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Health Risk Behaviors, Preventive Care Practices, and Mortality in North Denver, Colorado: Results from the Behavioral Risk Factor Surveillance System and Vital Statistics Data, 2000-2001

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Introduction

The Colorado Behavioral Risk Factor Surveillance System (BRFSS) is an ongoing statewide telephone survey designed to monitor the prevalence of health behaviors and preventive health practices associated with the leading causes of premature death, disability, and disease. The Survey Research Unit at the Colorado Department of Public Health and Environment conducts the BRFSS survey and selects respondents using a random digit dialing sampling technique. While the BRFSS provides reliable statewide estimates, the sample reflects the state population, the majority of which is White/non-Hispanic. Therefore, to better understand the health status, health behaviors, and preventive care practices of racial/ethnic groups^a in Denver, Colorado, a special point-in-time survey was conducted in North Denver^b from August 2000 through September 2001. Because a special focus of this study was to assess prostate cancer knowledge and screening behaviors among men 50 and older, men in this age group were oversampled. The data were weighted to reflect the probability of selection and adjusted for the age and sex distribution of North Denver. In this report, prevalence estimates and mortality rates of North Denver adults ages 18 and older are presented. In addition, some comparisons are made to statewide statistics (for the BRFSS) and remainder-of-the-state parameters (for Vital Statistics).

^a The Health Statistics Section joins the Centers for Disease Control and Prevention in recognizing that race and ethnicity do not represent valid biological or genetic categories but are social constructs with cultural and historical meaning.¹

^b North Denver is defined as the following zip codes: 80204, 80205, 80207, 80211, 80216, 80219, 80220, 80223, 80239, and 80249

Statistics Primer

What is a confidence interval

In this Brief, percent estimates and confidence intervals are presented. Percent estimates are estimates of the true population value (e.g. 30 percent of adults in North Denver are current smokers). However, since estimates are based on a sample and not the entire population, there is some error. Confidence intervals take this error into account and present a range in which the "true value" is likely to fall (e.g. between 25.9 and 34.7 of adults in North Denver are current smokers). Interval width decreases with increasing sample size - large samples produce narrow interval widths and more precise estimates. Wide confidence intervals are associated with less reliable estimates and should be interpreted with caution. A 95 percent confidence interval means that among 100 samples drawn, 95 will contain the true population value. When confidence intervals for two population estimates do not overlap, the difference between the estimates is considered statistically significant; that is, the difference is not due to chance.

Demographic Characteristics

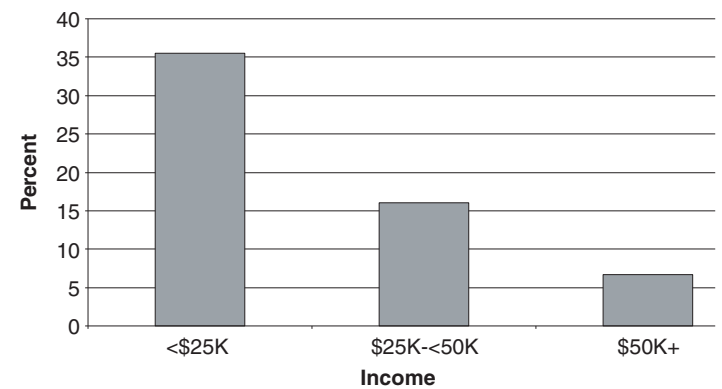
The age and sex distributions are similar for North Denver and Colorado, while the differences by race/ethnicity, income, and education are statistically significant (see Table 1). Compared to Colorado as a whole, the proportion of both Black/non-Hispanics and Hispanics is substantially higher in North Denver. North Denver has a much higher proportion of adults with annual household incomes below \$25,000, and a lower percentage with incomes \$50,000 and above, compared to statewide estimates. The relationship is similar for education – compared to Colorado overall, North Denver has a much higher proportion of adults with less than a high school education, and a much lower proportion who have attended at least one year of college.

