercourse, a significant increase from 49.5% in 1997. Of those reporting current sexual activity, 22.7% reported using the birth control pill before their last intercourse, and 16.1% reported having had at least 4 lifetime sexual partners. There are no significant differences between Wyoming youth and their national counterparts in terms of sexual behaviors. About one-third (30.6%) of Wyoming high school student who had been sexually active reported not having had sexual intercourse in the past 3 months.[25,26]

About nine percent of Wyoming high school students reported ever having been forced to have sexual intercourse. Girls were significantly more likely than boys to have been forced (11.6% vs. 6.7%).[25]

Table 29: Wyoming Sexual Activity Questions, Percent Responding "Yes"

	Wyoming				United States
	1999	2003			2003
	Total	Female	Male	Total	Total
Ever had sexual intercourse	47.9	46.8	44.7	45.8	46.7
First sexual intercourse before age 13	8.9	5.6	5.9	5.8	7.4
Currently sexually active (past 3 months)	34.5	34.1	29.5	31.8	34.3
Condom use during last sexual intercourse	57.2	61.3	66.7	64.0	63.0
Birth Control pill during last sexual intercourse	20.7	24.6	20.7	22.7	17.0
Alcohol or drug use at last sexual intercourse	31.3	22.4	33.0	27.4	25.4
Had 4 or more partners in lifetime	16.1	16.3	16.0	16.1	14.4

Source: Centers for Disease Control & Prevention, YRBS

Middle School Data

Nearly 16% of middle school students reported ever having had sexual intercourse (10.7% females, 20.8% males), 4.9% reported having had intercourse before age 11, and 5.4% reported having three or more lifetime partners.[25]

Sexually Transmitted Diseases

Chlamydia trachomatis infections are the most commonly reported notifiable disease in the United States. They are among the most prevalent of all STDs and, since 1994, have comprised the largest proportion of all STDs reported to CDC. In women, chlamydia infections, which are usually asymptomatic, may result in pelvic inflammatory disease (PID), which is a major cause of infertility, ectopic pregnancy, and chronic pelvic pain. Data from a randomized controlled trial of chlamydia screening in a managed care setting suggest that such screening programs can lead to a reduction in the incidence of PID by as much as 60%. As with other inflammatory STDs, chlamydia infection can facilitate the transmission of HIV infection. In addition, pregnant women infected with chlamydia can pass the infection to their infants during delivery, potentially resulting in neonatal ophthalmia and pneumonia.[45]

Wyoming has much lower rates for gonorrhea and chlamydia than the nation and in 2003, ranked 49th nationally for gonorrhea rates and 42nd for chlamydia rates.[46] In Wyoming, from 2000-2004, the Wyoming population with the highest gonorrhea and chlamydia rates per 100,000 population was women ages 20 to 24 years. From 2000-2004, the gonorrhea rate in this population was 73.0 per 100,000 compared to 595.2 nationally in 2003. The chlamydia rate during this same time for women ages 20 to 24 was 1,622.4 per 100,000, compared to 2564.4 nationally in 2003.[45,46]

Table 28: STD Rates in teens and young adults, Wyoming & United States

	Gonorrhea					
	Wyoming 2000-2004			U.S. 2003		
	Male	Female	Total	Male	Female	Total
10-14	0.00	1.14	0.55	6.7	40.8	23.3
15-19	14.30	61.80	37.33	262.4	634.7	443.4
20-24	41.79	73.03	56.65	465.9	595.2	529.0
25-29	28.12	39.17	33.39	304.6	260.7	283.0
30-34	19.46	17.84	18.67	179.9	110.9	145.7
35-39	14.59	1.22	7.90	126.2	58.3	92.2
40-44	4.98	0.98	2.96	88.3	31.4	59.7
45-54	2.97	0.51	1.76	45.3	10.4	27.5
55-64	2.35	0.00	1.20	15.7	2.2	8.7

	Chlamydia					
	Wyoming 2000-2004			U.S. 2003		
	Male	Female	Total	Male	Female	Total
10-14	2.1	46.9	23.8	9.8	134.3	70.5
15-19	211.7	1568.2	869.5	423.4	2687.3	1523.9
20-24	479.1	1622.4	1022.9	690.6	2564.4	1604.9
25-29	203.2	488.2	339.3	362.2	964.2	658.3
30-34	73.9	134.5	103.4	168.6	344.1	255.6
35-39	51.0	47.4	49.2	89.2	135.8	112.5
40-44	12.9	14.7	13.8	49.7	57.1	53.4
45-54	5.0	3.6	4.3	20.4	20.6	20.5
55-64	1.6	0.8	1.2	6.9	5.6	6.2

Sources: Wyoming Department of Health, Preventive Health & Safety Division, STD Program and CDC

The 2003 Wyoming YRBS data indicate that 88.3% of high school students reported being taught about HIV in school, compared to 87.9% nationally. This represents a significant decrease from 1997, when 92.4% reported receiving education about HIV in school[32]. Middle school student data shows that 74.6% reported being taught about HIV in school, compared to 82% in 1999.[25,26]

From 1999 to 2003, there were no newly diagnosed AIDS cases for Wyoming youth less than age 20, and there were less than 5 cases of HIV.[47]

Top Issues for the Children and Adolescent Health Population

In 2003, a survey of Maternal and Child Health stakeholders was conducted and 938 people responded. Respondents included health care providers (41.4%), school personnel (19.9%), state/local government employees (10.8%), parents/grandparents (8.4%) and others (28.8%). The top fifteen issues identified by stakeholders for the Child and Adolescent population group were (in order of importance):

1. Drug use and abuse
2. Adolescent cigarette use
3. Access to mental health treatment
4. Health insurance
5. Teen pregnancy/Births to teens
6. Access to regular health care provider
7. Depression
8. Obesity
9. Access to drug treatment facilities
10. Social/emotional development
11. Youth suicide
12. Family planning
13. Nutrition
14. Motor vehicle crashes
15. Adolescent smokeless tobacco use

(See Appendix B)

Retreats with MCH program managers were held in March 2005. Participants were provided with detailed issue briefs, results of the above-mentioned survey and results from a series of state-wide stakeholder focus groups and asked to determine the top five issues for each MCH population. The top issues for the Child and Adolescent population were:

1. Health Insurance
2. Mental Health/Youth Suicide
3. Motor Vehicle Crashes and Unintentional Injury
4. Substance Abuse
5. Family Planning
6. Nutrition and Physical Activity

Issues identified through the 2003 MCH Systems Survey

- 52.7% of counties reported there were no or an inadequate number of adolescent health providers in their country.

- 65.0% reported no or inadequate providers for the substance abusing MCH population in their county and 73.7% reported no or inadequate numbers of mental health services for the MCH population. Both of these indicators have decreased from 91% in 1999.
- 18.2% of counties reported there was a general need for county residents to travel for infant, child and adolescent health services and 60% reported a need to travel for substance abuse treatment services.
- Almost all counties reported an inadequate number of translators, culturally competent materials, and training opportunities for providers in cultural competence.

(See Appendix D)

Children with Special Health Care Needs

Summary of Children with Special Health Care Needs Indicators

Prevalence: In 2001, the percentage of children and youth with special health care needs (CYSHCN) in Wyoming was not significantly different from the national percentage, 12.5% compared to 12.8%. A significantly lower percentage of Non-Hispanic Whites in Wyoming, 88.9% of the state's population, are CYSHCN (12.4% vs. 14.2% U.S.). While only 8.5% of Hispanics in the U.S. are CYSHCN, significantly more of Wyoming's Hispanic population, 12%, is CYSHCN.

Chronic Conditions: From 2000 to 2003, diabetes accounted for the greatest number of selected chronic disease hospitalizations among children and youth ages 0-20, followed by asthma and malignant neoplasm

Asthma: In 2003**,** 6.92% of Wyoming public school children were reported to have asthma. Asthma prevalence in Wyoming school districts ranged from 0.42% to 15.21%. When the data were aggregated by county, asthma prevalence ranged from 2.11% to 10.89%.

Preschool: In 2003, the Division of Developmental Disabilities identified 2205 Wyoming infants and toddlers with disabilities through Early Intervention screenings compared to 1,733 in 1998. Of the 2,161 children enrolled in Head Start, 20.6% had a disability: 13.7% had a speech or language disability, 2.02% had a non-categorical disability, and less than 1 % had a health impairment, orthopedic impairment or multiple disabilities.

School Age: In 2003, there were 11,640 children enrolled as special education students in the public schools in Wyoming, or 13.7% of the enrolled student population. The majority of these children had a learning disability (44%), followed by speech/language problems (25.8%), health problems (10.5%) and emotional disability (8.7%)

CSH Program: In FY 2003, the CSH program had an annual enrollment of 2,301 clients, ages 0-18. Of these, 70.5% had Medicaid, 16.4% had SSI, 21.9% had insurance, and 13.6 were uninsured. In FY 2004, the top primary diagnoses for children in the CSH program were developmental delay, otitis media and Eustachian tube disorder, seizures and convulsions and hearing loss

Medical Home: In February 2005, 95.8% of CSH clients had a defined medical home compared to only 80% in 2000. However, the definition of a medical home in Wyoming's CSH Program, as a primary care provider, does not coincide with guidelines set by the American Academy of Pediatrics.

Providers/ Specialty Care: In 2004, Wyoming had a total of 52 pediatricians in 13 counties, for a rate of 10.4 pediatricians per 100,000 compared to 16 per 100,000 nationally (2002). Forty-three percent (10) of Wyoming counties have no pediatricians. A significantly higher percentage of CYSHCN in Wyoming needed eye glasses or vision care than CYSHCN in the nation (46.9% vs. 35.6).

Insurance/Financial Impact: Significantly more CYSHCN in Wyoming (18.7%) were uninsured at some point during the past year than CYSHCN in the rest of the nation (11.6%), and more than 9% of CYSHCN in Wyoming are currently uninsured compared to only 5.2% nationally. Nationally, Wyoming has the highest percentage of families of CYSHCN (27.8%) experiencing financial difficulties due to their child's medical condition compared to 20.9% of CYSHCN families across the nation.

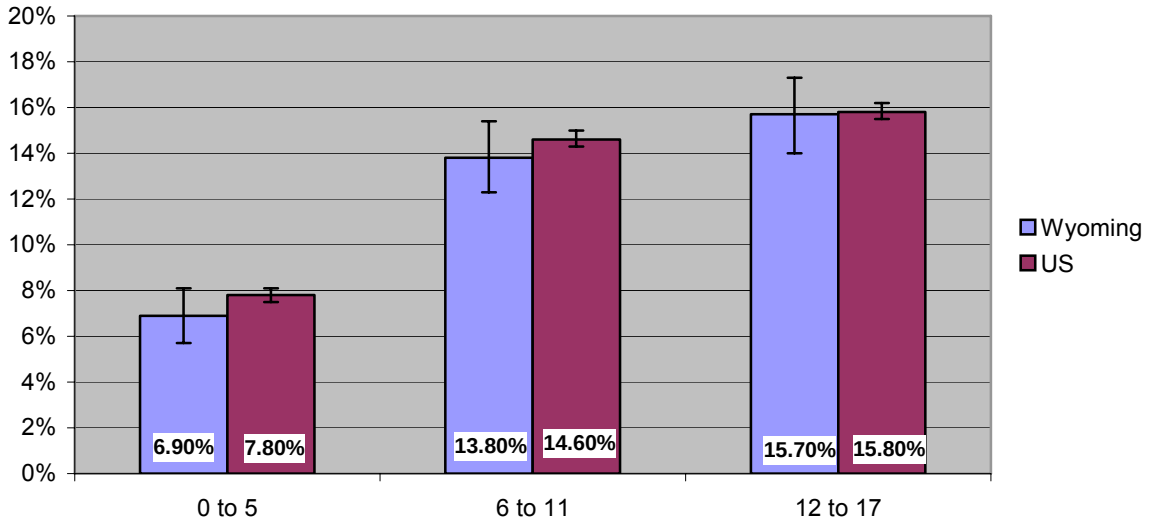
Transportation: Transportation has been identified as one of the greatest barriers to care for CYSHCN.

Prevalence

Prevalence data for children and youth with special health care needs (CYSHCN) is now available from the National Survey of Children with Special Health Care Needs. The survey measures both the prevalence and the effects of special health care needs in children ages 0 to 17. Through parent interviews, information is collected on care coordination, satisfaction with care and access to care including data on health insurance and medical homes. The 2001 survey, conducted from October 2000 to April 2002, screened 7,448 children in 3,850 households in Wyoming and identified 950 children and youth with special health care needs (CYSHCN) in 768 households. After weighting, the percentage of CYSHCN in Wyoming is not significantly different from the national percentage, 12.5% compared to 12.8%. In addition, a similar number of households in Wyoming and in the U.S. have at least one CYSHCN (20.4% vs. 20.0%).

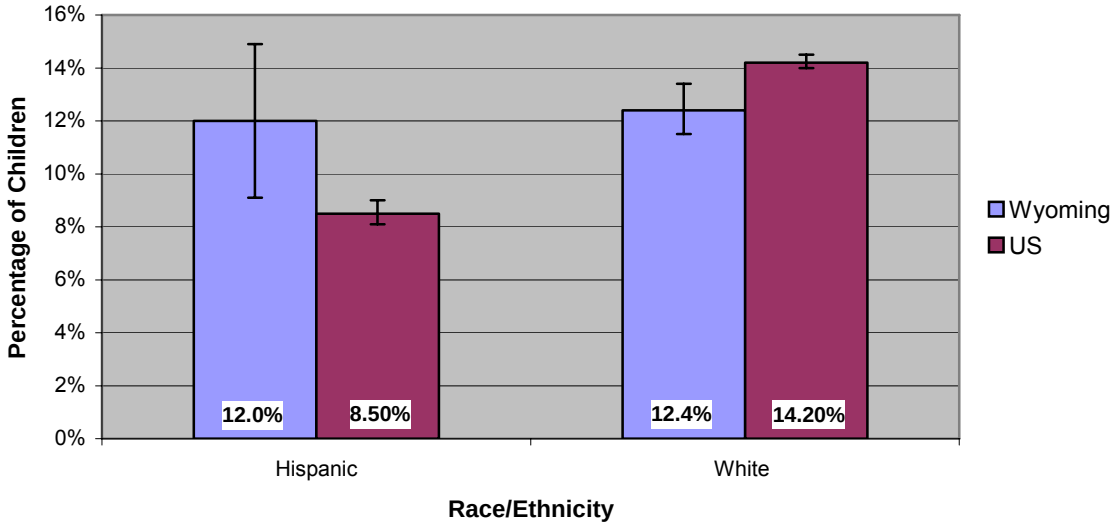
Looking at all Wyoming children, 10.7% of females and 14.3% of males are CYSHCN. In each age group, the percentage of Wyoming CYSHCN is similar to the U.S. percentage.

Figure 69: Prevalence of Special Health Care Needs in Wyoming Children by Age



Prevalence by race and ethnicity is shown in Figure 70. Estimates were not available for Blacks, Native Americans, Asians, Hawaiian/Pacific Islanders or people of multiple races due to low populations in the state. However, racial disparities are evident among Whites and Hispanics. A significantly lower percentage of non-Hispanic Whites in Wyoming, 88.9% of the state's population, are CYSHCN (12.4% vs. 14.2% U.S.). While only 8.5% of Hispanics in the U.S. are CYSHCN, significantly more of Wyoming's Hispanic population, 12%, are CYSHCN.[56]

Figure 70: Prevalence of Special Health Care Needs in Wyoming Children by Race/Ethnicity



Chronic Disease

From 2000 to 2003, diabetes accounted for the greatest number of selected chronic disease hospitalizations among children and youth ages 0-20, followed by asthma and malignant neoplasm. The average length of stay was highest for chronic respiratory disease and spina bifida. While the total charges were highest for diabetes, asthma, malignant neoplasm and chronic respiratory disease, the average charge per discharge was highest for muscular dystrophy, cystic fibrosis and cerebral palsy hospitalizations.[41] It should be noted that the hospital discharge database (HDD) only captures data from Wyoming hospitals and does not capture data from all hospitals in the state. There are 3 hospitals that do not report to the HDD.

