



Colorado Department  
of Public Health  
and Environment

## Health Statistics Section

Alyson Shupe, Ph.D.,  
Section Chief

Monica Clancy

Patricia Holguin

Becky Rosenblatt, M.A.

### Research and Evaluation Unit

Jodi Drisko, M.S.P.H.,  
Director

Gail Kelsey

Janelle Mares

Debra Tuenge

Chris Wells, M.S.

### Survey Research Unit

Mike Reeds, M.A.,  
Director

Ava Williams

Jessica Wilson

### Vital Statistics Unit

Huiyun Xiang, M.D., Ph.D.,  
Director

Mary Chase

Juanita Galvan

Rose Hammond, M.S.

Jing Wang, M.S.

4300 Cherry Creek Drive South  
Denver, Colorado 80246-1530  
(303)692-2160  
(800)886-7689

health.statistics@state.co.us  
www.cdph.state.co.us/hs/

## Sociodemographics, General Health Status, and Access to Care Among Colorado Adults With Disability

*Huiyun Xiang, MD, Ph.D.*

*Becky Rosenblatt, M.A.*

*Jing Wang, M.S.*

### Introduction

In recent years, the number of Americans reporting disabling conditions has increased dramatically. From 1989 through 1994, the Social Security Administration saw the number of Social Security Disability Insurance beneficiaries increase 40 percent (from 2.8 million to almost 4 million) and benefit payments increase 65 percent (from \$23 billion to \$38 billion).<sup>1</sup> According to the Centers for Disease Control and Prevention (CDC),<sup>2,3</sup> in the United States in 1998, between 34 and 68 million people had activity limitations and other disabling conditions.

Previous studies indicate that disability is highly related to socioeconomic, cultural, and environmental conditions, and because of the diverse socioeconomic and cultural environment of the United States, the characteristics of disability can be expected to vary by region and from state to state. A recent CDC publication shows that states differ substantially in the rate and severity of work disabilities.<sup>4</sup>

This report summarizes the prevalence of disability among Colorado noninstitutionalized adults ages 18 years or over by socioeconomic status, employment status, health conditions, and health insurance coverage using data collected between 1998 and 2000 by the Colorado Disability Survey.

### Methodology

From 1998 through 2000, the Colorado Department of Public Health and Environment conducted the Colorado Disability Survey using the survey design and sampling methods of the Colorado Behavioral Risk Factor Surveillance System (BRFSS). The Colorado 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. From 1998 through 2000, a total of 4,528 Colorado adults in rural and urban areas were interviewed. Information was collected about their demographic characteristics, behavioral risk factors, health status, health care utilization, disability status, and injury experiences in the past 12 months. Random digit dial telephone techniques were used to identify households within Colorado. One adult aged 18 years or over from each household was randomly selected to participate in the survey. In order to get a large sample size in rural areas, over-sampling methods were used. Using US census definitions, this study classified counties with a metropolitan area of over 100,000 people or a city with a population of at least 50,000 people as urban areas. All other counties were classified as rural.

Characteristics of disability were assessed using the conceptual framework established by the International Classification of Functioning, Disability, and Health (ICF).<sup>5</sup> The Colorado Disability Survey aimed to identify people with disabilities and assess their limitations and secondary conditions; to determine the degree to which respondents fully participate as active, productive members of society; and to assess the degree to which architectural, attitudinal, and policy barriers act to limit full participation of people with a disability in society. The study classified all respondents into one of three categories: people without disability, with moderate disability, and with severe disability. Respondents who said “yes” to at least one of the following four questions were categorized as having a disability: (A1) Are you limited in the kind or amount of work you can do because of any impairment or health problem? (A2) Because of any impairment or health problem, do you have any trouble learning, remembering, or concentrating? (A3) Do you use special equipment or help from others to get around? (A4) Are you limited in any way in any activities because of any impairment or health problem?