Health Status

The self-reported health status of an estimated 21 percent of North Denver adults is fair or poor. The difference compared

to the statewide estimate of 13 percent is statistically significant. The percentage of North Denver adults with fair or poor health status decreases with increasing annual household income, and the prevalence estimate for the lowest income category (less than \$25,000) is statistically significantly different than both the \$25,000 to \$49,999 income category, and the \$50,000 and above income category (see Figure 1).

Figure 1. Percent of adults reporting fair or poor health status, by income group*: North Denver BRFSS, Colorado, 2000-2001



* Difference between prevalence estimates for <\$25K and \$25K-<50K income categories is statistically significant; difference between prevalence estimates for <25K and \$50K+ income categories is statistically significant.

Table 1. Demographic characteristics by area: North Denver and statewide Colorado BRFSS, 2000-2001

	2000 - 2001 North Denver BRFSS				2000 Colorado BRFSS			
	Sample size ^a	Percent estimate	95% confidence interval		Sample size ^a	Percent estimate	95% confidence interval	
			Lower limit	Upper limit			Lower limit	Upper limit
Age group	636				3,058			
18-24		15.1	10.5	19.7		12.0	10.1	13.9
25-34		25.9	21.4	30.4		19.3	17.2	21.4
35-44		21.4	17.4	25.4		23.5	21.4	25.6
45-54		16.4	13.4	19.4		18.8	16.9	20.7
55-64		9.0	6.7	11.3		11.7	10.0	13.4
65+		12.2	9.9	14.5		14.7	12.8	16.6
Sex	636				3,058			
Male		49.4	44.6	54.2		49.0	46.4	51.6
Female		50.6	45.8	55.4		51.0	48.4	53.6
Race/Ethnicity	631				3,041			
White/non-Hispanic [*]		42.3	37.5	47.1		79.5	77.3	81.7
Black/non-Hispanic [*]		11.8	9.2	14.4		2.7	1.8	3.6
Other/non-Hispanic		2.1	0.8	3.4		2.9	2.1	3.7
Hispanic [*]		43.9	38.9	48.9		14.9	12.9	16.9
Income	580				2,801			
<\$25,000 [*]		39.9	34.8	45.0		24.1	21.7	26.5
\$25,000-\$49,999		33.6	28.6	38.6		33.4	30.9	35.9
\$50,000+ [*]		26.5	22.3	30.7		42.6	40.0	45.2
Education	633				3,055			
<HS [*]		25.3	20.9	29.7		9.4	7.8	11.0
HS/GED		29.6	25.2	34.0		24.2	22.0	26.4
Some college or more [*]		45.1	40.3	49.9		66.4	64.0	68.9

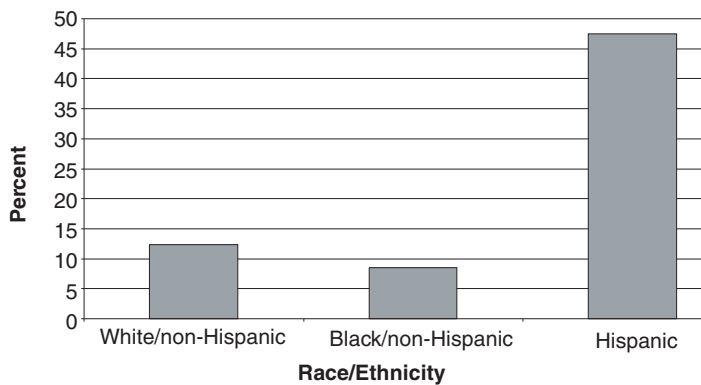
^a changes in sample size reflect non-response for some variables

^{*} indicates significant difference by area

Health Care Coverage

Approximately 27 percent of North Denver adults do not have any kind of health care coverage, compared to about 14 percent statewide. This difference is statistically significant. Within North Denver, health care coverage varies widely by race/ethnicity (see Figure 2). Hispanics, at 48 percent, are significantly more likely than both White/non-Hispanics (12 percent) and Black/non-Hispanics (9 percent) to lack coverage.