Table 30: Hospitalization Data for Chronic Conditions in Youth Ages 0-20 FY 2000-2003

Hospitalization Data for Chronic Conditions, Annual Average FY '00-'03, Ages 0-20**					
Condition ICD-9 Code	**Number of Discharges***	**Total Length of Stay (Days)**	**Average Length of Stay (Days)**	**Total Charges**	**Average Charge per Discharge**
Cystic Fibrosis (277-277.09)	4	12	2.9	$22,129	$5,207
Diabetes (250-250.99)	1283	3024	2.4	$3,883,522	$3,027
Asthma (493-493.99)	983	2370	2.4	$3,438,130	$3,499
Malignant Neoplasm (140-208.9)	367	858	2.3	$1,169,991	$3,192
Spina Bifida (741-741.9)	9	33	3.7	$28,533	$3,170
Chronic Respiratory Disease (770.7-770.8)	226	878	3.9	$1,140,964	$5,049
Cerebral Palsy (343-343.9)	49	149	3.0	$238,045	$4,858
Muscular Dystrophy (359-359.9)	13	42	3.2	$89,236	$6,735

Source: Wyoming Hospital Discharge Data

**Discharges where ICD code is either primary or secondary discharge diagnosis.*

*** Discharges for patients who were less than 21 years of age at time of admittance. Note: no data reported from the following hospitals: Johnson, Niobrara or Sublette*

Table 31: Wyoming Hospitalization Rates (1998, 2000-2003); Youth Ages 0-20

	Rate per 100,000	
Condition ICD-9 Code	**1998**	**2000-2003**
Cystic Fibrosis (277-277.09)	1.9	2.8
Diabetes (250-250.99)	48.4	859.8
Asthma (493-493.99)	287.1	658.6
Malignant Neoplasm (140-208.9)	40.6	245.7
Spina Bifida (741-741.9)	0.6	6.0
Chronic Respiratory Disease (770.7-770.8)	129	151.5
Cerebral Palsy (343-343.9)	22.6	32.8
Muscular Dystrophy (359-359.9)	5.8	8.9

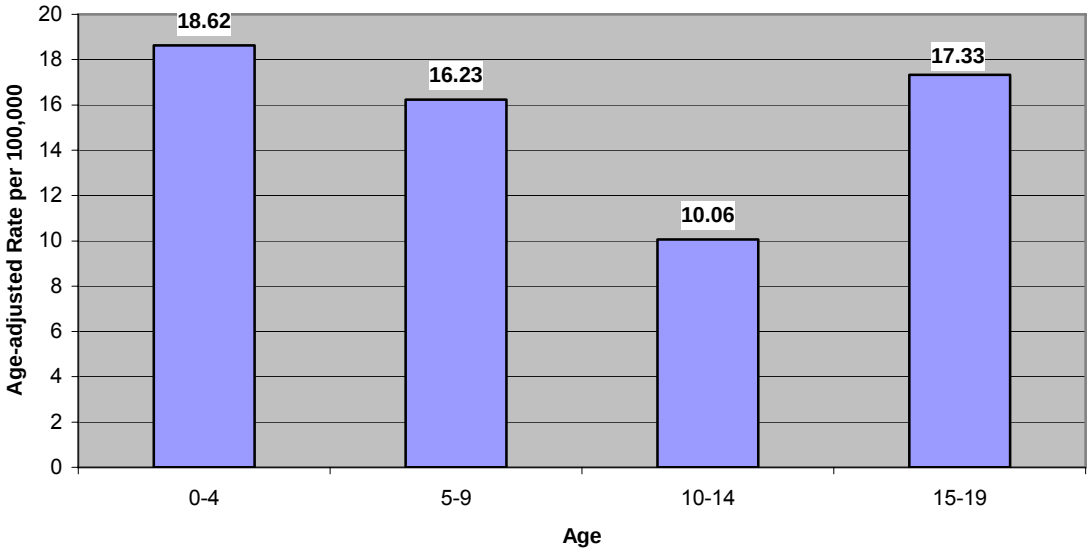
Source: Wyoming Hospital Discharge Data

Childhood Cancer

From 1998 to 2002, there were 107 cases of cancer diagnosed and 20 cancer-related deaths in Wyoming children under the age of 20. Incidence rates for the same time period, which have been age-adjusted to the 2000 U.S. standard population, were similar among males (16.21 per 100,000 population) and females (14.76 per 100,000 population) as were mortality rates (11.4% and 12% respectively). The age-adjusted cancer incidence rate in 2002 for Wyoming children ages 0-19 was 11.7 per 100,000 compared to the 2002 U.S. rate for children 0-14 of 14.6.

Leukemias, lymphomas and cancers of the brain and central nervous system comprise the greatest proportion of childhood cancers in Wyoming (67.9% combined). Leukemias and cancers of the brain and central nervous system are more common in Wyoming children under 10 while lymphomas and cancers of the bones and joints are more common in children 10-19.

Figure 71: Age-Adjusted Cancer Incidence Rates in Wyoming Children by Age, 1998-2002



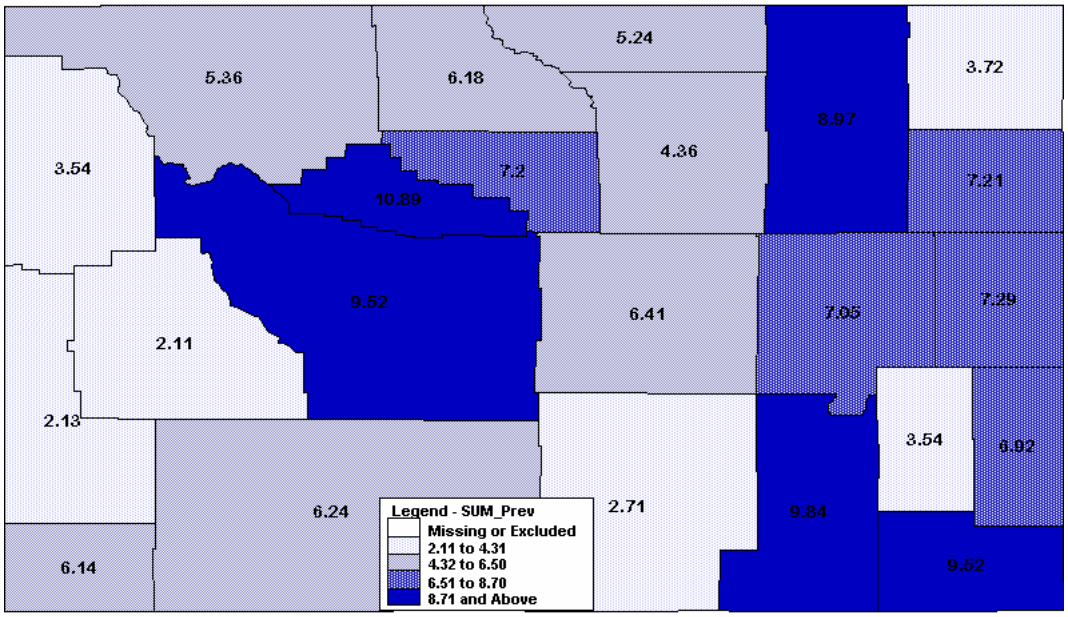
Asthma

The Wyoming Department of Health does not maintain an asthma program or ongoing asthma surveillance. Data on asthma in Wyoming are available through the hospital discharge database and surveys. In 2002, the optional Childhood Asthma module was added to the Behavioral Risk Factor Surveillance System (BRFSS) in Wyoming with results indicating 6.9% of Wyoming children had current asthma.[14]

In 2003, The School Nurse Survey of Asthma Prevalence in Wyoming Public School Children was developed using methodology similar to that used for Connecticut's Survey of the Prevalence of Asthma Among School Age Children.[40] School nurses at every Wyoming public school were asked to identify the number of students at their school with an asthma diagnosis, and of those, the number taking various prescription medications while at school. The results of the survey were identical to the BRFSS results with 6.92% of Wyoming public school children reported to have asthma. Asthma prevalence in Wyoming school districts ranged from 0.42% to 15.21%. When the data were aggregated by county, asthma prevalence ranged from 2.11% to 10.89%. Grouping counties by poverty, counties with fewer than 10% of families with children under 18 below the poverty level together had the lowest asthma prevalence (6.02%) while

counties with 15% or more of families with children below the poverty level had a higher overall asthma prevalence of 8.68%. Similarly, school districts with fewer than 25% of students eligible for free or reduced lunches had the lowest asthma prevalence (5.69%) while school districts with the highest percentages of students eligible for free or reduced lunches, ≥50% of students, also had the highest asthma prevalence (11.02%). The asthma prevalence for urban areas, 7.42% was significantly higher than that of rural areas, 5.33% (RR=1.4, 95% C.I. 1.3-1.5). The most often-used asthma medication at school was the as-needed bronchodilator or rescue inhaler.

Figure 72: Percentage of Public School Children with Asthma in Wyoming by County 2002-2003



Source: School Nurse Survey of Asthma Prevalence in Wyoming Public School Children

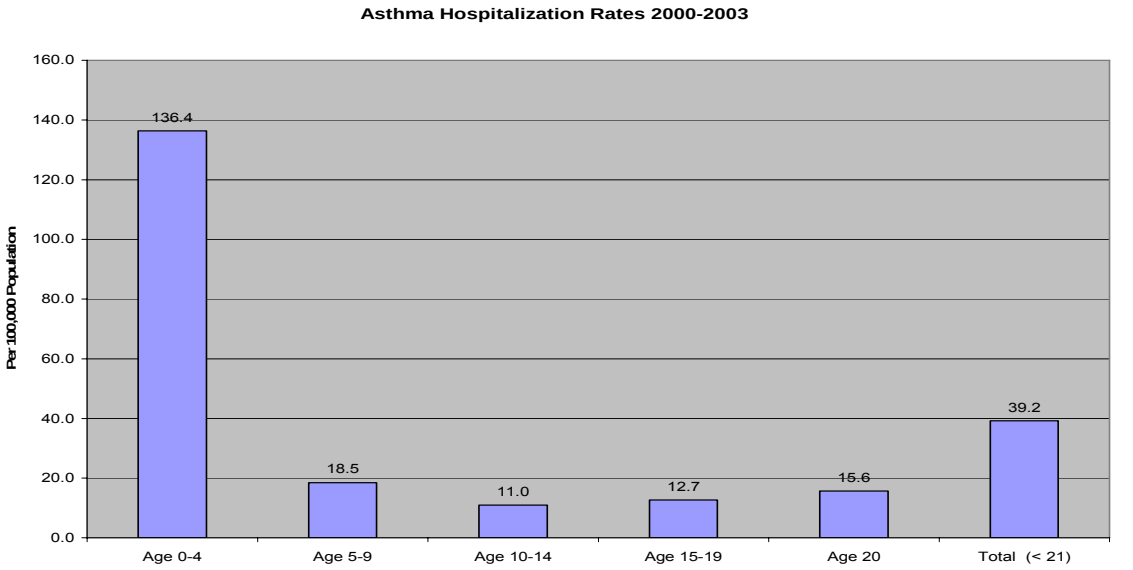
The results of the survey highlight great disparities across school districts and counties. More research is needed to identify the factors that explain asthma in Wyoming and to direct targeted intervention efforts. If the highest school district asthma prevalence values could be reduced to the overall state prevalence of 6.9%, approximately 20% of asthma in Wyoming's children could be prevented.

In FY 2003, a total of 785 Wyoming children under age 20 were hospitalized with asthma as the primary or secondary diagnosis compared to 445 in FY 1998. The hospitalization rate for Wyoming children under age 21 for 2000-2003 with either a primary or secondary asthma diagnosis was 39.2 per 10,000 population compared to 28.7 per 10,000 in 1998. For these children, the average length of stay in Wyoming hospitals due to an asthma admission averaging 2.2 days with the average discharge cost being about $3,000. The overall average cost per year from 2000-2003 for stays due to asthma was $1.78 million. Of the asthma

hospitalizations to children under 21 from 2000 to 2003, 46.2% were paid by Medicaid compared to 39.4% paid by private insurance.[41]

From 2000 to 2003, the largest proportion of hospitalizations, 71.8%, were to children ages 0-4 (compared to 41% in 1998) representing an average yearly cost of $1.04 million. During this period, 1,679 Wyoming children ages 0-4 were hospitalized for asthma, for a hospitalization rate of 136.4 per 10,000 children ages 0-4 compared to 58.8 in 1998. **The Healthy People 2010 objective is to reduce asthma hospitalization to children ages 0-4 to no more than 25 per 10,000 people ages 0-4.**[11]

Figure 73: Asthma Hospitalization Rates for Wyoming Children, 2000-2003



Source: Wyoming Department of Health, Hospital Discharge Database

Congenital anomalies

From 2000 to 2003, there were 417 Wyoming births with one or more congenital anomalies noted at delivery. The most commonly diagnosed anomalies were unspecified anomalies, malformed genitalia, other musculoskeletal / integumental anomalies, other urogenital anomalies, heart malformations, and cleft lip/palate. Data on congenital anomalies are summarized in the maternal and infant health section of this Needs Assessment.

Newborn Hearing Screening

In 2003, 98.4% of newborns born in Wyoming were screened for hearing disorders compared to 94.2% in 1999. Of those screened, 2.8% were referred for re-screening and 85.2% of those passed. Ten percent were referred for diagnostic work-up and 16 infants were diagnosed with confirmed hearing loss.

Newborn Genetic Screening
In 2003, 97.4% of the newborns born in Wyoming were screened for phenylketonuria (PKU), congenital hypothyroidism, galactosemia, sickle cell disease, biotinidase, and cystic fibrosis compared to 99% in 1999. Seven cases were confirmed and received appropriate intervention. In August 2004 an additional screen was added for congenital adrenal hyperplasia. Plans are being made to use tandem mass spectrometry for the newborn genetic screen, which screens for approximately 26 inborn errors of metabolism, no later than July 1, 2006.

Vision Screening
In 2004, 6,182 children between the ages of 6 and 36 months were screened for vision problems, which could lead to amblyopia or lazy eye. Of these, 633 were referred for a comprehensive examination and less than one percent was diagnosed with ambylopia. The number of families who fail to follow up with a comprehensive examination has affected the percentage diagnosed. Therefore, the vision screening program has begun follow-up with the families to determine the reasons for not completing the comprehensive examination.

Preschool age children

In 2003, the Division of Developmental Disabilities identified 2,205 Wyoming infants and toddlers with disabilities through Early Intervention screenings compared to 1,733 in 1998. Of these, 545 were ages 0-2 years (2.9% of the population ages 0-2) and 1,660 were ages 3-5 years (or 9.1% of the population ages 3-5).[53] Wyoming Child Development Centers have successfully marketed a theme of “1 before 2” meaning one developmental screening before 2 years of age. However, the demand has taxed the centers, which face a current shortage of professionals in speech and occupational therapy.

In FY 2004, there were 2,161 children enrolled in Wyoming Head Start compared to 1,695 in FY 1999. In addition, 661 pregnant women and children under 3 were enrolled in Early Head Start. Of the children enrolled in Head Start, 20.6% had a disability: 13.7% had a speech or language disability, 2.02% had a non-categorical disability and less than 1% had a health impairment, orthopedic impairment or multiple disabilities.[54]

UPLIFT Early Start Program, which started in October of 1998, received partial start-up funding from MCH. The Early Start Program is a project to screen children ages 4-6 that are at risk of developing emotional disorders, anti-social behavior and substance abuse. UPLIFT disseminated educational materials, facilitated community consensus building meetings and conducted training workshops in an effort to expand the knowledge base of emotional disorders in young children and of effective screening and intervention models. From 2001 to

2004, 545 early childhood professionals received training in screening and early intervention models, 3,671 participated in other UPLIFT trainings and 191 children, ages 4-6 were screened using the Early Start Program screening instrument.[55]

In 2003, there were 11,640 children enrolled as special education students in the public schools in Wyoming, or 13.7% of the enrolled student population. The majority of these children had a learning disability (44%), followed by speech/language problems (25.8%), health problems (10.5%) and emotional disability (8.7%).[6]

Wyoming Department of Health's Children's Special Health (CSH) Program

The Wyoming Department of Health's CSH program provides care coordination and supplemental funding to families uninsured and under-insured who have children with special health care needs. This may include those eligible for other programs such as Medicaid, DD Waiver, SSI and SCHIP, Eligibility is determined by financial need with families at 200% or less of poverty, and by the child's medical condition, which must be one of the limited conditions covered by CSH. There is a maximum annual cap of $40,000. Care coordination, which is the major emphasis of the program, is provided through a system of public health nurses, state CSH staff, other state programs, private programs and health care providers.

In FY 2003, the CSH program had an annual enrollment of 2,301 clients, ages 0-18. Of these, 70.5% had Medicaid, 16.4% had SSI, 21.9% had insurance, and 13.6 were uninsured. As of February 2005, 41.6% of CSH clients were female and 58.4% were male. Six to ten year olds comprised the largest group of CSH clients (30.0%), followed by 2-5 year olds (25.6%) and 11-15 year olds (23.7%).