Severe disability was defined as responding “yes” to at least one of the following three questions among those who have

disabilities: (B1) Because of any impairment or health problem, do you need the help of other persons with your personal needs, such as eating, bathing, dressing, or getting around the house? (B2) Because of any impairment or health problem, do you need the help of other persons in handling your routine needs, such as everyday household chores, doing necessary business, shopping or getting around for other purposes. (B3) Using special equipment or help, what is the farthest distance that you can go? (Persons who cannot go more than one or two city blocks were considered to have a severe disability). All others who were categorized as having a disability but who did not meet the criteria for severe disability were defined as having a moderate disability.

A weight was developed for each respondent according to guidelines developed for weighting multiple years BRFSS data. The weights adjust for nonresponse and the probability of selection. In addition, a poststratification adjustment is made so the estimates reflect the age- and sex-population distributions of the urban and rural geographic regions of the state. The data were analyzed using SUDAAN and SAS software.

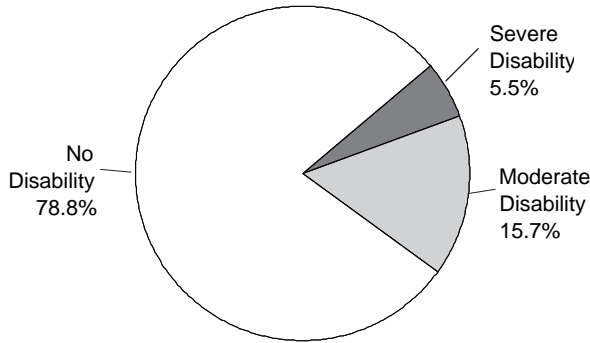
## Sociodemographics of Disability

According to the Colorado Disability Survey, in 1999, a total of 21.2 percent, or an estimated 682,000 Colorado adults had some degree of disability due to an impairment or health problem. Of the 21.2 percent with disabilities, 5.5 percent (almost 178,000 people) reported a severe disability, and 15.7 percent (over 504,000 people) reported a moderate disability (see Figure 1 and Table 1).

Women had a higher overall rate of disability than men (25.6% compared to 18.0%). The difference is statistically significant, and this finding is consistent with results from BRFSS surveys conducted in other states.<sup>6-7</sup>

The proportion of Colorado adults with disability increases significantly with age. Of people ages 70 and above, about

**Figure 1. Prevalence of disability in Colorado adults ages 18 and older, 1999**



### Statistics Primer

#### What is the International Classification of Functioning, Disability, and Health?

In 2001, after 20 years of refinement, the World Health Organization's General Assembly adopted the International Classification of Functioning, Disability, and Health (ICF).<sup>5</sup> A useful companion to the International Classification of Disease (ICD), now also maintained by World Health Organization, the ICF has been accepted by 191 countries around the world as the international standard for describing and measuring health and disability.

The ICF takes into consideration the social aspects of disability and provides a mechanism to document the impact of the social and physical environment on a person's functioning. For the first time in history, academics, researchers and clinicians are considering that people with "disabling" conditions can be healthy regardless of the body part involved, and have begun using the ICF to closely assess (1) health status outside of the disabling condition; (2) the relationship between activity limitations and barriers encountered in the environment or the use of facilitative assistive technology; and (3) participation and inclusion in society as a critical part of one's health. Rigorous scientific studies have been undertaken to ensure that the ICF is applicable across cultures, age groups and genders so as to collect reliable and comparable data on health outcomes of individuals and populations.

**Table 1. Prevalence distribution of Colorado adults by severity of disability and sociodemographic characteristics (N=4,528)**

