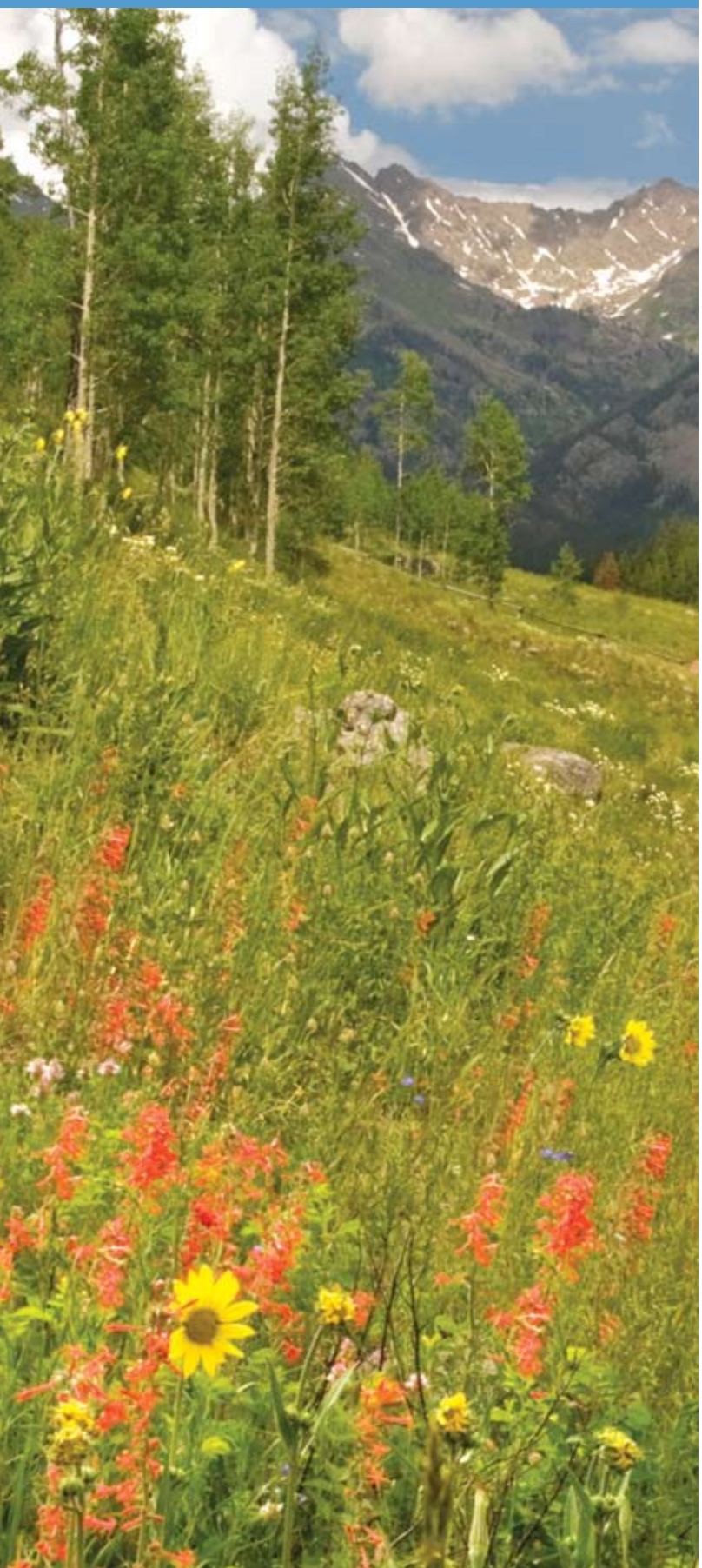
Diabetes disparities in rural Colorado



CoRHAC
Colorado Rural Health Advocacy Coalition

EXECUTIVE SUMMARY

Prepared by American Diabetes Association for
The Colorado Rural Health Advocacy Coalition

CoRHAC

Colorado Rural Health Advocacy Coalition

Colorado Rural Health Advocacy Coalition is a voice in health care policy that serves as a conduit to educate, listen and advocate on shared rural health issues.