Identified by one race/ethnicity only, 81.4% of CSH clients are White, 1.5% African American, 10.7% Hispanic, 5.2% Native American, 0.3% Asian, and 1.0% Other. Both Hispanics and Native Americans are overrepresented in the CSH population compared to the population of Wyoming children under 20 (9% Hispanic, 3.5% Native American). The communities that have higher populations of Hispanics and Native Americans have very active public health nursing departments. These departments have instituted a number of measures to be able to reach and serve these populations better.

In FY 2004, the top primary diagnoses for children in the CSH program were developmental delay, otitis media and Eustachian tube disorder, seizures and convulsions and hearing loss. In FY 2004, the most frequently billed diagnoses for children in the state's CSH program were diabetes mellitus, sensorineural hearing loss, chronic otitis media, and unspecified developmental delays.

The most common referral to the CSH program is for the services of a pediatric specialist to evaluate a child or youth with signs or symptoms but no established diagnosis. The CSH program funds up to two visits to a specialist to establish a diagnosis. Many children receive a diagnosis of asthma or a mental health which are not covered by the CSH Program. The current data system is unable to track children who are referred but not eligible for the CSH program.

Table 32: Top Primary Diagnosis for Children Enrolled in CSH, FY2004

Condition	Number
Developmental Delays	185
Otitis Media and Eustachian Tube Disorder	136
Seizures/Convulsions	132
Hearing Loss	91
Extropia/Esotropia	85
Cerebral palsy	76
Cleft Palate/Lip	63
Autism	60
Diabetes	48
Down Syndrome	37

Source: MCH CSH Program Data

Table 33: Top Most Frequently Billed Diagnoses for Children Enrolled

Condition	Number
Diabetes mellitus	30
Sensorineural Hearing Loss	18
Chronic Otitis Media	15
Unspecified Developmental Delay	10
Convulsions	9
Unspecified Otitis Media	7
Nephrotic Syndrome	4
Epilepsy	4
Cystic Fibrosis	3

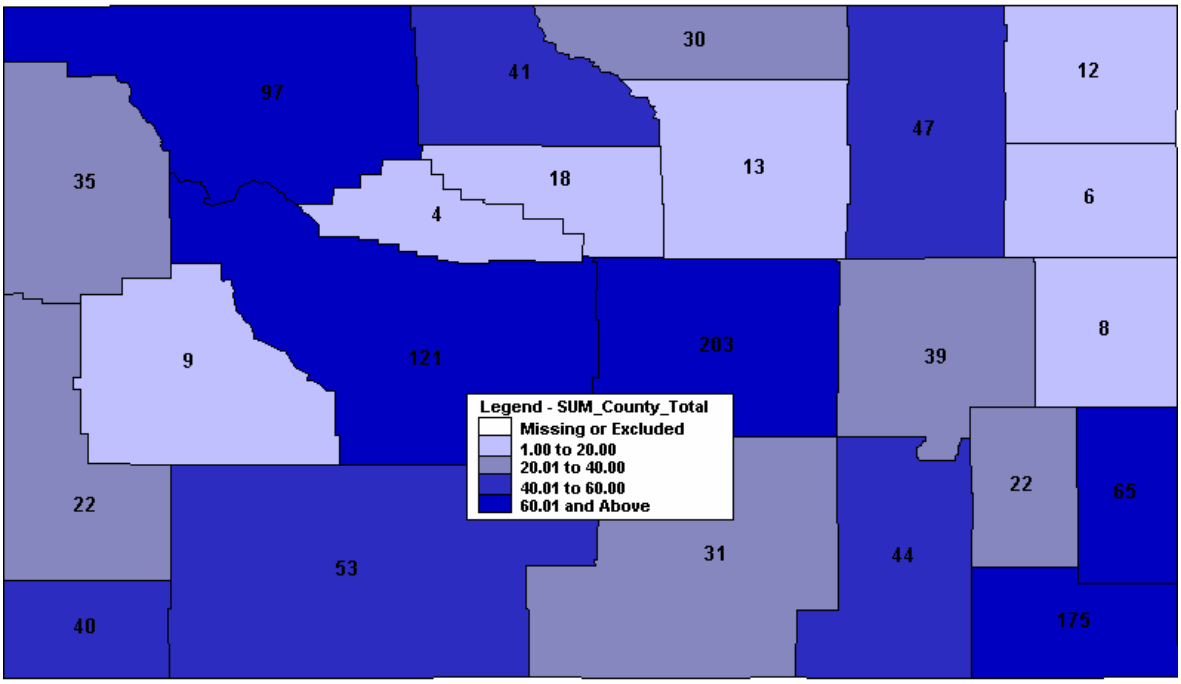
Source: MCH CSH Program Data

CSH Clients

As shown in Figure 74 , the counties with the largest caseload of CSH clients are Natrona, Laramie, and Fremont counties. Fremont County includes the Wind River Indian Reservation; however, it is impossible to determine the number of CYSHCN served in Wyoming's CSH program using the current data system. Teton County includes a large Hispanic migrant population. Recent budget cuts caused CSH services to be available to only "qualified aliens." Laramie and

Natrona are the most highly-populated counties in the state. Counties with the smallest number of CSH clients are Hot Springs, Weston and Niobrara.

Figure 74: Wyoming CSH Client Caseload by County, February 2005



Source: CSH Program

CSH Medical Home

The definition of a medical home in the CSH program does not meet the national American Academy of Pediatrics standard. In Wyoming, it means that the child has a primary care provider who provides personal health care for both well and/or ill in varying degrees with little coordination of the client's care occurring through that office. Wyoming provides care coordination for CSH clients through the public health nurse and the state CSH staff.

According to Wyoming CSH data in February 2005, 95.8% of CSH clients had a defined medical home compared to only 80% in 2000. In seven counties (Albany, Platte, Lincoln, Johnson, Sublette, Weston and Hot Springs), 100% of clients had medical homes. Only four counties had less than 90% of clients with a medical home: Crook (83.3%), Sweetwater (86.8%), Niobrara (87.5%) and Campbell (89.4%). This represents an improvement from 2000 when percentages of clients with medical homes ranged from a high of 90.6% in Park County to a low of 56% in Crook County.[57] Assisting families in finding a medical home is one of the standards CSH has asked local public health nurses to meet. However, the National Survey of Children and Youth with Special Health Care Needs, which includes Wyoming families who may or may not have been on CSH, indicates

that only 55.7% of CYSCHN report having a medical home, 9% do not have a usual source of care and 12.9% do not have a personal health care provider. **The Healthy People 2010 objective is for 96% of people to have a specific source of ongoing care.**[11]

Table 34: CSH Clients with Defined Medical Home, February 2005

County	CSH Clients with a Medical Home	Total CSH Clients	Percentage with a Medical Home
Albany	44	44	100.0%
Big Horn	38	41	92.7%
Campbell	42	47	89.4%
Carbon	29	31	93.5%
Converse	38	39	97.4%
Crook	10	12	83.3%
Fremont	115	121	95.0%
Goshen	63	65	96.9%
Hot Springs	4	4	100.0%
Johnson	13	13	100.0%
Laramie	169	175	96.6%
Lincoln	22	22	100.0%
Natrona	202	203	99.5%
Niobrara	7	8	87.5%
Park	92	97	94.8%
Platte	22	22	100.0%
Sheridan	29	30	96.7%
Sublette	9	9	100.0%
Sweetwater	46	53	86.8%
Teton	33	35	94.3%
Uinta	37	40	92.5%
Washakie	17	18	94.4%
Weston	6	6	100.0%
Wyoming	1087	1135	95.8%

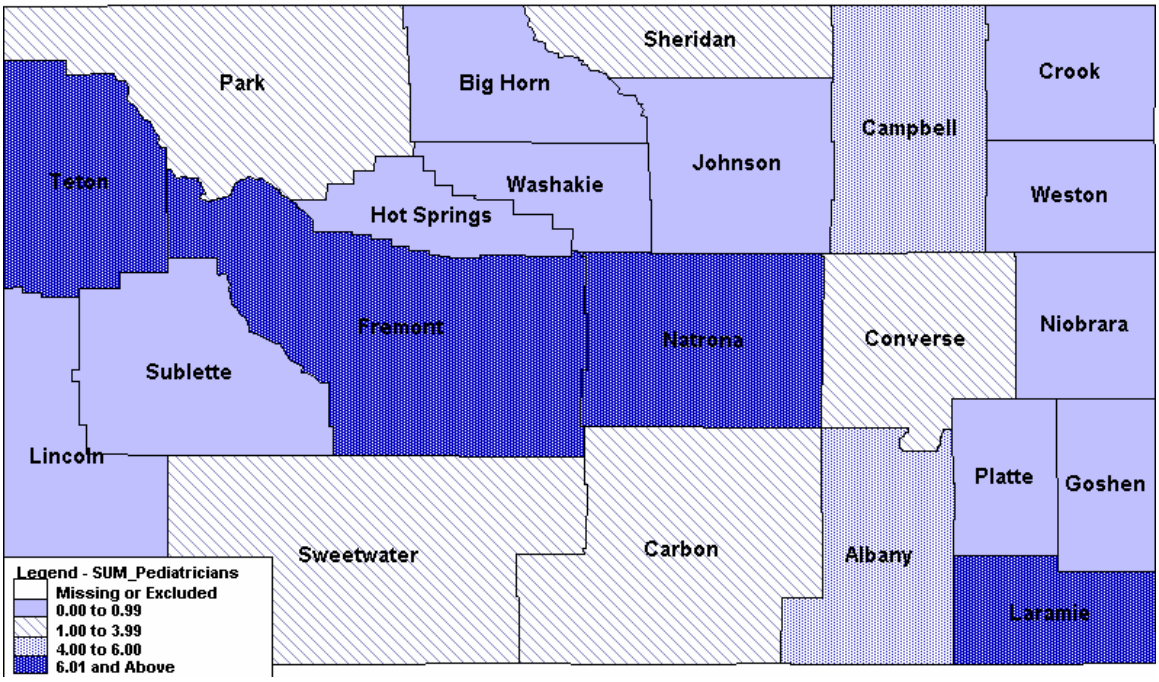
Translation Services

In 2004, translation services were provided for 48 CSH clients. Translation service providers, who cannot be family members, are available in large communities such as Cheyenne, Casper, Evanston and Rock Springs and in Jackson, which has a large Hispanic population. Translation services for the deaf have been requested and funded through CSH. Other communities have very limited local services or no services.

Providers/ Specialty Care

In 2004, Wyoming had a total of 52 pediatricians in 13 counties, for a rate of 10.4 pediatricians per 100,000 compared to 16 per 100,000 nationally (2002). However, only 41 of the 52 pediatricians are currently practicing. Forty-three percent (10) of Wyoming counties have no pediatricians. There were 4.2 cardiologists per 100,000 population compared to 5.9 per 100,000 nationally and 1.6 gastroenterologists per 100,000 compared to 3.1 nationally.[18] None of these specialize in pediatric medicine. There are only two pediatric specialists in Wyoming: a pediatric ophthalmologist who is located in the far southeastern corner of the state and a developmental pediatrician, who does provide a limited number of satellite clinics.

Figure 75: Pediatricians per Wyoming County 2004



Source: Wyoming Board of Medicine

A significantly higher percentage of CYSHCN in Wyoming needed eye glasses or vision care than CYSHCN in the nation (46.9% vs. 35.6).[56] In 2004, there were 4.2 ophthalmologists per 100,000 population in Wyoming with only 1 pediatric ophthalmologist, practicing in the lower southeast corner of the state, compared to 5.6 ophthalmologists per 100,000 nationally.[61, 62]

One of the biggest provider gaps is dentists, especially dentists serving children with special health care needs. The national dentist/patient ratio is 1/1750 while Wyoming has a dentist/patient ratio of >1/4000. In some areas of the state it is

very difficult to find a dentist to see a child for an emergency visit. Often there is a 6 week waiting list. There are 263 dentists within the state. Some of these dentists will not see children, accept Medicaid clients, or see children or youth with special health care needs. Over 25% of these dentists are age 60 or over and nearing retirement age. As they leave their practice, a larger gap in services provided will exist.

Transportation Services

Families of children with special health care needs face traveling further and with greater frequency to see specialists out of state. The availability and cost of transportation is often a barrier to accessing care. In 2005, a majority of participants at the Governor's Council on Developmental Disabilities statewide community forum sought cited transportation, both within the local community as well as to larger cities for treatment, as the biggest obstacle to receiving care.

For CSH clients, the mileage ranges between 180 and 788 with an average of 398.5 miles per visit. Medicaid pays for travel and per diem after an appointment is kept and proper documentation has been submitted. This has affected families who need to see out-of state providers,. Families often do not have the resources to pay for trips that require an overnight stay, and with the rising cost of gas, this will further impact accessing out-of-state care.

Specialty Clinics

While the distance issues make receiving specialty care difficult, Wyoming is one of five states where 85% or more of CYSHCN had no problem getting a referral to needed specialty care compared to 78% nationally.[56] Communication between Wyoming primary care providers and out-of-state specialist regarding treatment plans is often fragmented. Many specialists are unfamiliar with Wyoming communities and the availability of community resources, and therefore do not refer families appropriately.

Because the number of specialty providers in Wyoming is very small, the CSH program contracts with providers to bring specialty care clinics into the state. In 2004, this included 6 diabetic clinics, 5 neurology clinics serving 40 patients, 13 cardiac clinics and 21 developmental clinics serving 158 patients. In addition 21 genetics clinics were held serving 241 patients. The Dental Health Program, funded by Maternal and Child Health, sponsored two cleft lip/palate clinics with a multidisciplinary team in FY04 serving 76 patients. The Department of Education held two Deaf/Blind clinics where a team of specialists created treatment plans for affected children.

Insurance

Significantly more CYSHCN in Wyoming (18.7%) were uninsured at some point during the past year than CYSHCN in the rest of the nation (11.6%), and more than 9% of CYSHCN in Wyoming are currently uninsured compared to only 5.2% nationally. A significant portion of Wyoming's economy is consists of small businesses who find it difficult to afford healthcare coverage for their employees. For Wyoming families of CYSHCN that have insurance, 48.4% do not have adequate coverage to pay for needed services compared to 40.4% of families across the U.S., and compared to nationwide responses, a significantly higher percentage of Wyoming families said that the charges covered by their insurance are never or only sometimes reasonable (34.5% vs. 28.4%).

Healthcare Experiences

Nearly 71% of CYSHCN in Wyoming have family-centered care. Other health care experiences are listed in the table below. Wyoming only differed significantly from the nation in one area. A significantly lower percentage of Wyoming respondents, 11.9%, said that health care providers sometimes or never spend enough time with CYSHCN than the 16.4% of respondents across the nation. This is encouraging in light of the fact that Wyoming ranks 48th out of 50 U.S. states in total physicians with 17.3 per 10,000 Wyoming residents.[69]

Table 35: Indicators for Children and Youth with Special Health Care Needs, 2002

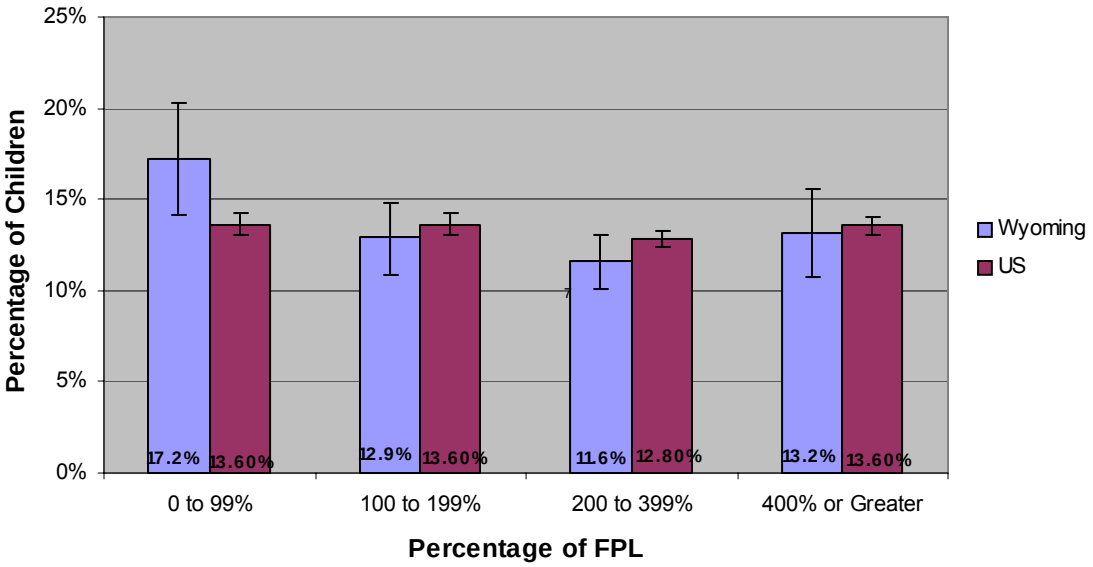
		Sometimes/ Never	Usually	Always
1) Frequency that health care providers spend enough time with CYSHCN	**WY%**	*11.9	25.4	62.6
	Nation %	*16.4	24.4	59.3
2) Frequency that doctors listen carefully to parents of CYSHCN	**WY%**	10.2	26.2	63.6
	Nation %	11.9	23.3	64.8
3) Frequency that health care providers are sensitive to CYSHCN family's values and customs	**WY%**	13.0	23.4	63.6
	Nation %	13.1	24.5	62.4
4) Frequency that parents of CYSHCN get needed specific information from doctors	**WY%**	15.3	28.0	56.7
	Nation %	19.0	26.7	54.2
5) Frequency that doctors make parents feel like partners in CYSHCN's care	**WY%**	11.7	20.7	67.7
	Nation %	14.1	21.3	64.6

* For these indicators, Wyoming results are significantly different than the national results and are further explained below. # Use caution in interpreting these results due to cell sizes <50.
Source: National Center for Health Statistics

Impact on the Family

A higher percentage of Wyoming children living below 100% of the federal poverty level (FPL) have a special health care need (17.2% vs. 13.6%) as shown in Figure 76. While the percentages for the nation and for Wyoming are not statistically different, with confidence intervals that overlap by only 0.1, this finding is important because 13.8% of Wyoming children live below 100% of FPL.