Sociodemographic Characteristics	Severe Disability (1)		Moderate Disability (2)		No Disability	
		95% C.I. <sup>1</sup>		95% C.I.		95% C.I.
<b>All Adults (Ages &gt;=18)</b>	5.5	(4.7-6.3)	15.7	(14.5-16.9)	78.8	(77.4-80.2)
<b>Gender</b>						
Male	2.8	(2.0-3.6)	15.2	(13.4-17.0)	82.0	(80.1-83.9)
Female	8.3	(6.9-9.7)	16.3	(14.5-18.1)	75.4	(73.4-77.4)
<b>Age</b>						
18-29	1.3	(0.5-2.1)	8.8	(6.6-11.0)	89.9	(87.7-92.1)
30-39	3.3	(2.1-4.5)	10.3	(8.1-12.5)	86.4	(83.9-88.9)
40-49	4.7	(3.1-6.3)	16.7	(14.0-19.4)	78.6	(75.5-81.7)
50-59	6.0	(4.0-8.0)	20.0	(16.3-23.7)	74.0	(70.1-77.9)
60-69	9.5	(6.4-12.6)	23.6	(19.1-28.1)	66.9	(61.8-72.0)
70+	19.1	(15.0-23.2)	29.4	(24.9-33.9)	51.5	(46.4-56.6)
<b>Race/Ethnicity</b>						
White/non-Hispanic	5.3	(4.5-6.1)	16.7	(15.3-18.1)	78.0	(76.4-79.6)
White/Hispanic	6.5	(3.9-9.1)	12.0	(8.6-15.4)	81.5	(77.4-85.6)
Black	8.2	(2.3-14.1)	13.0	(6.2-19.8)	78.8	(70.3-87.3)
Other	5.1	(2.5-7.7)	13.4	(8.5-18.3)	81.5	(76.1-86.9)
<b>Years of Education</b>						
<8	9.6	(4.6-14.6)	19.6	(12.6-26.6)	70.8	(62.6-79.0)
9-12	6.7	(5.4-8.0)	15.9	(13.8-18.0)	77.4	(75.0-79.8)
12+	4.6	(3.7-5.5)	15.4	(13.8-17.0)	80.0	(78.3-81.7)
<b>Annual Household Income</b>						
<\$20,000	12.5	(9.8-15.2)	21.7	(18.3-25.1)	65.8	(61.7-69.9)
\$20,000 - \$34,999	5.6	(4.1-7.1)	14.6	(12.3-16.9)	79.8	(77.2-82.4)
\$35,000+	2.9	(2.1-3.7)	14.4	(12.6-16.2)	82.7	(80.8-84.6)
<b>Area</b>						
Urban	5.3	(4.5-6.1)	15.4	(14.0-16.8)	79.3	(77.7-80.9)
Rural	6.8	(5.4-8.2)	17.6	(15.4-19.8)	75.6	(73.1-78.1)

<sup>1</sup> Confidence Interval

half (48.5%) have some degree of disability, compared to 10.1% of people ages 18-29. Disability prevalence between ages 30 and 60 ranges from a low of 13.6 percent to a high of 26.0 percent.

Among racial/ethnic groups, Blacks have the highest prevalence of severe disability (8.2%). However, differences by race/ethnicity are not statistically significant (See Table 1).

Results from other studies have shown that adults who attain higher levels of education are much less likely to have a disability. Our results indicate that rates of disability among Colorado adults drop steadily with increasing educational attainment. Of those with less than 8 years of education, 29.2 percent had a disability, compared to 20.0 percent of those with 12 or more years of education.

A breakdown by income level shows that disability is inversely related to household income. People in households with annual incomes below \$20,000 are statistically significantly more likely than those in households with annual incomes of \$35,000 or above to have a disability (34.2% vs. 17.3%). The prevalence of severe disability among those with an annual household income below \$20,000 (12.5%) is 4.3 times that of people in households

with incomes of \$35,000 or above (2.9%).

People in rural areas have a slightly higher prevalence of disability (24.4%) than those in urban areas (20.7%). However, the difference is not statistically significant.