The Colorado Rural Health Advocacy Coalition has brought together five organizations—**Action 22, Club 20, Colorado Rural Health Center, Progressive 15, and Rocky Mountain Farmers Union**—to develop a structure and voice for the rural health care needs for Colorado. CoRHAC has received funding from The Colorado Health Foundation.

For more information:
www.corhac.com

PARTNER ORGANIZATIONS:

ACTION 22: The membership, which includes individuals, cities, communities, counties, associations, businesses and organizations, bands together for a stronger voice at the State Legislature and in Washington, D.C. Action 22's mission is to serve as a leader for cohesive action to affect change and shape the future of Southern Colorado.

For more information contact:

Cathy Garcia
President/CEO
1.888.799.1799 or 719.560.9897
www.action22.org

CLUB 20 is an organization of counties, communities, tribes, businesses, individuals and associations in Western Colorado. Its activities include marketing and advertising, public education, promotion, meetings and events, and political action. CLUB 20 is the "Voice of the Western Slope".

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Executive Director,
970.242.3264
www.club20.org

The Colorado Rural Health Center (CRHC): The mission of CRHC is enhancing health care services in Colorado by providing information, education, linkages, tools and energy toward addressing rural health issues. CRHC has over 3,000 general members, 65% of which represent rural Colorado. The Colorado Rural Health Center works with people, organizations, and communities statewide.

For more information, contact:

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PROGRESSIVE 15 advocates and affects legislation and policy for the economic vitality and quality of life for citizens. The mission of Progressive 15 is to speak with a single, unified voice on issues of mutual concern facing Northeastern Colorado. Its membership includes individuals, government agencies, non-profits, health care agencies, counties, municipalities, education, business, and agriculture.

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ROCKY MOUNTAIN FARMERS UNION is a progressive, grassroots organization dedicated to achieving profitability for family farmers and ranchers; promoting stewardship of land and water resources; delivering safe, healthy food to consumers; strengthening rural communities through education, legislation, and cooperation; and being the voice for family agriculture and rural communities. Since its beginnings in 1907, RMFU has led efforts to maintain and improve rural communities in Wyoming, Colorado and New Mexico through state and federal legislation, educational programs, and cooperatives.

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EXECUTIVE SUMMARY

DIABETES DISPARITIES IN RURAL COLORADO

Colorado is in the midst of an epidemic of diabetes, which if left unchecked, will place an intolerable burden on our health care system and quality of life over the next generation. The prevalence of diabetes is somewhat higher in rural than in urban areas of Colorado. People with diabetes in rural communities tend to be diagnosed later, and these people receive substandard health care compared to their urban counterparts.

Approximately 4.8 percent of adults (29,517 people) in rural Colorado have diabetes, and prevalence of the disease is increasing rapidly in children. These increases have been observed in all segments of society. Rural Coloradans, however, suffer from diabetes and its complications more than others.

There are three key barriers to optimal diabetes care. These barriers are likely to have the most impact on diabetes care in rural Colorado:

- Poor access to care for the large and growing number of uninsured rural Coloradans;
- Provider and workforce shortages;
- Integration of population-based services with personal health care services.

Policy Options:

Although there are many challenges facing rural communities, the opportunities for improving health and health care services for rural Coloradans with diabetes are also great:

- Address the provider shortage by supporting educational and incentive programs. These programs support training, recruiting and retention of physicians and other professionals in underserved areas.
- Support the existing models of care in rural communities that meet the special needs, resources and circumstances of those communities.
- Provide rural health care providers and the public with lists of self-management diabetes education and training programs available to rural Coloradans with diabetes. Work with representatives of rural communities to increase the number of self-management education programs in rural Colorado.
- Implement a system of care that regularly assesses disease control and adherence to the American Diabetes Association's (ADA) standards of care to help improve outcomes.
- Distribute effective learning tools to rural health care providers to increase their knowledge and use of the standards of care for people with diabetes using the Chronic Care Model and Model for Improvement.
- Develop interventions at multiple levels and work with a wide array of public health workers in rural areas to improve health at the community level for people with diabetes in rural communities.