Figure 76: Prevalence of Special Health Care Needs in Wyoming Children by Family Income as a Percentage of Federal Poverty Level



Nationally, Wyoming has the highest percentage of families of CYSHCN (27.8%) experiencing financial difficulties due to their child's medical condition compared to 20.9% of CYSHCN families across the nation. A significantly lower percentage of Wyoming families of CYSHCN (37.2%) paid less than $250 per year for medical expenses compared to CYSHCN families nationwide (50.3%). Wyoming had the second highest percentage of families of CYSHCN (17.3%) who spend more than $1000 each year for medical expenses (not including insurance premiums) each year compared to CYSHCN families in other U.S. states.

Families are also impacted in time spent providing and coordinating care for their CYSHCN child. Over 45% of Wyoming families of CYSHCN children spend between 1 and 10 hours each week, and more than 25% have cut work hours or stopped working to care for their child.

Family Support

UPLIFT

The National Survey of Children and Youth with Special Health Care Needs indicates that 16.7% of Wyoming families report one or more unmet needs for family support services.[56] UPLIFT is a Wyoming organization that provides support, education, advocacy, information and referral for children and youth who struggle with emotional, behavioral and mental disorders. Most families have other risk factors including out-of-placement, violence, poverty, or substance abuse. In 2003, the percentage of UPLIFT clients served by age included:

Table 36: Percentage of UPLIFT Clients Served by Age, Wyoming 2003

Age	Percentage
0-6	7%
7-11	23%
12-17	58%
18-21	9%
Unknown	3%

By race and ethnicity, clients served included: 80% White, 10% Hispanic, 4% American Indian/Alaskan Native, 3% African American, 3% other or not indicated.

From 2001-2003, UPLIFT facilitated 180 parent support groups with 342 parents participating in 2003. In 2004, 306 participants were certified in various levels of the Positive Parenting Program, which is part of the Wyoming Parenting Initiative. UPLIFT also held a statewide parent's conference on "Improving Educational Outcomes for Students with Disabilities", attended by 194 participants.

UPLIFT provides summer camps for families with children with ADHD. They provide sessions for children and youth to learn different methods to cope and have parent sessions on effectively parenting and ADHD child. In 2004, 67 campers and 106 parents participated in camps held in Cheyenne, Casper, and Lander.

Transition

In 2004, Wyoming partnered with Wyoming Institute for Disabilities to obtain a "Champions for Progress" grant. The grant funded parent focus groups to discuss issues surrounding transition. Results indicate that no single agency takes the lead in helping transition youth with special health care needs to adult services. The Individuals with Disabilities Education Act requires transition plans to be in place. Therefore, participants expressed the need for school districts to take a leadership role in partnering with other agencies to create more

comprehensive transition plans. However, school districts often have a very narrow focus. Some ideas presented by parent participants include:

1) A transition network that would train parents to train other parents about transition through newsletters and regional parent forums
2) Structured, flexible transition plans that parents could easily follow
3) Earlier vocational assessment earlier
4) Occupational skills training
5) One Stop Resource Center

Respite Care

In 2004, 642 Wyoming children were on the Developmental Disabilities Waiver program. Of these, 88% of their families were receiving respite care. Only nine of these children were in foster care. Finding respite providers continues to be a problem in small communities. Getting approval to be a respite provider is a lengthy process due to required extensive background checks.

During statewide community forums held by the Governor's Council on Developmental Disabilities along with several other state agencies in the Summer of 2005, attendees were divided by age group they wanted to represent. Some of the central themes in both the birth through preschool group and in the school-aged children groups were the lack of available respite providers in rural areas and the limited funds available for obtaining existing respite care.

Top Issues for Children and Youth with Special Health Care Needs

In 2003, a survey of Maternal and Child Health stakeholders was conducted and 938 people responded. Respondents included health care providers (41.4%), school personnel (19.9%), state/local government employees (10.8%), parents/grandparents (8.4%) and others (28.8%). The top fifteen issues identified by stakeholders for CYSHCN population group were (in order of importance):

1. Health insurance
2. Access to early intervention services
3. Support system for families
4. Coordination between agencies
5. Access to financial assistance
6. Access to specialty care
7. Respite care
8. Access to primary care
9. Family friendly system
10. Improved sharing of treatment plans among providers
11. Child care
12. Oral/Dental health
13. Access to mental health services
14. Access to screening services
15. Vocational planning/job training

(See Appendix B)

Retreats with MCH program managers were held in March 2005. Participants were provided with detailed issue briefs, results of the above-mentioned survey and results from a series of state-wide stakeholder focus groups and asked to determine the top five issues for each MCH population. The top five issues for the CYSHCN population were:

1. Family support and inclusion
2. Early screening and intervention
3. Coordination between agencies and providers
4. Care coordination (assisting and advocating for families in providing care)
5. Data system

Issues identified through the 2003 MCH Systems Survey

- 15% of Wyoming counties reported having no CYSCHN providers in their county and 70% reported having an inadequate number of CYSHCN providers.
- 100% of counties reported that residents have to travel outside of the community to receive specialty care
- 52.5% of counties reported inadequate pediatric emergency services and 4.8% reported having no such services
- 47.6% of counties reported that no tracking system was available to track high risk infants and toddlers

(See Appendix D)

Wyoming's Maternal and Child Health Program

The Wyoming Legislature has authorized the Wyoming Department of Health to secure Title V funds in W.S. 35-4-401-403 and to operate MCH programs in support of public health and safety in W.S. 35-1-240 and 9-2-106. Additionally, W. S. 35-27-101 through 35-27-104 became effective July 1, 2000, authorizing expansion of home visiting services to families with pregnant women and infants through age two. Other vulnerable populations were designated as benefiting from one on one home visits, including premature infants, first time mothers, mothers who are incarcerated, or have substance abuse problems and women who experience violence/abuse. W.S. 35-4-801 provides for metabolic screening and the establishment of a fee, which the MCH section started in 2004 to maintain the newborn metabolic screening program.

The Maternal and Child Health Section (MCH), housed within the Community and Family Health Division (CFHD) of the Wyoming Department of Health (WDH), is responsible for the administration of the Title V Block Grant. The mission of the Division is to assure development of systems of health services for all Wyoming citizens that are family-centered, coordinated, community-based, culturally appropriate, cost-effective and efficient. In addition, the Division has a goal of improving outcomes related to health of all communities in the state. Wyoming is somewhat unique in that our minority populations are primarily Hispanic (6.4%) and Native American (2.1%). We therefore direct the majority of minority services to the two counties in which most of the minority population resides (Teton, Fremont).

In the 2004, legislative session House Bill 33 established and funded a Children and Family Initiative (CFI). It was a statewide effort of stakeholders that included private businesses, non-profits, local interest groups, government and community members joining together in a dedicated effort to improve the well-being of the most valuable assets in our state: our families. The guiding committee for this initiative is charged with developing a roadmap for change and will submit a proposal and recommendations to the Legislature in October 2005. . MCH was actively involved in the planning implementation phase of the Comprehensive Study of Children and in Fall 04, the results of which have been the catalyst for the working efforts of the above CFI. A survey plus two appointed teams of experts defined five (5) results for the citizens of Wyoming which are: 1) Wyoming families living in a stable, safe, supportive, nurturing, healthy environment, 2) A diverse economy that provides a liable income and ensures wage equality, 3) Affordable and accessible health care and insurance, 4) Children born healthy and achieving their highest potential in early development years, and 5) Students successfully educated and prepared for life's opportunities. Each result has four measurable items, which can be utilized as indicators of the progress being made in this area. The results of the CFI have

been recently published in the “Wyoming Family Photo”. Result 4 of this document relates to all of our NPM and SPM, “Children [will be] born healthy and achieving their highest potential in early developmental years.” MCH’s Early Childhood Comprehensive Systems Grant was used to address the early childhood component of this effort.

Key to the operation of the State MCH (Title V) Section is Wyoming’s network of Public Health Nursing (PHN) offices located in each of Wyoming’s twenty-three counties. Public health nurses provide the local service delivery infrastructure by serving as the first contact for families who are in need of MCH services, making appropriate referrals according to families needs. Assistance is provided for pregnant women to apply for Medicaid if they have no insurance coverage. Limited financial support for prenatal care for those pregnant women who have no reimbursement option is offered. Additionally, prevention and intervention services are provided in the areas of communicable disease and pre-admission screening for nursing home placement, as well as playing pivotal roles in homeland security planning. PHN staff serve on interagency community councils and are responsible for updating community resource manuals at least annually.

In addition to collaborating and coordinating with PHN, MCH has a long-standing history of networking/collaborating with state and local consortia of health and social service agencies. Extensive efforts have been made to identify and provide support for health needs, service gaps, and barriers to care for families and children. As a community-based program, MCH utilizes a combination of federal and state funding, in addition to fee collection, for systems infrastructure development and capacity building in an effort to ensure local public health and safety net services for the MCH population.

MCH program services, provided primarily through PHN offices, fill a critical access gap ranging from family planning to specialty clinics for children with special health care needs. Additionally, funds have been provided for intiatives, such as the Wyoming Women’s Reproductive Health Study, that assess the health status of MCH populations. A number of national- and state-level changes have, however, influenced the infrastructure focus of the MCH program by placing increased demands on current available resources.

These changes include:

- In depth scrutiny of Medicaid and its budget, which is the largest budget of the WDH.
- Increased demand on PHN staff to provide Homeland Security Services.
- WDH has begun development of standards to various link data bases within the department in an effort to set up a method of sharing data between programs.
- HIPAA rules have had a negative effect on the exchange of information between providers.

- The decrease in MCH block grant funding, with increased emphasis on infrastructure building and outcomes, without corresponding staff increase.
- Wyoming Medicaid continues eligibility guidelines at 100% FPL.
- Numerous issues related to recruitment and retention of health providers in Wyoming, including the repeated failure of tort reform legislation.
- SCHIP guidelines have increased to 200% FPL.
- The passage of legislation in FY04 to provide funding for a comprehensive survey of the needs of Wyoming's children and families (CFI).
- Numerous changes in the WDH organizational structure (see Appendix).
- WDH initiated and implemented the change to an outcome-based approach project plan, which is now being implemented in other departments within state government

The MCH program has placed an increased emphasis on the public health functions of: assessment, policy development, assurance of access to health care, and performance measurement. Toward this end, MCH continues to commit additional Title V funds to assist local public health departments in delivering core MCH services.

MCH also has a long-standing commitment to community-based systems development and documents some significant achievements, such as the adoption of goals and objectives that "institutionalize" systems development theory into the MCH Services, and establishing the system measure outcomes as evidenced with the county capacity grants. County capacity grants are now based on system measures outcomes and the degree to which both inter- and intra-agency collaboration has been improved at the state level.

The total annual commitment to local community capacity building is now over one million dollars – nearly the full amount of Wyoming's Title V allotment of $1.3 million. It has become increasingly apparent that building capacity within communities is not an easy task, as a result of nursing shortages, wage discrepancies, uneven distribution of providers and the overwhelming cost of providing the necessary needed services.

The MCH Section coordinates with many state, county and local agencies and organizations to improve the health outcomes of the MCH populations. Within the Community and Family Health Division of the WDH, MCH meets regularly with Program Managers from other sections to coordinate services and activities related to the population jointly served. A few highlights of coordination results include:

- Women, Infants and Children (WIC): WIC collaboration has been essential in the development and revision of standards and policies for the perinatal, early childhood and home visiting initiatives. Staff used a computer program purchased by MCH to analyze the nutritional intake of children with special health concerns in specialty clinics. WIC was also a key

consultant to the training provided PHN staff regarding care of families with a premature infant.

- Oral Health Services Unit: Collaboration with Oral Health was essential in the development of the Maternal Dental Care Services Pilot which established the tremendous need for dental care within Wyoming, for all ages of citizens. Children and Youth with Special Health Care Needs (CYSHCN) provides support staff at the cleft palate clinics to conduct quality assurance interviews with families regarding their needs and adequacy of the resources being utilized. MCH, Medicaid and Oral Health have collaborated to address Medicaid's low reimbursement rate for preoperative planning time required for orthognathic surgery, which could have potentially threatened patient access. Further discussions have been held about the lack of dentists overall, especially dentists who will take Medicaid and Special Needs clients. Through collaboration with the Office of Rural Health and Rural Health Loan Repayment Service, ways to entice new providers into the state is being explored.
- Public Health Nursing: An in-depth study was conducted regarding the needs of MCH programs, staffing levels and training needs. From the findings suggestions were made to the documentation committee made up of PHN and MCH staff. Efforts were made to streamline documentation of nursing interventions for the MCH project and new forms were rolled out November 2003 with forms available on the PHN website. Audits at regional meetings were held throughout the state evaluating the standard of care, documentation and training needs of the staff. Beginning in July 2004, PHN and MCH collaborated with Medicaid and their case management contractor, APS, to develop a system of effective sharing of referrals to increase the number of pregnant women who access MCH services. This collaborative effort also serves to enhance the established referral system for all eligible pregnant women to apply for Medicaid services if eligible for services.
- Kid Care CHIP (State Children's Health Insurance Program): The state CHIP staff is now determining eligibility and the FPL has been increased to 185% and will increase to 200% July 2005.

Wyoming has no tertiary care centers for pregnant women or infants, and few pediatric specialists. Therefore, the following tertiary centers provide critical access to health care for our most at-risk families: The Children's Hospital, University of Colorado Health Sciences Center and Presbyterian-St. Luke's in Denver, Colorado; Primary Children's Medical Center, The University of Utah Hospital, McKay-Dee Hospital and Shriner's Hospital in Salt Lake City, Utah; St. Vincent's Hospital in Billings, Montana; and the Regional Medical Center in Rapid City, South Dakota. Satellite clinics were also provided by tertiary care centers out of Denver, to Wyoming residents. MCH has established and maintains strong relationships with these tertiary centers and schedules periodic visits to promote the “Refer all Wyoming Families” message

Coordination with other WDH Divisions: MCH coordinates and collaborates with other Divisions outside the Community and Family Health Division, such as Preventive Health and Safety (Cardiovascular Disease, Diabetes, Cancer Surveillance, STDs, Genetics, Infectious Diseases, and Health Data Analysis), Developmental Disabilities (Part B & C, and Early Intervention Council), Medicaid, and Mental Health and Substance Abuse Divisions. MCH staff has planned and facilitated monthly WDH Program Managers meetings for several years to promote communication and collaboration between entities, with program meetings addressing a number of interests common to legislative issues; services offered by University of Wyoming regarding brochure design; workshop development and management; and presentations by the WDH fiscal office on changes in budget reports.

The MCH Services Coordination Team, chaired and organized by MCH staff, identifies gaps in services and new opportunities to enhance services to the MCH population (pregnant women, infants, children, adolescents, families of reproductive age), which are continually changing. These monthly meetings, attended by a wide variety of individuals, provides a format for networking about staff changes, new programs, areas of concern and also areas of common interest.

MCH has active Memoranda of Understanding (MOU) stipulating the joint resolution of issues with several organizations within WDH including: Medicaid, Developmental Disabilities, Emergency Medical Services for Children Program, DFS, and the Immunization Program.