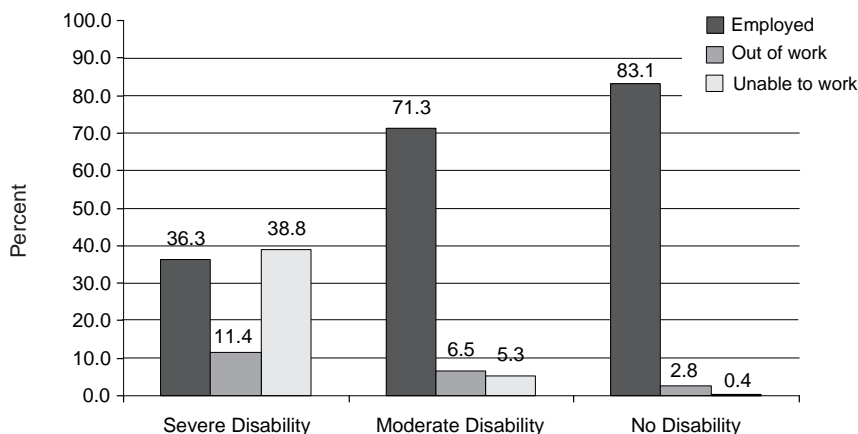
## Disability and Employment

Figure 2 shows the employment status of those ages 18 to 64 (working-age adults) by disability status. The “out of work” category includes “out of work for more than 1 year” and “out of work for less than 1 year.” The “unable to work” category includes people who are unable to work due to their health problems.

Among working-age adults with severe disabilities, only 36.3 percent were employed. This compares with 71.3 percent of those with moderate disabilities and 83.1 percent of those without disabilities. Working-age adults with severe disabilities also showed a higher rate of “out of work” (11.4%) than adults with a moderate disability (6.5%) or those without a disability (2.8%). These differences are statistically significant.

About 39 percent of working-age adults with severe dis-

Figure 2. Employment status by disability status, Colorado adults ages 18-64, 1998-2000



abilities were unable to work, compared with 5.3 percent of those with moderate disabilities.

### Disability and Health Status

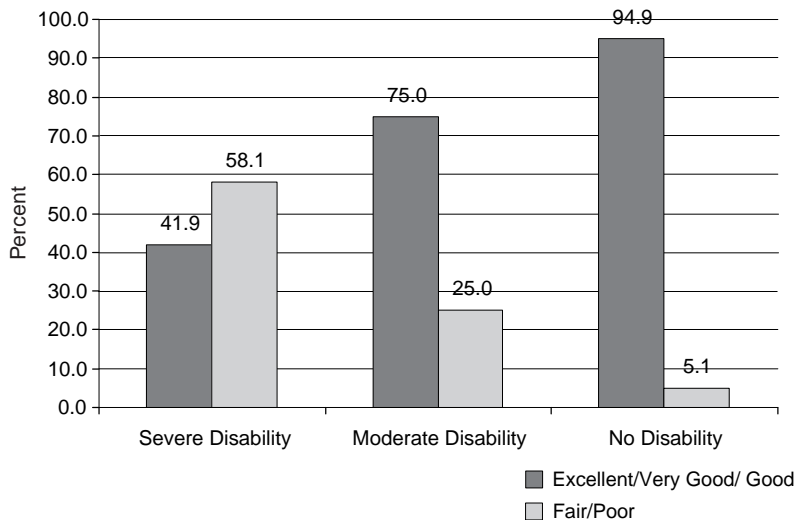
Self-reported general health status is a broad indicator of health and well-being, which incorporates a variety of physical, emotional, and personal components of health.

Results here indicate that self-reported general health is strongly associated with disability status. Figure 3 shows that 58.1 percent of those with severe disabilities said they had

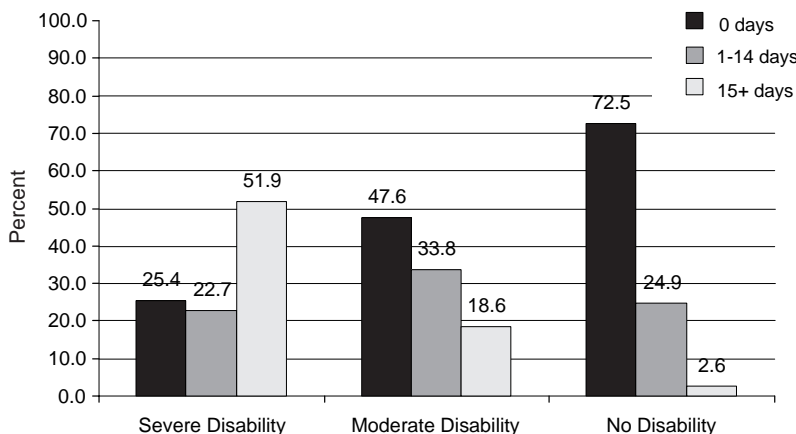
fair or poor health, compared with 25.0 percent of those with moderate disabilities and 5.1 percent of those without disabilities. The differences are statistically significant.

