

MONTANA CLINICAL COMMUNICATION & SURVEILLANCE REPORT



Montana Department of Public Health and Human Services
Chronic Disease Prevention and Health Promotion Program
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TRENDS IN CARDIOVASCULAR DISEASE (CVD) AND CVD RISK FACTORS AMONG MONTANA AMERICAN INDIANS 1999 – 2003.

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NEW LOOK FOR THE SURVEILLANCE REPORT.

The Montana Diabetes Project (MDP) and Cardiovascular Health (CVH) Program have joined forces to begin providing a combined surveillance report. Because diabetes and cardiovascular disease are closely linked, the topics presented in the "Montana Clinical Communication and Surveillance Report" will be pertinent to the objectives of both the MDP and the CVH program. We hope you will find the new format inviting and the information important.

BACKGROUND

Cardiovascular disease (CVD) is one of the major health burdens for American Indians and particularly for the tribes in Montana. Indians aged 45 years and older in Montana reported higher rates of CVD than non-Indians, and Indians with diabetes reported higher rates of CVD than those without diabetes on health surveillance telephone surveys in 1999 and 2001.^{1,2} CVD is the leading cause of death for American Indians. In the U.S., mortality from CVD has decreased over the past decade, and in the general population in Montana, there has also been a similar decrease. However, CVD mortality for Indians in Montana has decreased very little.³ Information about trends in cardiovascular risk factors among American Indians across the U.S. is sparse. Alaska Natives, at low risk for death from coronary heart disease (CHD) in the 1980s, now have a higher prevalence of CVD risk factors than non-Native Alaskans as measured by the Behavior Risk Factor Surveillance Surveys.⁴ Troublingly, the CHD mortality among Alaska Natives now equals that in the non-Native Alaskans. This surveillance report updates previous reports of the prevalence of CVD and risk factors in Montana Indians based on the most current data and describes the trends in self-reported CVD risk factors over a five-year period from 1999-2003.

METHODS

The Montana Department of Public Health and Human Services, in collaboration with the Billings Area Indian Health Service, conducted telephone surveys, adapted from the Behavior Risk Factor Surveillance System (BRFSS), among American Indians living on or near Montana's seven reservations in 1999, 2001 and 2003. Trained interviewers made telephone calls to a random sample of households with three-digit telephone prefixes located on or near the seven reservations in Montana. The number of completed telephone calls for each of the surveys was proportional to the number of American Indian households on each reservation. The 2000 census identified 56,038 American Indian and Alaska Natives living in Montana, the majority of whom lived on the seven reservations (59%).

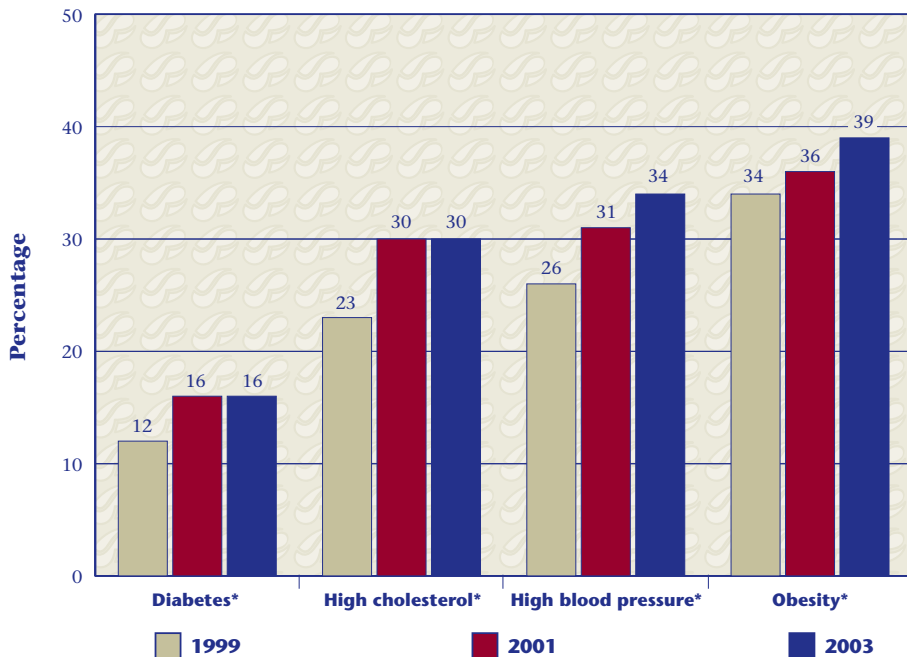
Persons aged 18 years and older who reported being American Indian were eligible to participate in the surveys. One adult from each sampled household was randomly selected to participate. Respondents were asked about CVD and modifiable risk factors for CVD. Respondents who reported a history of acute myocardial infarction or heart attack, angina, coronary artery disease, or stroke were categorized as having CVD. Respondents were asked if a physician had ever told them they had diabetes, high blood pressure, or high cholesterol. Female respondents, who only had been told they had gestational diabetes or high blood pressure during pregnancy were not considered to have diabetes or hypertension, respectively. Respondents who reported that they smoked cigarettes everyday or some days were categorized as current smokers. Self-reported height and weight were used to calculate a body mass index (BMI, kg/m^2), and a value of $\geq 30.0 \text{ kg}/\text{m}^2$ was defined as obese.