Coordination with Agencies external to the WDH: Participation on interagency councils, task forces and committees provide opportunities to coordinate MCH programs and strategies with agencies outside the Community and Family Health Division. The Title V Director and the MCH staff participate actively on the following:

- Association of Women's Health and Obstetrical and Neonatal Nurses (AWHONN)
- Behavioral Health Task Force
- Breastfeeding Task Force
- Child Care Certification Board
- Child and Family Initiative
- Children's Trust Fund Board of Directors (DFS)
- Comprehensive Social Services Planning Team (DFS)
- Deaf Services Planning Committee (collaboration with DD)
- Early Intervention Council (DD)
- Governor's Early Childhood Development Council (pre-birth to age 8)
- Governor's Planning Council on Developmental Disabilities
- Head Start State Collaboration Project
- Healthy Child Care Wyoming (CISS Grant) Management Team
- Healthy Mothers/Healthy Babies Coalition

- Impaired Driving Coalition
- Lions Early Childhood Vision Screening Project (public-private)
- March of Dimes (MOD)
- Mountain States Regional Genetics Network
- Newborn Hearing Screening and Intervention Board
- Sexual Risk Reduction Coalition
- State Child Health Insurance Program Steering Committee
- Wyoming Information Network (WIN)
- Wyoming Community Coalition for Health Education (WCCHE)
- Wyoming Early Start Program
- Wyoming Health Council (reproductive health)
- Wyoming Health Resources Network (provider recruitment & retention) Wyoming Primary Care Association (WPCA)
- Wyoming Suicide Prevention Task Force

The project title of Wyoming's CISS grant is Healthy Child Care Wyoming. This project is administered by the University of Wyoming and is a collaborative effort between MCH, DFS, Department of Education, Head Start Collaboration State Team, Learning Centers, Children's Nutrition Services/Child Care Finder and Wyoming Children's Action Alliance. Healthy Child Care Wyoming has trained 35 Certified Child Health Consultants (CHCCs) in a pilot online course developed by the University of Wyoming. (This course is now offered by the University for graduate credit as a means to sustain the training effort.) Additionally, a system to obtain data on accidents and injuries in childcare has been developed. The University of Wyoming provides the curriculum for an Early Childhood Program Director's Certificate, including monitored video analysis of competencies for the infant/toddler credential.

Project goals for Healthy Child Care Wyoming are as follows: (a) Caring for Our Children (CFOC) Health and Safety Performance Standards will be utilized by all public health nurses and CCHCs in Wyoming, as well as child care centers and home providers; (b) out-of-home care providers will provide healthy and safe environments for infants and toddlers; (c) accidents and injuries in child care will decrease, (d) the team of CCHC trainers in Wyoming will increase; (e) a voluntary system of CCHC nurse/early childhood development teams will be developed to work with early childhood programs in all counties, and (f) 100%of eligible children will be enrolled in health insurance. Healthy Child Care Wyoming has developed needed infrastructure for an integrated service system of health consultants for childcare providers, but has yet to develop sustainable funding mechanisms to support the consultative services. As a part of the ongoing Early Childhood Systems Grant in Wyoming, the tenets of Healthy Child Care Wyoming are being addressed as are the possible funding mechanisms which include fees paid by centers and quality child care subsidies.

MCH was awarded the Early Childhood Comprehensive Systems ECCS Grant through HRSA, for the project period July 1, 2005 through June 30, 2008. During

the planning stage of the grant, Wyoming crafted a comprehensive statewide early childhood development strategic plan, focused on the development of a comprehensive cross-systems effort to address: (a) access to health insurance and medical homes, (b) mental health and social-emotional development, (c) early care and education, including childcare, (d) parent education, and (e) family support. This grant continues to be operated via a MOU with DFS. It has become the cornerstone for legislative action to study services available for Wyoming's children. Objectives focus on content development of the strategic plan as follows: (a) identification of key traditional and nontraditional partners, including how alliances have been developed and what needs to be included for maintenance of them; (b) completion of a comprehensive needs assessment; (c) assessment of resources for strengths and gaps, capacity, and financing of early childhood activities; (d) development of a clear vision and mission statement; (e) prioritization of issues, including the five areas identified; (f) implementation; and (g) establishment of a set of indicators for tracking early childhood outcomes. Additionally, objectives will be incorporated to identify strategies which: (a) improve data collection, (b) identify short and long-term sustainable funding for potential service expansion and service integration, (c) promote finance and resource leveraging, and (d) influence policy.

In FY00, the Office of Minority Health (OMH) funded a multi-state study, an Assessment of State Minority Health Infrastructure and Capacity to Address Issues of Health Disparity. A recommendation was for states to assist in collecting, tracking and disseminating data on health status by race and ethnicity, citing specific inaccuracies of health data related to Native American populations, one of the most prevalent minority populations in Wyoming. The OMH provided technical assistance to improve infrastructure development related to policies, programs and practices on health disparities. As a result, the Minority Health Needs Assessment was conducted and is available for review and use in policy and program development.

Wind River Indian Reservation based efforts strive to expand services and address the MCH mission to work with a broad network of partners to improve the health and well-being of Wyoming's Native American MCH population. This network focuses on strengthening both personal care and public health systems to establish an integrated community system of comprehensive services. As always, most efforts have primarily been dedicated to building collaborative partnerships at the community level with providers and public/private organizations in an effort to maximize scarce financial and human resources. It was documented in the Wind River Indian Needs Determination Survey-2 (WINDS-2), revised in 1999, that Native Americans have a disproportionately high level of needs in some areas. Capacity grants have provided infrastructure development efforts related to improving access to primary and preventive services. Efforts reflecting improved access to care include contractual relationships with the Fremont County Health Department, as well as the

Fremont County-based collaboration of Safe Kids Wyoming Chapter and Injury Prevention Project, which serves Lander and the Wind River Indian Reservation.

A major strength of the MCH Title V program is its potential both to identify and address persistent and emerging health issues for women, infants, children and youth, including those with special health care needs, by assisting families on their self determined needs. The flexibility of the block grant to address a very broad array of health issues supports formation of vast networks to benefit families.

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Appendices

A. County Level Data

B. Stakeholder Survey Data

C. Focus Groups Report

D. MCH Systems Survey

E. Definitions

F. Health Status Indicators

G. Acronyms

Appendix A

County Level Data

County	Number of Women of Childbearing Age 2003	Women of Childbearing Age as % of Population 2003	Number of Births 2003	Birth Rate per 1,000 Population 2003	% Prenatal Care First Trimester 2003	% Inadequate or No Prenatal Care 2003	% Preterm Births 1999-2003
Albany	8,173	25.6%	395	12.4	90.1%	7.3%	12.2%
Big Horn	1,925	17.2%	127	11.3	89.0%	3.9%	10.2%
Campbell	8,157	22.5%	558	15.4	86.7%	11.8%	13.4%
Carbon	2,800	18.3%	186	12.2	88.7%	10.8%	16.1%
Converse	2,450	19.9%	145	11.8	89.7%	9.0%	12.4%
Crook	1,115	18.8%	72	12.1	80.6%	11.1%	20.8%
Fremont	6,937	19.3%	516	14.4	77.9%	15.9%	14.4%
Goshen	2,191	17.9%	152	12.4	77.6%	15.1%	10.5%
Hot Springs	733	15.7%	30	6.4	83.3%	6.7%	13.3%
Johnson	1,299	17.2%	61	8.1	95.1%	4.9%	21.3%
Laramie	17,286	20.6%	1,214	14.4	85.6%	6.9%	10.4%
Lincoln	2,982	19.6%	217	14.3	84.3%	6.5%	11.1%
Natrona	14,008	20.5%	967	14.2	90.4%	10.4%	9.4%
Niobrara	374	16.7%	20	8.9	75.0%	20.0%	15.0%
Park	5,151	19.6%	241	9.2	86.3%	7.9%	10.8%
Platte	1,584	18.4%	97	11.2	85.6%	10.3%	14.4%
Sheridan	5,193	19.2%	341	12.6	89.7%	5.9%	10.3%
Sublette	1,181	18.5%	70	11.0	81.4%	8.6%	12.9%
Sweetwater	7,845	21.2%	574	12.6	78.4%	13.4%	12.9%
Teton	4,005	21.5%	244	11.0	87.3%	12.3%	12.3%
Uinta	4,165	21.1%	322	15.5	87.3%	7.5%	15.5%
Washakie	1,371	17.4%	81	13.1	86.4%	6.2%	11.1%
Weston	1,225	18.4%	70	16.3	82.9%	12.9%	17.1%
Wyoming Total	**102,150**	**20.4%**	**6,700**	**13.4**	**85.8%**	**9.8%**	**12.1%**

Source: Wyoming Department of Health, Vital Records

County	Teen Birth Rate per 1,000 Females Ages 15-19 1999-203	# of Infant Deaths 1999-2003	Infant Mortality Rate per 1,000 Live Births 1999-2003	% of Women Smoking Tobacco in Pregnancy 1999-2003	% of Births Born Low Birth Weight (<2,500 grams) 1999-2003	% Very Low Birth Weight Births (<1,500 grams) 1999-2003	% of Births to Single Mothers 1999-2003
Albany	18.0	8	4.3	8.8%	8.7%	1.0%	16.8%
Big Horn	45.6	<5	*	15.5%	6.3%	1.1%	17.1%
Campbell	43.3	11	4.3	26.7%	7.8%	1.0%	20.0%
Carbon	43.2	7	8.0	21.6%	8.9%	1.1%	21.3%
Converse	35.8	6	8.2	24.0%	7.0%	1.6%	21.7%
Crook	36.8	0	0.0	20.6%	6.0%	2.0%	24.1%
Fremont	55.5	23	9.4	24.1%	9.4%	1.2%	24.6%
Goshen	39.5	<5	*	20.2%	5.6%	0.9%	24.8%
Hot Springs	29.4	<5	*	22.9%	8.3%	0.5%	25.9%
Johnson	22.9	<5	*	21.1%	9.7%	1.0%	25.9%
Laramie	47.3	34	5.9	16.1%	9.7%	1.2%	26.6%
Lincoln	27.7	6	6.1	14.3%	6.8%	0.9%	27.1%
Natrona	50.0	23	5.1	26.5%	7.4%	0.8%	28.9%
Niobrara	29.1	0	0.0	26.5%	3.1%	0.0%	29.2%
Park	24.2	7	5.5	17.8%	8.8%	0.9%	29.2%
Platte	46.8	<5	*	25.9%	7.6%	1.1%	29.4%
Sheridan	30.6	7	4.8	23.5%	6.9%	1.1%	30.0%
Sublette	29.9	<5	*	17.7%	11.3%	1.8%	30.4%
Sweetwater	46.8	29	10.5	29.1%	8.8%	1.4%	31.7%
Teton	35.4	5	4.8	5.2%	8.3%	0.7%	31.8%
Uinta	48.9	15	9.8	23.4%	11.8%	1.2%	32.7%
Washakie	33.6	<5	*	17.5%	6.6%	0.2%	37.6%
Weston	31.7	<5	*	26.8%	9.5%	0.9%	46.3%
Wyoming Total	**40.7**	**202**	**6.4**	**20.9%**	**8.5%**	**1.1%**	**30.1%**

***** Numbers are too small to report

Source: Wyoming Department of Health, Vital Records

Wyoming Minority Population Estimates for 2003 by County

	Non-Hispanic						Hispanic/Latino	Total Minority	Total
	White	African American	Native American	Asian	Native Hawaiian/ PI	Two or More Races	All Races	Population	Population
Albany	27,728	387	280	612	18	450	2,412	4,159	31,887
Big Horn	10,265	10	75	30	7	57	755	934	11,199
Campbell	33,719	59	320	150	54	374	1,564	2,521	36,240
Carbon	12,615	158	172	126	0	94	2,137	2,687	15,302
Converse	11,363	18	98	39	0	120	692	967	12,330
Crook	5,784	3	56	7	0	18	60	144	5,928
Fremont	26,645	86	6,915	110	4	490	1,664	9,269	35,914
Goshen	10,911	26	88	27	16	33	1,118	1,308	12,219
Hot Springs	4,424	19	71	17	0	25	109	241	4,665
Johnson	7,253	7	52	8	0	63	160	290	7,543
Laramie	69,020	2,344	599	809	104	1,469	9,738	15,063	84,083
Lincoln	14,562	24	65	55	8	129	365	646	15,208
Natrona	62,460	575	674	305	23	809	3,365	5,751	68,211
Niobrara	2,175	4	11	2	0	10	35	62	2,237
Park	24,912	25	102	114	5	169	957	1,372	26,284
Platte	8,056	4	38	17	0	36	477	572	8,628
Sheridan	25,600	70	360	111	31	251	688	1,511	27,111
Sublette	6,132	15	39	16	1	28	137	236	6,368
Sweetwater	31,999	306	315	290	21	400	3,687	5,019	37,018
Teton	16,559	38	83	148	1	130	1,666	2,066	18,625
Uinta	18,077	25	192	69	7	186	1,144	1,623	19,700
Washakie	6,743	10	45	56	0	56	973	1,140	7,883
Weston	6,343	10	84	15	0	58	149	316	6,659
Wyoming	**443,345**	**4,223**	**10,734**	**3,133**	**300**	**5,455**	**34,052**	**57,897**	**501,242**

Source: U.S. Census Bureaur

Appendix B

Results of Stakeholder Surveys

MCH Stakeholder Survey Responses

Respondents:

	Percent
Health care provider	41.4%
School personnel	19.9%
State/local government employee	10.8%
Parent/Grandparent	8.4%
Community based organization employee	5.3%
Health educator	2.2%
Consumer	2.1%
Business professional	1.8%
Person with special health needs	1.6%
Child Care worker	1.5%
Faith community representative	0.3%
Youth	0.1%
Other	5.5%

Top 15 Responses – Maternal, Infant & Early Childhood

Rank		n
1	Health insurance	467
2	Teen pregnancies/Births to teens	339
3	Early care and education	303
4	Poverty and financial support	289
5	Smoking during pregnancy	284
6	Births to single mothers	283
7	Education for parents	274
8	Social/emotional health of children to age 8	267
9	Alcohol use during pregnancy	263
10	Immunizations	251
11	Child care	246
12	Drug use during pregnancy	243
13	Access to obstetricians	240
14	Family planning	236
15	Family violence	225

Top 15 Responses – Child & Adolescent Health

Rank		n
1	Drug use and abuse	442
2	Adolescent cigarette use	372
3	Access to mental health treatment	357
4	Health insurance	354
5	Teen pregnancy/Births to teens	351
6	Access to regular health care provider	318
7	Depression	313
8	Obesity	310
9	Access to drug treatment facilities	271
10	Social/emotional development	268
11	Youth suicide	262
12	Family planning	255
13	Nutrition	250
14	Motor vehicle crashes	238
15	Adolescent smokeless tobacco use	219

Top 15 Responses – Children with Special Health Care Needs

Rank		n
1	Health insurance	524
2	Access to early intervention services	474
3	Support system for families	440
4	Coordination between agencies	434
5	Access to financial assistance	423
6	Access to specialty care	362
7	Respite care	328
8	Access to primary care	314
9	Family friendly system	290
10	Improved sharing of treatment plans among providers	290
11	Child care	265
12	Oral/Dental health	257
13	Access to mental health services	250
14	Access to screening services	249
15	Vocational planning/job training	214

Top 15 Responses – Women of Reproductive Age

Rank		n
1	Health insurance	500
2	Access to preventive health services	473
3	Access to obstetrical care	440
4	Family Planning	435
5	Cigarette use	428
6	Substance use	418
7	Depression	416
8	Access to mental health services	385
9	Obesity	367
10	Family violence	362
11	Alcohol use	333
12	Sexually Transmitted Diseases	296
13	Breast / cervical cancer	295
14	Oral / Dental health	210
15	Access to specialty care	187

Appendix C

Focus Group Report

AN ASSESSMENT OF MATERNAL, CHILD, AND WOMEN'S HEALTH NEEDS

Wyoming Statewide Focus Group Health Needs Assessment

Wyoming Department of Health
Community and Health Division
Maternal and Child Health Section

Report prepared by:
The Center for Rural Health Research and Education
University of Wyoming
Rex E. Gantenbein, Ph.D., Director

February 11, 2005

Focus groups, in conjunction with a health needs assessment, were conducted by the University of Wyoming Center for Rural Health Research and Education for the Wyoming Department of Health, Community and Health Division, Maternal and Child Health Section (MCH). Focus group discussions at selected regional sites were initiated with a discussion of the MCH's Top Ten lists of health priorities statewide, which were based on a recent survey the Division conducted. Consumer and provider groups examined three lists of Top Ten issues: Maternal, Infant and Early Childhood Health (Prenatal to Age 8), Children with Special Health Care Needs, and Adolescent and Child Health. Women's groups examined two lists of priorities: Women of Reproductive Age and Women Beyond Reproductive Age. The Top Ten lists of health priorities were utilized to generate discussion of the issues cited among the participants in the focus groups.