Physical health is strongly associated with disability status. According to this survey, more than half of people with severe disabilities (51.9%) experienced poor physical health more than 15 days in the past month, compared to 18.6 percent of those with moderate disabilities and 2.6 percent of those without disabilities (Figure 4). Conversely, one in four people with severe disabilities (25.4%), one in two people with moderate disabilities (47.6%), and seven in ten

**Figure 3. Self-reported general health status by disability status, Colorado adults, 1998-2000**



**Figure 4. Number of days during past 30 days physical health not good, Colorado adults, 1998-2000**



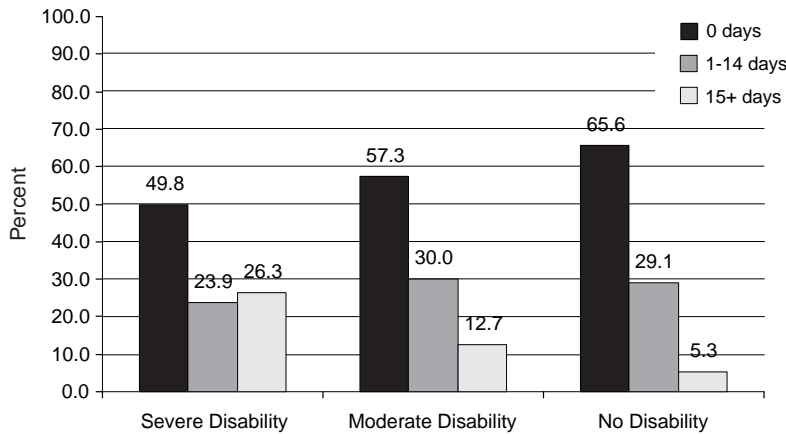
people without disabilities (72.5%) reported that they had no days of bad physical health in the past 30 days.

About 66 percent of people without disabilities experienced good mental health in the past month, compared to 57.5 percent of those with moderate disabilities and 49.8 percent of those with severe disabilities (Figure 5). Comparing mental health (Figure 5) with physical health (Figure 4) for people with severe disabilities shows that physical health problems occur more frequently. More than half of people with severe disabilities (51.9%) experienced poor physical health more than 15 days in the past month, compared to only 26.3 percent who experienced poor mental health more than 15 days in the past months.

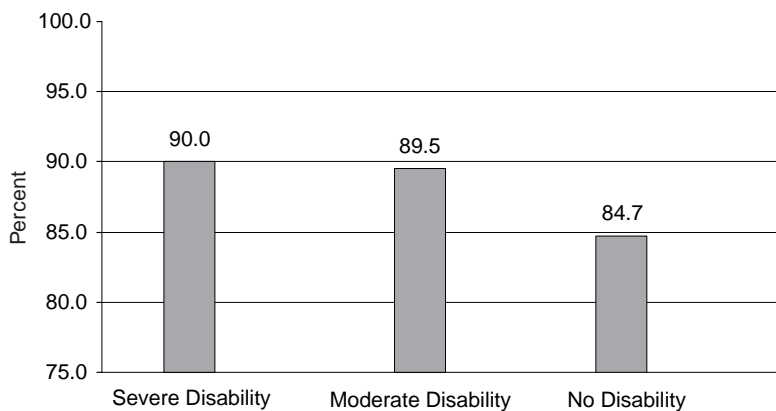
## Disability and Health Insurance Coverage

Health insurance coverage is an important determinant of access to health care. Persons without health insurance coverage are less likely to have a usual source of health care and are less likely to receive preventive health care services.<sup>8</sup> Figure 6 shows that among the three disability groups, health care coverage was the highest for people with severe disabilities (90.0%) and the lowest for those without disabilities (84.7%). In addition, the type of health care coverage varied widely by disability status. Figure 7 shows that 20 percent of people with severe disabilities in Colorado were covered by a government-paid plan (Medicare/Medicaid), compared to 3.8 percent of those with moderate