Figure 2. Percent of adults reporting being uninsured, by race/ethnicity: North Denver BRFSS, Colorado, 2000-2001



Cardiovascular Disease Risk Factors

BRFSS data can be used to estimate the prevalence of several cardiovascular disease risk factors, including hypertension, diabetes, overweight, diet, and physical activity. An estimated 22 percent of North Denver adults have ever been told by a health professional they have high blood pressure. The estimate is the same for Colorado as a whole.

The proportion of persons ages 18 and older who have ever been told they have diabetes (excluding gestational diabetes), 5 percent, is the same in both areas.

About 57 percent of North Denver adults are overweight. This proportion is significantly higher than the statewide estimate of 48 percent. About 37 percent of adults in North Denver report that they are trying to lose weight. The statewide percentage (36) is similar.

Approximately 24 percent of adults in North Denver eat 5 or more fruits and vegetables a day. The statewide estimate (23 percent) of fruit and vegetable consumption is similar.

Respondents were asked if they participated in any physical activity or exercise in the past month, other than their regular job duties. About 29 percent of North Denver adults did not engage in any leisure time physical activity in the past month, compared to 20 percent for Colorado as a whole. This difference is statistically significant.

Tobacco Use

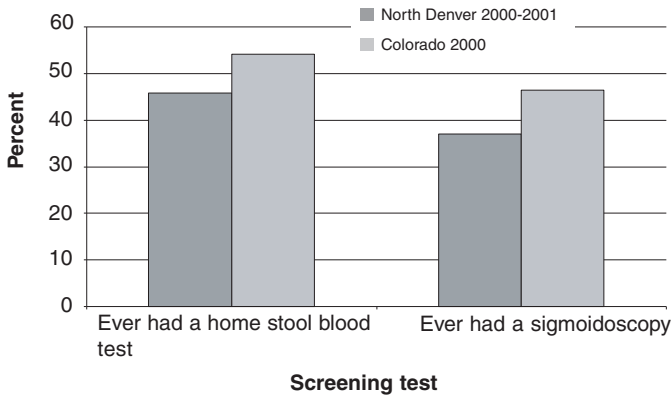
Current smokers are defined as those who have smoked at least 100 cigarettes in their lifetime and who currently smoke cigarettes. Approximately 30 percent of adults in North Denver are current smokers, compared to 20 percent statewide. This difference is statistically significant. Among everyday smokers, there is no significant difference by area in the percent who quit smoking for one day or more in the past year (57 percent in North Denver compared to 53 percent statewide). Respondents were asked if tobacco was used in the home in the past 30 days. The percentage of adults exposed to environmental tobacco smoke in the home is significantly higher in North Denver compared to Colorado as a whole (31 percent compared to 21 percent, respectively).

Cancer Screening and Prevention

Colorectal Cancer Screening

Colorectal cancer is the second leading cause of cancer-related deaths in Colorado.³ Early detection of colorectal cancer through tests such as colonoscopy, or the home stool blood test (FOBT) and sigmoidoscopy can reduce cancer deaths. In North Denver, about 46 percent of those ages 50 and older have ever had a home stool blood test, and about 37 percent have ever had a sigmoidoscopy (see Figure 3). Both of these figures are lower than the statewide estimates, though the differences are not statistically significant.