Project Purpose, Objective, and Aim

The purpose of the overall needs assessment study was to use a combination of survey and focus group research to identify the most pressing community-derived health care concerns to guide the Maternal and Child Health Section (MCH) in developing population-focused priorities for the next five years. In the first stage of the study, MCH conducted a statewide *Health Needs Assessment Survey* among Wyoming health care providers and consumers to identify health care priorities for mothers and children, adolescents, children with special needs, and women of and not of childbearing age. From the survey results, priority lists were prepared of perceived needs for each population under consideration (Table 1). The *objective* of the focus group interviews

that followed was to explore community perceptions of the thematically grouped health needs priorities identified through the survey.

Table 1: Maternal and Child Health Needs: Top Ten Issues

Maternal, Infant and Early Childhood Health (Prenatal - Age 8)

Health insurance
Teen pregnancies/Births to teens
Early care and education
Poverty and financial support
Smoking during pregnancy
Births to single mothers
Education for parents
Social/emotional health of children to age 8
Alcohol use during pregnancy
Immunizations

Children with Special Health Care Needs

Health insurance
Access to early intervention services
Support system for families
Coordination between agencies
Access to financial assistance
Access to specialty care
Respite care
Access to primary care
Family friendly system
Improved sharing of treatment plans among providers

Adolescent and Child Health

Drug use and abuse
Adolescent cigarette use
Access to mental health treatment
Health insurance
Teen pregnancy/Births to teens
Access to regular health care provider
Depression
Obesity
Access to drug treatment facilities
Social/emotional development

Women of Reproductive Age

Health insurance
Access to preventive health services
Access to obstetrical care
Family Planning
Cigarette use
Substance use
Depression
Access to mental health services
Obesity
Family violence

Women Beyond Reproductive Age

Access to preventive health services
Health insurance
Menopause
Depression
Osteoporosis
Obesity
Breast / cervical cancer
Cardiovascular disease
Access to mental health services
Cancer

(MCH Statewide Health Needs Assessment)

The *aim* of the focus group research was to conduct needs assessment interviews in the various regions of the state, the information from which would assist MCH in developing and implementing appropriate and community-targeted programs to support maternal/child, adolescent, and women's health in rural communities.

Methods

Design

A qualitative exploratory design utilizing focus group methodology was employed to obtain an understanding of identified priorities and a description of perceived health needs from representative Wyoming communities. Focus groups were conducted at eight distributed regional centers and included both provider and consumer groups. Trained facilitators provided open-ended questions to elicit participant responses. Discussions were recorded and later transcribed for analysis. Group participants were asked to review the state's health needs assessment survey and to identify the issues that were of greatest concern.

Data Collection

Focus Group Procedures: A total of 15 focus groups were conducted in 8 distributed regional communities of Wyoming in order to gather community-specific information about health care needs. Focus group size ranged from 4-11 participants, with the average group consisting of 6-7 participants. The groups were held in community sites readily accessible to participants. No monetary compensation was provided. University of Wyoming IRB approval was obtained prior to the initiation of data collection. Trained facilitators conducted the group interviews, and each group began with members signing a consent to participate and completing a brief demographic

survey. A general explanation of the purpose of the study was provided, and participants were allowed to ask clarifying questions.

Focus groups lasted approximately two hours. A semi-structured interview process used broad opening questions to elicit participant descriptions of their perceptions and opinions related to the health care needs and priorities that had been established through the needs assessment survey. The group interview began with facilitators initiating a discussion of the top 10 statewide heath needs priorities identified for particular groups from the *Health Needs Assessment Survey*. Group discussion was then focused toward identification of the health needs priorities for the particular community represented.

Sampling: The target population for this study was adults from both provider and consumer groups from selected Wyoming regional areas. Eligibility criteria for inclusion in the study were those who volunteered to participate and who identified with one of the following group categories: 1) provider; 2) maternal child, adolescent, and children with special needs; and 3) women beyond child-bearing age. Participants for this study were obtained through a convenience network sampling technique, whereby providers in each community contacted consumers to invite participation. The total sample for this study was 99 adult residents of Wyoming.

(See Table 2 for a description of participant numbers by location and group identification).

Table 2: Participants by location and group identification

Communities	Focus Groups	Number of Participants
Arapaho	One mixed group of all	N= 7 (all providers)
Casper	Providers Women/Maternal child	N= 9 N= 5 (P=3, C=2)
Ethete	One mixed group of all	N= 11 (P=10)
Gillette	Providers Maternal Child Women	N= 5 N= 4 N=4 (P=4)
Laramie	Providers Maternal Child Women	N= 8 N= 7 (P=3, C=4) N= 4 (P=4)
Rock Springs	Providers	N= 10
Thermopolis	Providers Maternal Child Women	N= 7 N= 5 (P=3, C=2) N= 6 (P=6)
Ft. Washakie	One mixed group of all	N= 7 (P=7)
Total : 8	15 Focus groups	N= 99 Provider = 86 : 86.87% Consumer= 13 : 13.13%

N = number
P = provider
C = consumer

Data: The data for this study included audio-recorded focus group interviews, verbatim transcriptions of the interviews, and demographic information. Interviews were conducted in a location arranged through collaboration between local participating agencies and MCH.

Limitations

Group structure may have affected some groups' ability to focus at length on the question of priorities. Each group was considering more than one list; and most, if not all, groups were composed of both providers and consumers. These facts may have made it more difficult for them to stay focused on a specific list and achieve consensus on rankings. The groups, other than those on the Reservation, were not inclined to discuss the Top Ten lists as such, although the lists did provide the topics for most of the lengthy conversations during the meetings, and the amount of time spent on specific listed topics across groups undoubtedly reflects their level of importance to the communities involved.

The lack of representation of consumers in the focus groups is another limitation of the study and may restrict the ability to apply the findings to the general population that were the focus of the study. Providers made up 86.87% of the group participants, with consumers representing 13.13%. Additionally, all consumer groups that were conducted included provider participants, which may have impacted the information each might share in the presence of the other.

Data Analysis

The data set is quite large and consists of approximately 600 pages of transcribed focus group data that require a fairly complex process for analysis. Qualitative analysis began with a review of the transcribed data. Following this initial review, the transcribed

interviews were transferred into NVivo, a computer assisted qualitative data analysis software program, to facilitate organization of coding and reporting. Coding categories were developed from an integration of the specific health needs priorities established from the MCH statewide needs assessment (Table 3), and the transcribed data were formally coded using these categories. First level analysis involved categorizing the data and assigning codes to segments of focus group transcripts that were consistent with the statewide health needs priority list. Several trained coders reviewed each transcript and categorized the data according to the established coding scheme and all transcripts were coded for discussion segments that were consistent with the coding categories.

Findings

Computer assisted qualitative data management software, such as NVivo, supports the reorganization of transcript data into coding scheme documents that combine all data according to designated codes. Profiles and reports can then be generated to provide information related to the frequency and quantity of discussion attributed to the code. Profiles are useful for rapid viewing of the range and variation of the data and for assessment of the representativeness of a particular code in comparison to other codes within the data set. Profiles of each code categorization were created to support a general overview and comparison of the priorities.

A profile of each of the Top Ten health priorities was generated, which integrated the combined group data within a particular coded categorization. Each profile indicates the following descriptive data: 1) characters coded; 2) paragraphs coded; 3) passages, or code frequencies; and 4) number of groups to address the topic.

Table 3: Coding Categories for Health Issue Priorities

Access to drug treatment (general)
Access to in-patient drug treatment facility
Access to early intervention (general)
Access to inpatient early intervention service
Access to financial assistance
Access to mental health service
Access to obstetrical care
Access to preventive health services
Access to primary care
Access to regular health-care provider
Access to specialty care
Adolescent tobacco use
Birth to single mothers
Breast-cervical cancer
Cancer
Cardiovascular disease
Child welfare issues
Cigarette use
Coordination between agencies
Dental health
Depression
Drug use during pregnancy
Early care and education
Education for parents
Family friendly system
Family planning Family violence
General access issues
Health insurance
Immunization
Menopause
Mental health
Obesity
Osteoporosis
Poverty and financial support
Respite care
Sharing of plans among providers
Social and emotional development
Substance abuse
Substance use
Support systems for families
Teen pregnancy & birth to teens
Women's health support needs

The character code provides a count of the text characters (letters and punctuation), which gives an indication of the amount of discussion for the particular code and is referred to as the "thickness" of the code. The paragraph code provides an indication of complete paragraph statements that focus entirely on a specific coding category and where the full paragraph is coded. Passage coding represents the identification of a specific reference within a broader (paragraph) text. Passage codes may occur within a much broader discussion, but represent a segment of the paragraph that makes reference to a specific coding category. Used in combination, these types of coding information allow for a comparison of coding strength and support the identification of a code hierarchy.

Profile Indicator	**Information**
Characters Coded	Provides a count of the text characters (letters and punctuation) which provides an indication of the amount of discussion for the particular code and is referred to as the "thickness" of the code.
Paragraphs Coded	Provides an indication of complete paragraph statements that focus entirely on the category and the full paragraph is coded.
Passages Coded	Represents the identification of a specific reference within a broader (paragraph) text. Passage codes may occur within a much broader discussion, but represent a segment of the paragraph that makes reference to a specific coding category.

An analysis of the profiles generated from all coding categories provided data necessary to determine the health issue priorities that had been expressed by the participants of the study. The top ten health issue priorities identified through the analysis of data from the transcripts and coding profiles are shown in Table 4.

Table 4: Top Ten Health Issues Identified within Total Groups Analysis

Priority	Health Issue	Characters coded	Paragraphs coded	Passages	Groups to Address Issue
1	**Health insurance**	41171	408	132	15
2	**Coordination between agencies**	25966	220	70	14
3	**Access to health care**				15
3-A	*Access to mental health services*	19595	173	68	12
3-B	*General access issues*	16214	231	68	9
3-C	*Access to specialty care*	17848	220	63	8
4	**Education for parents**	22825	279	63	10
5	**Substance use and abuse**	20584	286	97	15
	Substance use	10113	151	55	11
	Substance abuse	10471	135	42	8
6	**Social and emotional development**	16579	205	48	10
7	**Dental health**	11508	198	55	10
8	**Women's health support needs**	16625	148	39	9
9	**Obesity**	14560	146	41	8
10	**Child welfare issues**	13549	69	41	8

The profile report shows the relative strength and weight of each category and allows for a general comparison of all ten priorities that were established as being of greatest significance to the combined participants of the study.

Priority #1: Health Care Insurance

As the MCH survey priorities would indicate, access to health insurance was a major concern for groups across the state. The consensus in all locations was that health insurance is a very important issue, and the combined group data places it as a first priority. Most groups spent considerable time documenting the effects of no or limited access to insurance on health outcomes in their communities. One participant in Thermopolis said simply, "Health insurance – that's the main issue, it's a huge issue." Lack of insurance was linked by many of the participants to other issues for lower income people and families. Not all people without insurance are living on lower incomes, however. A related concern expressed by several groups was that some people who have insurance cannot afford to meet the deductible and thus cannot access health care, as is the case in Gillette as described by one participant there:

> A lot of our health insurance in our community now is essentially catastrophic because of the deductible level so that they are sometimes refused care because they can't meet the deductible because they have to have that cash up front with some of our physicians.

Many Wyomingites work in small businesses or are self-employed and do not have access to group insurance. As one person in a Thermopolis group observed, "There is no group insurance for ranchers." A related problem is that many employers limit benefits to control their costs, which makes access to health care difficult for family members. Affordability of insurance was a concern in other groups as well, particularly for families

with special needs or the elderly.

Priority #2: Agency Coordination Concerns and Issues

A perceived lack of coordination among state agencies was reported by a significant number of participant groups, and these concerns tended to focus on collective miscommunication and misunderstanding of roles among the state's public health providers and other support agencies. Additionally, the difficulty of negotiating through the bureaucratic system of state agencies was identified as a significant issue perceived as impeding individuals from receiving needed services. The general concerns related to state agency coordination addressed the following primary issues:

1) Difficulties related to the complexity of rules and regulations,

2) Perceived lack of respect from providers toward consumers,

3) Need for better client advocacy and case management,

4) Need for more effective interagency networking and cooperation, and

5) Need for better treatment planning and interagency communication.

Additionally, complicated rules and regulations were described as a deterrent to the process of both providing and obtaining health care. The health care system was described as difficult to understand and manage. A number of participant groups addressed particular difficulties associated with the rules and regulations that occur when linking health care services to the school system. One Arapahoe participant identified the variance between school districts regarding the services provided to children: "I don't know if the Health Department can necessarily do anything about this, but we need to address issues with kids who can't get access to care because they're not in the right school district, which has come up at some other groups too."

A number of participant groups expressed concerns that agency coordination and networking impact the quality and continuity of care as a result of poor inter-agency communication. One Casper participant offered a reflection on the impact of ineffective agency coordination, stating: "[It] does affect the health of individuals and the community as well. We want to make sure that all of our agencies are as strong as they possibly can be, to support one another, and to support the children and the families."

A number of participant groups suggested a centralized case management structure could be efficacious in coordinating the sometimes complex array of available client services. A Thermopolis woman commented: "I could see how a good case manager that would take on…or you would have one central location to call that could spread that out to all the different places should be very beneficial." A Laramie participant proposed a central registry system to facilitate the coordination of services to children with special needs. A Casper participant identified the value of a case management approach to assist the client in navigating the system of health care agencies and providers. A Washakie woman expanded further on the need for more centralized case management by pointing out how foreign and unfamiliar the system can seem to an outsider trying to seek services:

> You don't know where to go because you aren't in the system; you haven't been a part of it. And unless you have somebody who is part of the system that can then take you by the hand and lead you through those steps, you don't get the help.

Another Laramie participant further supported the idea of a centralized case management/advocacy system by suggesting a central office/location that would manage client's access to care and assist the client in locating services.

Priority #3: Access to Health Care Concerns and Issues

A significant number of participant groups raised concerns about the effect of poor access to health care on rural family health. They described access to care as a complex issue that involved a number of specific and contributing problems, which include:

1) Rising cost of health insurance,

2) Limited access to specialty and rehabilitative care,

3) Unavailability of transportation,

4) Dearth of services such as home health care after acute episodes, and

5) Unavailability of work release time.

Given the geographic distribution of the population in Wyoming, there are numerous problems identified with access to health care that are related to travel. A Washakie participant summed it up by saying that many people in her area "have to travel two hours, three hours to go and get provided for." A provider in Thermopolis stated the problem as "we have clients that we may have a doctor for them to go to, but they can't get there." Reasons suggested for these problems with access include lack of transportation, distances that must be traveled, and the costs of travel. Participants in several groups suggested that a state-wide initiative to provide mobile care to remote and underserved communities could have a significant impact on access to care. A Thermopolis woman addressed the availability of existing mobile health service systems, stating: "My daughter lives in Texas and they have mobile units for immunization clinics, dental care, and health screening clinics that come into places that don't have services. I

don't see why we [Wyoming] couldn't do something like that. It seems like it would be very cost effective."

Specialty Care: In addition to the discussions on access to primary care, many of the groups brought up the subject of specialty care, where travel is again a problem. As a participant from Ethete put it, "We have to go like to Denver or Salt Lake to see the specialist and that's a long way." While a number of areas of specialty care were of concern to the participants, groups devoted particular attention to the following service areas: mental health care, substance abuse treatment, family planning, parenting education, and respite care for families of children with special needs.

Mental Health: Access to mental health care was identified as a priority issue within the priority of access to health care in general. Some of the primary concerns expressed included:

1) Lack of mental health providers in small communities;

2) Heavy client loads at the mental health center delaying access;

3) Lack of inpatient treatment facilities;

4) Distance from treatment; and

5) Lack of mental health services for children.

One of the Casper groups discussed the stigma associated with seeking mental health care, with a focus on children with emotional disorders. One person said, "I feel like for medical disorders, it's easier to get support for those… [but with] mental health issues, you don't know where to go, you don't want to say, 'My child has a mental problem.' Another participant stated, "The parents are reluctant to come forward with mental health issues because society looks at them like, 'What did you do?'" Mental health care for

children was an issue of considerable discussion in many of the other groups as well. Mental health care was, as one said, “a big problem. And I think the big problem that I see, too, is not only do we not have enough for adolescents and adults, we don’t have enough for children.”