Data analyses were completed using SPSS V12.0 software (SPSS Inc., Chicago, IL.) and included 1000 respondents in 1999, 1006 respondents in 2001, and 1000 respondents in 2003. Chi-square tests were used to compare differences in trends of CVD and CVD modifiable risk factors among men and women and younger (18-44 years) and older (≥ 45 years) respondents during the five-year time period. Multiple logistic regression analyses were used to adjust for respondents' age, gender and survey year.

RESULTS

During the three survey years, 1999, 2001, and 2003, the proportion of women respondents ranged from 57% to 59%, and the mean age of respondents increased significantly from 42 years in 1999 to 46 years in 2001 and 2003. During the five-year period, there were significant increases in the proportion of Indians from Montana who reported having diabetes (12% to 16%), high blood pressure (26% to 34%), high cholesterol (23% to 30%) and obesity (34% to 39%) (Figure 1).

Figure 1. The prevalence of CVD-related risk factors (diabetes, high blood pressure, high cholesterol and obesity) among American Indian adults, Montana, 1999, 2001, and 2003.



*P ≤ 0.05 for comparisons between 1999 to 2003.

After adjustment for age and gender, increases in self-reported high blood pressure (AOR 1.29; 95% CI: 1.05-1.58), high cholesterol (AOR 1.31; 95% CI: 1.02-1.68) and obesity (AOR 1.23; 95% CI: 1.02-1.49) remained significant. The prevalence of CVD (10% vs. 11%) and smoking (38% vs. 36%) were unchanged over the five-year time period.

The prevalence of diabetes, high blood pressure and high cholesterol increased significantly among Indian men, as did the

prevalence of high blood pressure among Indian women (Table 1). The rates of self-reported CVD and smoking did not change significantly among either men or women. There was a significant increase in the prevalence of high blood pressure among Indians aged less than 45 years and of high cholesterol in Indians aged ≥45 years during the five-year period (Table 2).

Table 1. Cardiovascular disease and related risk factors among American Indian adults, by sex, Montana, 1999, 2001, and 2003.

	Time Period					
	Men			Women		
	1999 % (n/N)	2001 % (n/N)	2003 % (n/N)	1999 % (n/N)	2001 % (n/N)	2003 % (n/N)
Cardiovascular disease	12 (50/428)	13 (56/418)	15 (60/411)	8 (45/572)	10 (60/588)	9 (50/588)
Diabetes	11 (48/427)	14 (60/417)	16 (65/409)*	13 (74/570)	17 (97/587)	16 (93/589)
High blood pressure	30 (127/428)	32 (135/418)	38 (155/411)*	23 (130/572)	30 (178/587)	31 (180/588)*
High cholesterol	21 (58/272)	31 (81/259)	30 (89/300)*	24 (86/353)	29 (110/386)	30 (131/441)
Smoking	36 (152/427)	39 (162/418)	35 (145/411)	40 (228/568)	43 (249/584)	37 (216/586)
Body mass index (kg/m ²)						
<25.0	22 (90/419)	26 (108/412)	21 (83/404)	30 (159/528)	27 (149/554)	28 (157/556)
25.0 – 29.9	48 (202/419)	43 (176/412)	42 (170/404)	34 (178/528)	34 (190/554)	31 (174/556)
≥30.0	30 (127/419)	31 (128/412)	37 (151/404)	36 (191/528)	39 (215/554)	41 (225/556)

*P ≤ 0.05

Table 2. Cardiovascular disease and related risk factors among American Indian adults, by age, Montana, 1999, 2001, and 2003.