Figure 3. Percent of adults ages 50 and older reporting having had colorectal cancer screening tests, by area*: North Denver and statewide Colorado BRFSS, 2000-2001

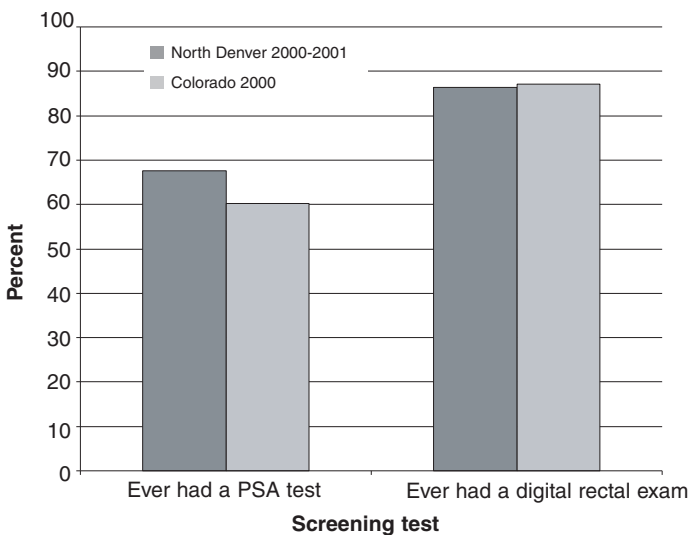


*Differences by area are not statistically significant

Prostate Cancer Screening

In Colorado, prostate cancer is the second leading cause of cancer-related deaths among men.³ The prevalence of prostate cancer screening is similar by area (see Figure 4). An estimated 68 percent of North Denver men ages 50 and older have ever had a prostate-specific antigen (PSA) test, and approximately 86 percent have ever had a digital rectal exam (DRE).

Figure 4. Percent of men ages 50 and older reporting having had prostate cancer screening tests, by area*: North Denver and statewide Colorado BRFSS, 2000-2001



*Differences by area are not statistically significant

Breast Cancer Screening

In Colorado, breast cancer is the second leading cause of cancer-related deaths for women.³ Many of these deaths could be prevented with screening.⁴ About 85 percent of North Denver women ages 18 and older have ever had a clinical breast exam (see Table 2). Approximately 66 percent of North Denver women ages 40 and older have had a mammogram in the past 2 years. This falls short of the Healthy People 2010 goal of 70 percent, and is lower than the statewide estimate of 74 percent, but the difference is not statistically significant. Hispanics in North Denver are substantially less likely than White/non-Hispanics to have had a mammogram in the past 2 years, but the difference is not statistically significant.

Table 2. Percent of women reporting having had breast cancer screening tests, by race/ethnicity and area*: North Denver and statewide Colorado BRFSS, 2000-2001

	Sample size	%	%		
			White/ non-Hispanic	Black/ non-Hispanic	Hispanic
Ever Had a Clinical Breast Exam					
North Denver	337	84.9	86.9	91.8	82.5
Colorado	1,754	88.7	91.2	—	74.8
Mammogram in Past 2 Years, Ages 40 and Older					
North Denver	187	65.9	73.0	—	50.1
Colorado	1,098	74.3	75.0	—	73.9

— unable to estimate due to small number of respondents
*Differences by area are not statistically significant

Skin Cancer Prevention

Protecting oneself from excessive sun exposure can help prevent skin cancer. The target for Healthy People 2010 is for 75 percent of adults ages 18 and older to use at least one measure of sun protection, such as wearing sun protective clothing or using sunscreen with a sun-protection factor (SPF) of 15 or higher. The leading cause of skin cancer deaths is malignant melanoma. For Colorado and the nation, these death rates are two times higher for men compared to women.^{2,3} In North Denver, about 28 percent of adults

Table 3. Percent of adults reporting using sun protection measures, by sex: North Denver BRFSS, Colorado, 2000-2001

	Percent	95% confidence interval	
		Lower limit	Upper limit
Regular^a use of sunscreen*			
Total	28.4	24.2	32.6
Male	21.2	15.4	27.0
Female	35.5	29.6	41.4
Use SPF of 15 or higher			
Total	91.6	88.0	95.2
Male	89.7	83.2	96.2
Female	93.1	89.1	97.1
Regular^a use of shade while outdoors*			
Total	41.4	36.5	46.3
Male	30.0	22.7	37.3
Female	52.4	46.1	58.7
Regular^a use of hat^b for sun protection*			
Total	27.7	23.1	32.3
Male	34.6	27.1	42.1
Female	21.0	15.9	26.1
Regular^a use of clothing^c for sun protection			
Total	17.6	13.6	21.6
Male	18.2	12.0	24.4
Female	17.1	12.1	22.1