Participants in several groups described their problems with access to mental health care and identified particular issues that women face in getting mental health care. One provider said, “… it’s like folks get into a cycle. I work with a lot of women in family violence and it’s a cycle where they’re very depressed because of the situation they’re in, they can’t access good services and so they continue to be depressed.” A number of groups addressed the concern that particularly women are hesitant, in small rural communities to use mental health facilities. One participant commented, “It just seems that it’s not very easy to get into mental health and for a female to admit that she needs help, you know, because we’re kind of trained to be the keeper of everyone, that’s when we realize that we need to go access health, mental health for ourselves. And then we’re put on hold for three weeks.”

A Laramie provider noted, “A pervasive problem with adolescent health is not having drug treatment centers in state for people and mental health centers in state. They’re being sent away and being brought back and people at home are not ready to deal with them.” One Casper participant did recognize the role of the state in developing substance abuse and mental health programs that have been based on previous needs assessments.

Priority #4: Education for Parents

Groups saw a significant need in the state for parent education programs, especially for young parents and those who face complex challenges, such as special needs children, low income, and single parent families. Participants identified educational needs in the following categories:

1) Immunization,

2) Parenting Skills, and

3) Child safety

A number of participants expressed concern related to the inability of some parents to comprehend the importance of immunization. One Casper woman addressed the fact that young parents have no first-hand knowledge of the impact of epidemic diseases:

> They've never lived through [an epidemic]. They just don't see it as a threat. So, basically they are relying on herd immunity. You know, everyone else is immunized, so my kid's not going to get it.

It was suggested that information on the seriousness and impact of epidemic diseases may help parents better understand the risks they are taking by not immunizing their children. A Thermopolis woman suggested that "the use of video might have an impact, something where they could see the seriousness, the consequences. I would think that there are some sorts of video or DVD programs available through public health."

Participants acknowledged the significant challenges of parenting and expressed the concern that many parents are "clueless" about how to parent. The following parent education needs were identified: 1) general parenting skills, 2) maintaining discipline properly, 3) understanding child development and age appropriate behaviors, 4) management of family stress, and 5) parenting a child with special needs.

But, a number of group participants addressed the difficulty parents often have in seeking parenting assistance due to fear they will be perceived as incompetent and unfit. Participants in one Casper group addressed the fear factor that often surrounded family's interactions with the Department of Family Services (DFS). A Casper provider described the public perception toward DFS and the impact of fear on compliance with treatment recommendations:

> A lot of people have a negative reaction to DFS, and they feel that if they go to a parenting class at DFS that DFS is going to be in their face, and so they won't go. So then you end up putting DFS in their face because they wouldn't go voluntarily. It just creates this vicious cycle.

She went on to suggest that a parenting class once offered through public health offices may have been perceived as less threatening to clients due to the difference in the mission of the two agencies: "Public health had a wonderful parenting [class] that clients seemed to like and not resist attending." A number of issues related to child safety were identified and included concerns about lack of parental knowledge about safe practices, such as the use of car seats and bike helmets, but also addressed the lack of access to "affordable car seats and car safety checks." A member of the Casper provider group suggested that parent education efforts might be better facilitated if "Public Health, or MCH, could act as the entry point. Maybe not offer everything themselves, but somehow develop some linkages to groups that are presently doing it and seeing if the gaps could be filled that way."

Priority #5: Substance Use and Abuse

Substance abuse was a major topic of discussion in all communities except Laramie, and during discussion each of these groups rated it as either the number one or number two issue facing their communities. Participants sometimes weighed the relative

importance of drug, alcohol, and tobacco abuse differently, but all saw substance use and abuse as a major problem, which one Gillette participant described as "tearing at the fabric of their communities". They especially recognized the pervasive cyclical effects of drug and alcohol abuse and phrased their attempts to define and counter those problems in terms of the proverbial chicken-and-egg dilemma. Concerns about substance abuse of all kinds tended to focus on its effects on infants because of use during pregnancy, its effects on child development and safety, its impact on family health and well-being, and the resulting impact and drain to the community.

All three Gillette groups spent the most time collectively in discussion of substance abuse issues; although they repeatedly cited both methamphetamine and alcohol as "huge problems" in the community, the tone and number of comments on methamphetamine underscored the groups' alarm about its prevalence and effects in Gillette. Comments in Thermopolis about substance abuse also echoed those in Gillette in perceiving alcohol abuse to be as much or nearly as much a problem as drug abuse. A participant from one of the Wind River Indian Reservation groups said of alcohol abuse in Fremont County, "It's huge, I mean, I was totally amazed how bad it was!" A member of the women's group said of her clients. "They drink up their paycheck more often than they take anything home, which causes problems for their kids, problems with their health, maybe with their marriages, whatever." A Laramie provider noted, "A pervasive problem with adolescent health is not having drug treatment centers in state for people and mental health centers in state. They're being sent away and being brought back and people at home are not ready to deal with them." Participants did recognize the role of the state in developing substance abuse programs based on previous needs assessments.

Priority #6: Social and Emotional Development

Social and emotional development of both child and adolescent age children was described as a significant issue affecting Wyoming communities. Participants addressed both global issues, such as changes in social culture, as well as community specific issues, such as lack of child care for working parents and unavailability of activities for adolescents. A Casper woman, addressing socio-cultural changes, stated:

> Our society has changed, there is such a lack a respect. And the behaviors I see in young people, I would never have anticipated. But, when we as a society don't stop that kind of behavior and we accept it as peer school culture, then we fail in our responsibilities to our youth.

Another particular issue of concern related to child social and emotional development was affordable, quality child care. The Gillette groups felt this should be a high priority item, particularly infant care. Another Gillette woman pointed out that "Wyoming ranks high in the nation in terms of the number of children being raised by grandparents. I just think this creates all sorts of problems, there's such a disconnect here. And the kids just seem to be caught in the middle, shuffling from place to place." A Laramie provider expressed concern related to the development issues of children with special needs and suggested the need for early intervention, stating, "You've got a lifetime problem if you have a mentally ill child…. They're going to be into drugs. They're going be criminals. They're going to have all kinds of problems. So, you need to fix it in the middle if you can."

A number of communities addressed the need for more supportive activities and programs for pre-adolescent and adolescent age children. A Casper participant expressed concern related to the lack of available structured activities: "In the smaller communities, there's not a lot for kids to do. So, they find stuff to do and it's not necessarily good

stuff." A Thermopolis woman suggested that the most important issue with adolescents is "insuring healthy lifestyles." The number one thing with adolescent and child health is having availability to quality programming; the key word here is quality, not just access to a recreation center."

Finally, a number of members from the Gillette group identified the challenges to the family and to providing adequate social and emotional development that arises due to both parents needing to work and to the prevalence of shift work in their community. They point to the lack of supervision and express the perception that in many of these families "there are children raising children." The participants suggested that their community "definitely needs to work on coordinating more support for these families and developing more structured activities that help to provide supportive opportunities to working families."

Priority # 7: Dental Care

A number of the groups felt that dental care, particularly for children was "really a problem . . . a big problem" (Arapahoe). A Casper participant said, "If you really looked at it globally, dental health by far is one of the, it is the biggest concern we have in this community." Access to dental care for children seems to be a particular problem. Another Casper participant said, "We have a regular dentist for our kids, and it still takes U.S. three to six months to get them a check up." A participant in Washakie also mentioned problems with getting dental care for children there.

Access to quality dental care for those with lower incomes was a concern of one group in Thermopolis. A participant there said, "Dental care right now today is a luxury for most people, people with insurance or that have enough money. It is, it is a luxury

because it's nothing, you know, they can still function without it. But it's one of the saddest things; I really do think the dental. We have to pull teeth all the time through public health, anybody else wouldn't have that tooth pulled." Another person in that group said, "They know their options. There are no false hopes or anything; if they're in that kind of pain and agony we come up with something for them. But there's no prevention. And, dentists have enough people with insurance and money and means that they don't need to work with anybody else." A third member recalled the benefit of a state program for women's dental health sponsored by the Department of Health: "If you were pregnant, you were eligible. It really helped a lot of people. But, that pilot program ended. We ran out of money."

Similar issues were raised in Gillette, where there are no dentists that accept adults that have Medicaid, according to one participant there. Another participant, a provider, said "I spent more time in the last several months with dental health than anything. You can absolutely not get a child into a dentist period, especially if they're Medicaid." Even when there are dental care providers willing to work with lower income families, they become "overwhelmed," as described by a Casper participant who went on to say, "We have two providers, two dental clinics in town, and we have people coming from all the other communities because they will take them."

Priority # 8: Women's Health

Many groups discussed specific health needs that exist for women and suggested the importance of increasing health and treatment programs specifically for women. Participants suggested that women often face a number of life-trauma issues and that

unresolved trauma greatly contributes to the health outcome and functionality of these women. The primary concerns addressed included the following perceived health needs:

1) Substance abuse treatment specifically for women;
2) Innovative programs that support incarcerated women in their transitioning back into the community;
3) Better education and surveillance related to sexually transmitted diseases, such as hepatitis and HIV;
4) Childbirth education classes;
5) Preventative care for women beyond child-bearing age, such as mammograms, pap smears, yearly GYN checks, cardiovascular health, and dental care;
6) Insurance or other third-party payment options.

Participants suggested that women often use alcohol and drugs for very different reasons than do men. A Casper participant offered, “Many women who are abusing substances are often dealing with some pretty heavy issues of abuse and neglect. These women will never make it, unless we are working with both issues. If you don’t deal with the abuse issues, then they have nothing to fall back on when they’re back out there.” Another participant suggested a link between substance use and the increasing incarceration of women in Wyoming, “Most women are in prison because of check fraud, selling property because they’re paying for their drug. And more women are winding up in prison because of this, and it’s ruining the lives of the kids they leave behind.” A number of participants in the Casper group considered that a better alternative to incarcerating these women might be a family-supportive system that provided wide range

treatment that addressed both addiction and trauma issues and included the family in the treatment process.

Another health problem identified by a number of groups included concerns regarding women's lack of understanding about sexually transmitted disease, especially hepatitis B and C and HIV. A Thermopolis woman addressed her perception that women often have misconceived notions regarding transmission, stating, "They just don't get it. They see transmission of HIV and hepatitis as something that happens between men, you know, a gay thing." Another participant added that she though providers often failed to test women because of the same misperceptions. The group members suggested a need for better state-wide education to both consumers and providers might be helpful in reducing the rising numbers of women with hepatitis and HIV.

Finally, a number of groups expressed concerns about the lack of preventive health care offered to women beyond childbearing age. Childbearing women were perceived as having a significant number of resources, but that available resources were lacking for older women. As one Casper provider stated, "Once you're an aging menopausal woman, there's nothing for you. I mean it! Nothing. And that's just when some of the health risks are the greatest. Things like breast cancer, cervical cancer, heart disease. I think we need better services for older women."

Problems for lower-income women were also mentioned in one of the Thermopolis groups. One participant said, "I see mostly women who don't have insurance, who don't have resources for their needs during menopause as far as just good basic health screening and education and that sort of thing. It just kind of slips through the cracks." Another replied, "It's hard to get the women in that very low income or

with minimal resources into anything community that you offer. There's still not a place for them." A third said, "There are many, many jobs for men with absolutely no education. But for women, those opportunities are just not [there]."

Priority # 9: Obesity

Participants addressed obesity as a health issue, especially among the youth populations. A Casper woman proposed, "We [the United States] are a sedentary society. We have the most obese people in the world." Another woman addressed the prevalent consumption of carbohydrates and fat as significantly contributing to the problem of obesity. Weight loss diets were seen as basically ineffective, with one Casper provider offering, "Nine out of ten people will regain every bit of weight they've ever lost on their diet. So, it is very scary because I don't know what the answer is to that." Another participant answered, "Lifestyle changes, that's what is needed, lifestyle changes."

A number of participants expressed frustration with trying to implement changes. A Thermopolis provider addressed the ineffectiveness of programs in reaching people:

> We've tried to hold several community educational programs: nights, days, afternoons, different times, we get no one. People just don't seem to show any interest in coming to these. I have absolutely no solutions but certainly do know that it's a big problem.

Another participant countered that educational programs were ineffective because they are too passive. She added, "I think the real problem is inactivity. We used to be an active society, hunting, working the ranch, but now… we are so sedentary with TV, Nintendo, and computers. I think we need programming that gets people more involved. We need something that motivates them to make life style changes." The group concluded that without a target on life style change, they believe little could be accomplished to reduce obesity.

Priority #10: Child Welfare Issues

A number of factors affecting child welfare were identified, most of which are related to other health priorities already addressed as top health issues for the state. Substance use and abuse were seen as significantly contributing to child welfare problems. Additionally, low-income families were perceived as facing particular challenges related to child welfare due to the amount of time parents needed to work, which renders them less effective in providing a healthy environment for the children. One of the Casper groups cited the significant problems they are observing related to the use (and oftentimes production) of methamphetamine in the home, stating "Some of the places I am called to investigate are the most disgusting places I have ever seen. And it's heartbreaking to see these little kids in the middle of this filth." Another participant pointed out the strength of changes in state law, stating "They did pass a law that if there's meth in the house, then child endangerment is the first crime, and meth the second. It's about time the impact on these kids was recognized."

Another issue seen as being closely related to basic child welfare was the unavailability of childcare. Participants recognized the financial hardship that many rural residents face and that result in parents having to work "double shifts and second jobs, just to make ends meet." A Thermopolis woman addressed the impact these situations have on child welfare:

> There's this trickle-down effect. The kids are being left alone, they're unsupervised, they're uncared for, again, back to nutrition, they're not getting good nutrition, there's nobody home cooking for them. The house is a mess, and the parents are too exhausted to do anything to make it better.

A Rock Springs participant expressed uncertainty about where to draw the line, stating, "the house may not be the cleanest and everything, but is it up to me to say 'you don't

clean up to my standards so I'm taking your children'?" Another participant confirmed, "I know! It's really hard. And I know some of these parents, and they're good people in a bad circumstance, doing the best they can. They're the working poor and they really need help."

Several groups addressed the perception that better availability of childcare for working parents could help to alleviate some of the stresses on these families. A Gillette mother went so far as to suggest, "I'd love to see child centers, where kids could get care whenever the parents are working. There's so much shift work [in this community], it would have to be 24/7." Participants responded to the suggestion, with one proposing, "Childcare needs to be available when people are working. Work is not always available when childcare is. And, it's the kids who are suffering the consequences. Then you think, what happens when they grow up and are parents themselves who never had parenting? We've just got to do something to intervene, to stop the cycle."

Summary

The results of this focus group research demonstrate a significant need for the state public health infrastructure to address the community issues that contribute to complex and cyclical problems. The analysis and presentation of the focus group discussions categorize the health need priorities discussed and focus on those issues about which the most substantive discussion occurred. Participant discussion provides rich descriptions of the complex and cyclical nature of many health care issues in Wyoming, which can give a deeper picture of community perceptions. Descriptions of the more global and interrelated perspectives that community members provide suggest that, to be

effective, community-based interventions must target the interrelated elements of the problems.

A number of statewide initiatives were recognized as having an impact on improving the health and quality of life among Wyoming women and children. Specific programs cited included: Kid Care, SCHIP, Public Health-sponsored Parent Education programs, Dental Care programs for pregnant women, and the state's current response to the drug abuse situation by increasing drug treatment options.

A number of suggestions for future health initiatives were offered by participants. One proposal, in particular, was addressed within discussions of several different health needs concerns: that of the need for more centralized coordination of services. A number of participants acknowledged the existence of numerous potentially beneficial programs, but the lack of centralized coordination of services made the articulation of care ineffective and fragmented. Participants proposed the "value of a case management system of health care agencies and providers" to assist "the client to navigate the sometimes complex system of health agencies and providers." During a discussion related to Parent Education, a participant from Casper went so far as to suggest that community efforts might be better facilitated if "Public Health, or MCH, could act as the entry point. Maybe not offering everything themselves, but somehow develop some linkages that are presently doing it and seeing if the gaps could be filled that way." It seems that a primary theme emerging from the groups is a call for leadership and the belief that MCH could be effective in intervening to improve the coordination and management of services throughout the state.