PREVALENCE, MORBIDITY, MORTALITY AND DISPARITIES IN RURAL COLORADO

Prevalence

The burden of diabetes in Colorado is hard to measure exactly, but is well characterized. Almost 167,000 persons are diagnosed with diabetes in Colorado. Another 86,800 are likely to have the disease but do not know it (Center for Disease Control [CDC], 2008). The prevalence of diagnosed diabetes in Colorado adults for 2005 was 4.5 percent, as compared to 4.8 percent in rural areas. (Health Statistics Section, Colorado Department of Public Health and Environment [CDPHE], 2008c). Nationally, it is estimated that the rate of undiagnosed diabetes is about one-third of the total rate of people diagnosed with diabetes (CDC, 2002). Using this estimate, we can surmise that the prevalence of diagnosed and undiagnosed diabetes in adults in rural Colorado was approximately 6.4 percent.

The number of persons with diagnosed diabetes in Colorado has increased by an estimated 48 percent since 1990 (Health Statistics Section, CDPHE, 2008c). This increase is partly due to an increasing prevalence of obesity, the aging of the population and an increase in the Hispanic population that is at greater risk for diabetes.

Diabetes prevalence increased in individual Colorado counties between 1990 and 2005. In 1990, only seven rural counties had an overall prevalence of diabetes greater than 5 percent. By 2005, 31 rural counties had a prevalence of at least 5.5 percent, and all but seven rural counties had at least a 4 percent prevalence rate (Health Statistics Section, CDPHE, 2008c). Diabetes prevalence increases with age. Coloradans age 65 years or older are more than twice as likely to be diagnosed with diabetes as persons age 45 to 64 years. Women are slightly more likely to be diagnosed with diabetes than men.

Racial and ethnic subpopulations in Colorado suffer from diabetes at disproportionately higher rates than the majority population. Research shows that the distribution in Colorado is consistent with that of the United States. The prevalence of diagnosed diabetes among non-Hispanic whites is 3.8 percent, whereas the rate among Hispanics is 6.2 percent (Health Statistics Section, CDPHE, 2008c). This has even more significant implications since 17.4 percent of the rural population in Colorado is Hispanic, compared to 16.1 percent of the population in urban areas (Colorado Rural Health Center, 2003c). Another important rural population group is migrant farm workers. Migrant workers are often not counted in state health surveys because of the transient employment and places of residence, and no state prevalence data is available. Estimates on the total number of migrant workers have ranged from 30,000 to 32,000.

Morbidity

Serious health complications can arise from diabetes if it is not well controlled (ADA, 1998). Once it develops, diabetes is a chronic, lifelong disease with no cure and rather ineffective, costly treatment (CDC, 2002). The major complications of diabetes include blindness, cardiovascular disease, kidney failure and lower-extremity amputations. Between 2000 and 2005, there were almost 50,000 hospitalizations of Coloradans with diabetes.

- **The majority of these hospitalizations (9,783) were for major cardiovascular disease.**
- **The second leading cause of hospitalizations in persons with diabetes was acute hyperglycemic complications (1,706), and the third cause was lower-extremity amputations (613).**
- **The remaining hospitalizations of persons with diabetes are attributed to a variety of causes and are grouped together in the category "any mention."**

(Health Statistics Section, CDPHE, 2008a).

Mortality

Diabetes ranks as the eighth leading cause of death by disease in Colorado. Over 1800 deaths are due to diabetes (any cause) per year (Health Statistics Section, CDPHE, 2008b). It should be kept in mind that people die from complications of diabetes, rather than from the disease itself. Therefore, diabetes is under reported as the underlying or contributing cause of death.