^a Always or nearly always

^b Wide-brimmed hat

^c Such as a long-sleeved shirt

* Difference by sex is statistically significant

regularly use sunscreen (see Table 3). This is significantly lower than the statewide estimate of 37 percent. Within North Denver, the proportion regularly using sunscreen is 67 percent higher for women compared to men. Of those who ever use sunscreen, about 92 percent use a sunscreen that has a sun protection factor (SPF) of 15 or more. Over 40 percent of North Denver adults use shade regularly while outdoors, compared to 26 percent statewide. This difference is statisti-

cally significant. In North Denver, women are much more likely than men to regularly use shade while outdoors, but men are substantially more likely than women to regularly use a wide-brimmed hat for sun protection. A similar proportion of men and women use clothing such as a long-sleeved shirt for sun protection.

Mortality

Table 4 presents the number of deaths, crude death rates and rankings of the leading causes of death in North Denver and the remainder of Colorado in 2000. Heart disease and malignant neoplasms are the top two causes of death in both areas. In North Denver, deaths from unintentional injuries, atherosclerosis, and nephritis, nephrotic syndrome, and nephrosis (ranked 3, 7, and 10, respectively) are all significantly higher compared to the remainder of Colorado. The rate of Alzheimer's disease deaths (not shown) is significantly lower in North Denver (11.9 per 100,000 population) compared to the rest of the state (22.8 per 100,000 population), while homicide death rates (not shown) are significantly higher (11.4 per 100,000 population compared to 3.6 per 100,000 population).

Table 4. Deaths, crude death rates, and 95% confidence limits for leading causes by region: North Denver and the remainder of the state, Colorado residents ages 18 and older, 2000

Cause of Death	North Denver					Remainder of Colorado				
	N	Rank	Crude rate	95% confidence interval		N	Rank	Crude rate	95% confidence interval	
				Lower limit	Upper limit				Lower limit	Upper limit
All Causes*	1,920		948.3	905.8	990.8	24,638		821.8	811.6	832.1
Heart Disease	425	1	209.9	189.7	230.1	5,693	1	189.9	184.9	194.8
Malignant Neoplasms	404	2	199.5	179.9	219.2	5,464	2	182.3	177.4	187.1
Unintentional Injuries*	149	3	73.6	61.5	85.7	1,452	5	48.4	45.9	50.9
Chronic Lower Respiratory Diseases	109	4	53.8	43.5	64.2	1,666	4	55.6	52.9	58.3
Cerebrovascular Disease	101	5	49.9	39.9	59.9	1,745	3	58.2	55.5	61.0
Diabetes Mellitus	55	6	27.2	19.7	34.6	570	7	19.0	17.4	20.6
Atherosclerosis*	52	7	25.7	18.5	32.9	423	10	14.1	12.7	15.5
Influenza and Pneumonia	43	8	21.2	14.6	27.8	557	8	18.6	17.0	20.1
Chronic Liver Disease and Cirrhosis	41	9	20.2	13.8	26.7	376	11	12.5	11.3	13.8
Nephritis, Nephrotic Syndrome, Nephrosis*	37	10	18.3	12.1	24.4	313	12	10.4	9.3	11.6

Note: Rates are deaths per 100,000 population and include deaths to Colorado residents ages 18 and older.

*Difference between North Denver and remainder of state is statistically significant.