	Time Period					
	Age <45 years			Age ≥45 years		
	1999 % (n/N)	2001 % (n/N)	2003 % (n/N)	1999 % (n/N)	2001 % (n/N)	2003 % (n/N)
Cardiovascular disease	2 (11/598)	2 (12/493)	3 (12/480)	21 (84/401)	20 (104/509)	19 (98/515)
Diabetes	5 (27/598)	6 (28/491)	6 (28/480)	24 (95/398)	25 (128/509)	25 (130/514)
High blood pressure	15 (89/598)	17 (85/493)	20 (94/480)*	42 (168/401)	45 (226/508)	47 (240/515)
High cholesterol	15 (47/308)	21 (53/253)	18 (51/290)	31 (97/317)	36 (138/389)	38 (169/450)*
Smoking	42 (251/596)	45 (221/491)	42 (201/479)	32 (129/398)	38 (190/507)	31 (159/514)
Body mass index (kg/m ²)						
<25.0	31 (176/572)	30 (143/472)	28 (128/465)	20 (73/375)	23 (113/493)	23 (111/494)
25.0 – 29.9	39 (223/572)	36 (169/472)	36 (169/465)	42 (157/375)	40 (197/493)	35 (175/494)
≥30.0	30 (173/572)	34 (160/472)	36 (168/465)	39 (145/375)	37 (183/493)	42 (208/494)

*P ≤ 0.05

DISCUSSION

These data from Montana, like those from Alaska, describe rapidly increasing CVD risk factors. Although the prevalence of CVD did not increase over the five-year time period in Montana, the prevalence of important CVD risk factors did increase. Of concern are the increases in diabetes, hypertension, and high cholesterol. In addition, the increase in obesity from 34% to 39% is very alarming. Both men and women, and younger and older Indians reported increases in obesity. Increasing weight is closely associated with increasing diabetes, hypertension and hyperlipidemia. This pattern may lead to preventable heart disease and stroke in younger people. It is encouraging that smoking rates did not increase—a finding which may reflect success at smoking cessation and prevention efforts in the communities. However, smoking prevalence in Indian communities remains much too high. Montana's Indian communities face major challenges as they expand their efforts from smoking prevention and cessation to encompass broad efforts to control CVD and other important risk factors.

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UPCOMING CONFERENCES FOR HEALTH PROFESSIONALS & PATIENTS/FAMILIES

October 2004 - The annual diabetes conference for health professionals is planned for Friday and Saturday, October 8-9, 2004, in Billings, Montana. Continuing education credits will be provided. Save the date for this exciting meeting! For more information call (406) 444-6677.

Upcoming events for persons living with diabetes and their families:

The American Diabetes Association will be having their annual Diabetes EXPOs for persons living with diabetes and their family members. The title for this years' Diabetes EXPO is "Feeling Better, Looking Better and Great Taste." The first Diabetes EXPO will be on October 23, 2004, from 10:00 a.m. – 4:00 p.m. at the Grand Montana Holiday Inn in Billings, Montana. The second Diabetes EXPO will be on October 30, 2004 from 10:00 a.m. – 4:00 p.m. at the Holiday Inn Parkside in Missoula, Montana. The EXPO is free to the public. Lunch will be provided and there will be a \$5.00 charge per person for lunch. Scholarships available. To register or for more information, visit or call the ADA at 3203 3rd Avenue North, Suite 203, Billings, Montana 59101 or 1/888-342-2383.

WHAT ARE THE MONTANA DIABETES PREVENTION AND CARDIOVASCULAR HEALTH PROGRAMS AND HOW CAN WE BE CONTACTED?

The Montana Diabetes Control and Cardiovascular Health Programs are funded through cooperative agreements with the Centers for Disease Control and Prevention, Division of Diabetes Translation (U32/CCU822743-02), the Division of Adult and Community Health (U50/CCU821287-02) and through the Montana Department of Public Health and Human Services.

The mission of the Diabetes Control and Cardiovascular Health Programs is to reduce the burden of diabetes and cardiovascular disease among Montanans. Our web pages can be accessed at <http://ahcc.msu.montana.edu/diabetes/default.htm> and <http://montanacardiovascular.state.mt.us>.

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