**Figure 5. Number of days during past 30 days mental health not good, Colorado adults, 1998-2000**

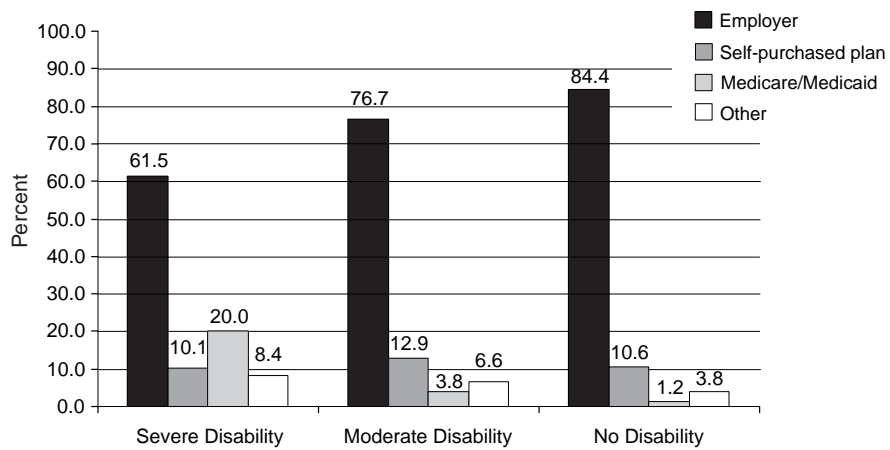


**Figure 6. Health care coverage by disability status, Colorado adults, 1998-2000**



disabilities and only 1.2 percent of those people without disabilities. Among people with severe disabilities, 61.5 percent of them were covered through their own employer or someone else's employer. Approximately 10 percent of people across the three disability groups purchased their own health care coverage.

**Figure 7. Type of health insurance coverage used for most of medical care by disability status, Colorado adults, 1998-2000**



## Summary

In Colorado, about 21.2 percent, or an estimated 680,000 noninstitutionalized adults have some degree of disability. Female adults, older people, people with lower levels of education, and people in households with annual incomes less than \$20,000 are more likely to have a disabling condition. Self-reported general health, physical health, and mental health are all strongly associated with disability

status. Higher percentages of people with disabilities have a fair or poor health status.

Compared to those without a disability, significantly lower percentages of people with disabilities are employed, and about 39 percent of people with severe disabilities are unable to work because of their impairments or health problems. Since a disabling condition can present a barrier to work, and employment is the predominant gateway to

private insurance coverage, people with a severely disabling condition are more likely to use government-paid health care coverage for their care.



## References

1. Sirken MG. Integrating Measurements of Disability in Federal Surveys: Seminar Proceedings. National Center for Health Statistics. *Vital Health Stat* 4(32). 2002.
2. Blackwell DL, Collins JG, Coles R. Summary health statistics for U.S. adults: National Health Interview Survey, 1997. National Center for Health Statistics. *Vital Health Stat* 10(205). 2002.
3. Blackwell DL, Tonthat L. Summary health statistics for the U.S. population: National Health Interview Survey, 1998. National Center for Health Statistics. *Vital Health Stat* 10(207). 2002.
4. CDC. State-Specific Prevalence of Disability Among Adults – 11 States and the District of Columbia, 1998. *MMWR* 49(31):711-4. 2002
5. World Health Organization. *International Classification of Functioning, Disability and Health*. Geneva, Switzerland: World Health Organization. 2001.
6. South Carolina Department of Health and Environmental Control. *Disability. Dataline* 1(4). 2000.
7. Rhode Island Department of Health. *Rhode Island Disability Chartbook: Findings from an Analysis of the 1998 Rhode Island Behavioral Risk Factor Surveillance System*. Rhode Island Department of Health. 2000.
8. LaPlante MP. *Disability, Health Insurance Coverage, and Utilization of Acute Health Services in the United States*. Washington, DC: U.S. Department of Health and Human Services.