Summary

Overcoming health disparities by race and ethnicity represents a significant challenge for public health. These health disparities result from a complex range of factors including lack of economic opportunity, lack of educational opportunities, social isolation, discrimination, and lack of access to health care.⁵ Inequities in the social environment can in turn contribute to the adoption of disadvantageous behaviors such as cigarette smoking, physical inactivity, and poor diet.⁵ North Denver, Colorado, has a higher proportion of Black and Hispanic residents than the state of Colorado as a whole, and North Denver residents are more likely to have lower annual household incomes and lower educational levels than all residents of Colorado. Unfortunately, residents of North Denver are correspondingly more likely to have fair or poor health status, to lack health care coverage, to be overweight, and to not engage in leisure time physical activity. Mortality rates for unintentional injury, atherosclerosis, nephritis, nephrotic syndrome, and nephrosis, as well as homicide, are all significantly higher in North Denver compared to the rest of the state. The results presented in this Brief help illuminate some of the needs of this community and can be used to help design programs aimed at eliminating the health disparities evidenced in North Denver.

References

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- 2 U.S. Department of Health and Human Services. *Healthy People 2010: Understanding and Improving Health*. 2nd ed. Washington, DC: U.S. Government Printing Office, November 2000.
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- 4 Centers for Disease Control and Prevention, Department of Health and Human Resources. 2001. "The National Breast and Cervical Cancer Early Detection Program." At-A-Glance Report. www.cdc.gov/cancer/nbccedp/about.htm
- 5 Hunsaker J.A., McConville J., Grenardo O., Mercado J., Hubbard J., & Berman J. 2001. *Colorado Public Health Improvement Plan*. Colorado Department of Public Health and Environment: Colorado Turning Point Initiative.

Additional Information

For more information about the Behavioral Risk Factor Surveillance System (BRFSS), visit the national BRFSS Web site at www.cdc.gov/nccdphp/brfss, or contact the Health Statistics Section at the Colorado Department of Public Health and Environment, 303-692-2160.

Data from the Colorado Behavioral Risk Factor Surveillance System can also be queried using the Colorado Health Information Dataset (CoHID) at www.cdphe.state.co.us/sascohidweb/cohids.html

This Brief is available on our Web site at www.cdphe.state.co.us/hs/pubs.html

The Colorado Comprehensive Cancer Prevention and Control Program (CCPC) made financial support for this brief possible. Funding for this project was provided through the Centers for Disease Control and Prevention (CDC), cooperative agreement U55/CCU816013-01.

The CCPC program received funding in 1998 to reduce cancer deaths and the disparity in death rates in subpopulations of Colorado residents through the coordinated efforts of Collaborative Partnerships of both public and private agencies. The CCPC administers the activities of the Colorado Cancer Coalition to bring together and coordinate cancer prevention, early detection, treatment, support, and research efforts to improve the quality of life of everyone in every corner of Colorado.

For more information on the CCPC program please contact 303-692-2519.

The goal of CWCCI (The Colorado Women's Cancer Control Initiative), a program of the Colorado Department of Public Health & Environment (CDPHE), is to reduce breast and cervical cancer mortality through the promotion of compliance with routine screening guidelines, and timely, state-of-the-art diagnostic evaluation. It is part of the National Breast and Cervical Cancer Early Detection Program (NBCCEDP) funded through the Centers for Disease Control & Prevention. The program provides breast and cervical cancer screening (mammograms, clinical breast exams, Pap tests and pelvic exams) and selected diagnostic services at 126 sites in 47 counties throughout Colorado. These exams are provided free of charge to uninsured or underinsured, low income (<250% FPL) women 40-64 years of age, with emphasis on women age 50 to 64. The program conducts public education and outreach activities to recruit eligible women into screening. Special priority is placed upon screening women with health disparities, including women of color, women with disabilities, and hard to reach urban and rural women. Effective July 1, 2002, women screened through CWCCI and diagnosed with cancer/precancer will be eligible for Medicaid. Since its implementation in 1991, CWCCI has screened over 48,000 women. Over 230 breast and 1,500 cervical (including CIN) cancers have been detected.

For more information regarding CWCCI, please call 303-692-2600 (Denver metro area) or 1-866-692-2600 (tollfree outside Denver metro area).