The impact of distance, isolation, low incomes, and demanding work schedules were seen as impacting access to care. A number of participants suggested that the implementation of mobile health services throughout the state for preventative care, health risk screening, and immunization might be a more efficient and cost effective way to deliver services to persons living in rural and underserved areas of Wyoming. Participants also identified a need to get people more involved in health promotion activities, which was especially addressed during discussions related to obesity, but were implicit in a number of other contexts. A number of groups strongly expressed that programming that is delivered from a passive informational-educational approach seemed to impede participant interest. Participants suggested the need for more pro-active approaches to intervening with issues such as obesity, inactivity, and life style change. Finally, participants addressed the challenge to community family health that results from increasing numbers of women being incarcerated for drug-related charges. A number of participants considered that a better alternative to incarcerating these women might be a family-supportive residential system to provide treatment that would address addictive disease, depression, and trauma issues concurrently, and would include the family in the treatment process.

In conclusion, participants seem very interested in the health of Wyoming communities and express a desire to be part of the solution. However, they pervasively recognize an inadequate integration and coordination of services and seem to be looking to the state for leadership in trying to implement a program and structure that could better organize the opportunities for care that already exist in the state.

Appendix D

2003 MCH Systems Enhancement Survey

Summary of County Responses

Do you feel that your community has an adequate supply of providers to meet the needs of these populations?

	No providers in community		Providers in community, but inadequate		Adequate number of providers	
	N	%	N	%	N	%
Family Planning	0	0.0	9	45.0	11	55.0
Prenatal & Maternity	2	11.1	4	22.2	12	66.7
Infant & child health	0	0.0	9	55.0	11	55.0
Adolescent health	1	5.3	9	47.4	9	47.4
CSHCN	3	15.0	14	70.0	3	15.0
Mental health for MCH	0	0.0	14	73.7	5	26.3
Substance abusing MCH	1	5.0	12	60.0	7	35.0

Breastfeeding support network:

	N	%
No network in community	3	17.6
Network in community, but inadequate	9	52.9
Network adequate	5	29.4

Do residents of the community have to travel out of the community to receive any of the following?

	Have to Travel	
	N	%
Delivery services	6	28.6
Perinatal Services	6	28.6
Family Planning Services	3	13.6
Infant, child & adolescent health services	4	18.2
Primary Preventive	1	4.8
Specialty Care	22	100.0
Mental Health Services	4	23.5
Substance Abuse Treatment	12	60.0

Please rate the adequacy of facilities in the community for referral for mental health and pediatric emergency situations.

	No facilities in community		Facilities in community, but inadequate		Adequate number of facilities	
	N	%	N	%	N	%
Pediatric first responder	2	9.1	11	50.0	9	40.9
Pediatric emergency	1	4.8	11	52.4	9	42.9
Mental health emergencies	2	9.1	16	72.7	4	18.2

Describe the home visiting services available in your community for the MCH populations.

Prenatal

	No services		Inadequate		Adequate		Duplicative	
	N	%	N	%	N	%	N	%
Best Beginnings/ Welcome Home	0	0.0	0	0.0	21	95.5	1	4.5
Nurse-Family Partnership	0	0.0	6	27.3	14	63.6	2	9.1
Children with Special Health Care Needs			2	11.8	15	88.2	0	0.0
Premature Infant	1	5.6	4	22.2	13	72.2	0	0.0
Early Head Start	8	44.4	0	0.0	10	55.6	0	0.0
Head Start	7	46.7	1	6.6	7	46.7	0	0.0
Uplift	14	77.8	2	11.1	2	11.1	0	0.0
Child Development Centers	11	61.1	1	5.6	6	33.3	0	0.0
Children's Trust Fund and/or Family Preservation	13	86.7	0	0.0	2	13.3	0	0.0
Even Start	12	75.0	0	0.0	4	25.0	0	0.0
Hospital Based	16	76.2	0	0.0	5	23.8	0	0.0
Other	2	40.0	0	0.0	2	40.0	1	20.0

Age 0 – 2

	No services		Inadequate		Adequate		Duplicative	
	N	%	N	%	N	%	N	%
Best Beginnings/ Welcome Home	0	0.0	3	15.0	16	80.0	1	5.0
Nurse-Family Partnership	0	0.0	3	14.3	16	76.2	2	9.5
Children with Special Health Care Needs	0	0.0	2	9.1	20	90.9	0	0.0
Premature Infant	1	5.0	4	20.0	15	75.0	0	0.0
Early Head Start	7	33.3	2	9.5	12	57.1	0	0.0
Head Start	7	38.9	2	11.1	9	50.0	0	0.0
Uplift	14	70.0	2	10.0	4	20.0	0	0.0
Child Development Centers	1	4.8	2	9.5	18	85.7	0	0.0
Children's Trust Fund and/or Family Preservation	14	77.8	2	11.1	2	11.1	0	0.0
Even Start	12	57.1	1	4.8	7	33.3	1	4.8
Hospital Based	16	76.2	0	0.0	4	19.0	1	4.8
Other	2	33.3	0	0.0	3	50.0	1	16.7

Age 2 - 5

	No services		Inadequate		Adequate		Duplicative	
	N	%	N	%	N	%	N	%
Best Beginnings/ Welcome Home	4	25.0	3	18.8	9	56.3	0	0.0
Nurse-Family Partnership	6	42.9	0	0.0	8	57.1	0	0.0
Children with Special Health Care Needs	0	0.0	3	14.3	19	90.5	0	0.0
Premature Infant	1	5.3	2	10.5	16	84.2	0	0.0
Early Head Start	7	38.9	2	11.1	9	50.0	0	0.0
Head Start	0	0.0	2	9.5	18	85.7	1	4.8
Uplift	13	65.0	2	10.0	5	25.0	0	0.0
Child Development Centers	1	5.0	2	10.0	17	85.0	0	0.0
Children's Trust Fund and/or Family Preservation	14	77.8	2	11.1	2	11.1	0	0.0
Even Start	12	60.0	1	5.0	7	35.0	0	0.0
Hospital Based	17	77.3	0	0.0	4	18.2	1	4.5
Other	2	33.3	0	0.0	3	50.0	1	16.7

Are there alternative methods through technology (telephone, video, computer, etc.) in your community to provide medical services?

Thirteen (59.1%) of the counties responded that there are some sort of alternative methods through technology to provide medical services; however, many are limited.

For what types of providers (what specialties?)
Providers mentioned are Family Practice (2), Radiologists (2), Obstetricians, Pediatricians, Cardiologists and Endocrinologists.

Are there providers that offer early morning, after school, late evening, or weekend appointments? Are there any school-based preventive health services?

	No variable hours		Some, but inadequate		Adequate variable hours	
	N	%	N	%	N	%
Private providers	3	13.6	15	68.2	4	18.2
Family Planning	5	23.8	13	61.9	3	14.3
Mental Health	3	14.3	13	61.9	5	23.8

How do residents of your community get information on services available to them?

Twenty-one (95.5%) counties have a directory of services available.

Are there specific populations that are not aware of the availability of services?

Seventeen (81.0%) of counties feel that there are specific populations that are not aware of the availability of services.

How would you rate community education efforts on appropriate utilization and access to services?

	No education efforts		Some, but inadequate		Adequate education efforts	
	N	%	N	%	N	%
	1	4.8	14	66.7	6	28.6

Cultural Competency: Please rate and comment on the barriers, gaps and/or strengths in your community regarding the following:

	No available interpreter		Available, but not accessible at certain times		Available, but provided by family/ friend		Available, but provided by bilingual staff		No need for interpreter/ translator	
	N	%	N	%	N	%	N	%	N	%
Translation/ interpretation services for families seeking services	1	5.3	12	63.2	4	21.1	1	5.3	1	5.3

	< 10%		10-20%		21-30%		31-40%		51-50%		> 50%	
	N	%	N	%	N	%	N	%	N	%	N	%
What percentage of the minority population in your community needs translation/ interpretation services?	14	70.0	4	20.0	2	10.0	0	0.0	0	0.0	0	0.0

	Not available		Some, but inadequate		Adequate	
	N	%	N	%	N	%
Training opportunities in the community for providers on the health beliefs and practices of culturally diverse populations	10	50.0	9	45.0	1	5.0
Health promotion/education materials/activities that reflect the language/cultural composition of your community	3	15.0	13	65.0	4	20.0

System Coordination Issues: Please rate and comment on the following:

	Not available		Some, but inadequate		Adequate	
	N	%	N	%	N	%
A. Agreements between public and private providers to promote appropriate referral and follow-up practices	3	14.3	15	71.4	3	14.3
B. Common forms for interagency referrals	8	40.0	8	40.0	4	20.0
C. Routine meetings involving representatives of core community provider agencies and/or programs to promote communication	0	0.0	6	28.6	15	71.4
D. Routine interagency communications:						
• Policy transmittals	8	42.1	9	47.4	2	10.5
• Newsletters	0	0.0	14	77.8	4	22.2
• Meeting minutes	3	15.8	10	52.6	6	31.6
• Calendars	2	10.0	14	70.0	4	20.0
E. Collaborations to develop uniformity in and simplification of public program enrollment forms and processes	8	40.0	11	55.0	1	5.0
F. Automated records for patient referral and tracking	10	52.6	8	42.1	1	5.3
G. Well established and functional linkages with sources of institutional and specialty care	2	9.5	13	61.9	6	28.6
H. Confidentiality arrangements conducive to coordination of services	2	10.5	11	57.9	6	31.6

Please indicate if the following are in place in your community

	Not available		Available	
	N	%	N	%
A. Tracking system for referrals to other programs/services	11	55.0	9	45.0
B. Tracking system for high risk infants and toddlers	10	47.6	11	52.4
C. Tracking system for preventive services such as immunizations	3	14.3	18	85.7
D. Out stationing of DFS eligibility workers	11	52.4	10	47.6
E. Assistance for individuals in finding low or no-cost community services and/or enrolling in public insurance programs	0	0.0	21	100.0
F. One or more pubic entities that provide oversight/ monitoring of the quality of primary health care services for children, adolescents and women's health	9	45.0	11	55.5
G. Mechanisms for feedback from consumers	8	42.1	11	57.9
H. A joint application submitted with at least 2 agencies to deal with a problem of common interest	6	28.6	15	71.4

Appendix D

Definitions

Definitions:

Low Birth Weight: Less than 2,500 grams or 5 lbs., 8 oz.

Very Low Birth Weight: Less than 1,500 grams or 3 lbs., 4 oz.

Late or no prenatal care: Prenatal care began in 3rd trimester or no prenatal care

Preterm Births: Births occurring before 37 weeks gestation

Crude Birth Rate: The number of live births per 1,000 population

Fertility Rate: The number of live births per 1,000 women ages 15-44

Pregnancy Rate: total births plus abortions plus fetal deaths per 1,000 women ages 15-44

Abortion Rate: Number of abortions per 1,000 women ages 15-44

Infant Mortality Rate: Death of an infant under 1 year of age, per 1,000 live births

Neonatal Mortality Rate: Death of an infant from birth to 28 days, per 1,000 live births

Postneonatal Mortality Rate: Death of an infant from 29 days to one year of age, per 1,000 live births

Perinatal Mortality Rate: Neonatal deaths under 7 days plus fetal deaths, per 1,000 live births

Fetal Mortality Rate: Fetal deaths of 20 or more completed weeks of gestation, per 1,000 live births and fetal deaths.

SIDS Death Rate: Number of deaths due to Sudden Infant Death Syndrome per 1,000 live births

95% Confidence Intervals: Statistically computed range around a rate. Represents the range within which the true magnitude of effect lies with 95% certainty. If confidence intervals between two rates overlap, then the differences are not statistically significant.

Appendix E

Health Status Indicators

Health Status Indicators	Wyoming 2000 Indicator	Wyoming 2004 Indicator
#01A Percent of live births weighing less than 2,500 grams.	8.3%	8.5%
#01B Percent of live singleton births weighing less than 2,500 grams.	7.0%	7.1%
#02A Percent of live births weighing less than 1,500 grams.	1.0%	1.1%
#02A Percent of live singleton births weighing less than 1,500 grams.	0.8%	0.9%
#03A Death rate per 100,000 due to unintentional injuries among children aged 14 years and younger.	13.7	15.0
#03B Death rate per 100,000 for unintentional injuries among children aged 14 years and younger due to motor vehicle crashes.	10.5	9.5
#03C Death rate per 100,000 for unintentional injuries due to motor vehicle crashes among youth aged 15 through 24 years.	35.8	38.8
#04A The rate per 100,000 of all nonfatal injuries among children aged 14 years and younger.	294.8	630.6
#04B The rate per 100,000 of all nonfatal injuries due to motor vehicle crashes among children aged 14 years and younger.	29.0	30.7
#04C The rate per 100,000 of all nonfatal injuries due to motor vehicle crashes among youth aged 15 through 24 years.	164.5	144.9
#05A The rate per 1,000 women aged 15 through 19 years with a reported case of chlamydia.	15.1	17.0
#05B The rate per 1,000 women aged 20 through 44 years with a reported case of chlamydia.	4.2	5.5

Appendix F

Acronyms

Acronyms

ACS: Medicaid Fiscal Intermediary

AG: Attorney General

APS: Medicaid Case Management contractor

AWHONN: Association of Women's Health and Obstetrical and Neonatal Nurses

BB: Best Beginnings for Wyoming Babies Program

BSN: Bachelor of Science in Nursing

BSW: Breastfeeding Support in the Workplace project

CBE: Childbirth Education

CCM: Certified Case Manager

CDC: Center for Disease Control

CFH(D): Community and Family Health Division

CFI: Children and Family Initiative

CFOC: Caring for Our Children

CHCC: Certified Child Health Consultants

CISS: Community Integrated Service Systems

CLC: Certified Lactation Consultant

CNLCP: Certified Nurse Life Care Planner

CPHE: Colorado Public Health and Environment Division

CRRN: Certified Rehabilitation Registered Nurse

CSH: Children's Special Health
CSHP: Comprehensive School Health Program

CSHCN: Children with Special Health Care Needs

CYSHCN: Children and Youth with Special Health Care Needs

DDD: Developmental Disabilities Division

DFS: Department of Family Services

DOE: Department of Education

DOT: Wyoming Department of Transportation

(W)ECCS: Wyoming Early Childhood Comprehensive Systems Planning Grant

FAS: Fetal Alcohol Syndrome

FP: Family Planning

FPL: Federal Poverty Level

HA: Healthy Additions coordination tool

HBWW: Healthy Baby is Worth the Weight project

HCP: Health Care Provider

HIPAA: Health Insurance Portability Act

HMG-SK: Help Me Grow- Safe Kids

HMHB: Healthy Mothers Healthy Babies Coalition

HPSA: Health Care Provider Shortage Area

ICR: Inpatient Census Report

IHS: Indian Health Services

LBW: low birth weight

MA: Masters of Arts

MCH: Maternal and Child Health Section

MDCS: Maternal Dental Care Services Program

MHD: Mental Health Division

MHR: Maternal High Risk Program

MOD: March of Dimes

MOMS: Maternal Outcomes Monitoring System

MOU: Memorandum of Understanding

MPH: Masters in Public Health

MSN: Masters of Science in Nursing

MSW: Masters in Social Work

NBIC: Newborn Intensive Care Program

NBW: Normal Birth Weight

NFP: Nurse Family Partnership Program (David Old's model)

NPM: National Performance Measure

NSK: National Safe Kids

OHU: Oral Health Unit

OMH: Office of Minority Health

OWH: Office of Women's Health

PAP: Parenting Advisory Panel

PC: Perinatal Consultant

PHN: Public Health Nursing

PNP: Premature Newborn Program

PNP-C: Pediatric Nurse Practitioner

PRAMS: Pregnancy Risk Assessment Monitoring System

PSU: Perinatal Services Unit

PWP: Medicaid Pregnant Woman Program

RFP: Request for Proposal

RMPHEC: Rocky Mountain Public Health Education Consortium

SAD: Substance Abuse Division

SCHIP: State Children's Health Insurance Program

SHO: State Health Officer

SIDS: Sudden Infant Death Syndrome

SKW: Safe Kids Wyoming

SPM: State Performance Measure

SRRC: Sexual Risk Reduction Coalition

SSDI: State Systems Development Initiative

STD: Sexually Transmitted Disease

TMS: Tandem Mass Spectrometry

TPO: Treatment, Payment, Operations

UPLIFT: mental health support and advocacy

UPTF: Unintended Pregnancy Task Force

UW: University of Wyoming

VLBW: Very Low Birth Weight

WDH: Wyoming Department of Health

WHC: Wyoming Health Council

WHNA: Women's Health Needs Assessment

WHRN: Wyoming Health Resources Network

WIC: Women Infants and Children Program

WIN: Wyoming Information Network

WIND: Wyoming Institute for Disabilities

WINDS-2: Wind River Indian Needs Determination Survey-2

WPCA: Wyoming Primary Care Association

WRHS: Wyoming Reproductive Health Study

WRR: Wind River Reservation

WYDC: Wyoming Youth Development Collaborative

YRBS: Youth Risk Behavior Survey