Males were slightly more likely to die from diabetes as the primary cause than females in 2005. As noted earlier, Hispanics have greater diabetes prevalence rates than whites.

Barriers Facing Rural Colorado

Challenges posed by the rural environment often exacerbate already complex health policy problems. The key issues facing rural Colorado include:

- **Providing access to care for uninsured rural Coloradans;**
- **Addressing provider and workforce shortages; and**
- **Integrating population-based services with personal health care services.**

Providing Access to Care for Uninsured Rural Coloradans

Access to excellent health care is not evenly distributed in Colorado. Rural residents often face barriers to high-quality care. There are a variety of factors closely related to the high rate of uninsured residents in rural Colorado, including:

1) Availability. Rural communities face extremely limited availability of health insurance options, which limits choice, competition, affordability and often quality.

2) Lack of data. An ongoing challenge in addressing the uninsured in rural Colorado is a lack of the quantifiable data needed to fully assess and address the severity of this rural issue.

3) Group plans. There are fewer group-sponsored health insurance plans available in rural communities due to a smaller number of larger employers.

4) Affordability. If available, rural health insurance often costs more than in urban areas.

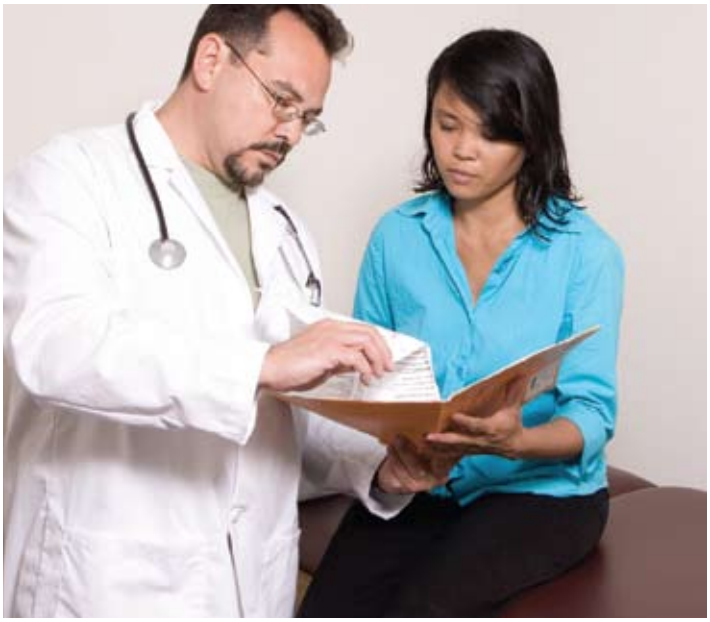
5) Provider participation. It is often difficult to locate a rural provider who accepts Medicaid, Medicare or CHP+ in rural Colorado. (Colorado Rural Health Center, 2003c).

The availability of health insurance is an important determinant of health and disability status, likelihood of physician use, and overall likelihood of health care treatment (Ziller, Coburn, Loux, Hoffman and McBride, 2003). People who are medically vulnerable, such as the elderly, poor and uninsured, are more likely not to have health insurance. Those who are uninsured are more likely to lack a regular source of care and less likely to use many health services, including nursing services (Colorado Rural Health Center, 2003a). People who do not have health insurance also may not have preventive care and disease screenings. (Chen, Brown, Archibald, Aliotta and Fox, 2000).

Addressing Provider and Workforce Shortages

Provider shortage issues in rural Colorado create huge barriers for people with diabetes in rural communities:

- Only 11 of 52 rural counties are served by an organized public health department that includes comprehensive health department services for people with diabetes in rural communities.
- Fifteen Colorado counties have two or fewer doctors providing patient care for the entire county;
- Seventy-five percent of rural counties are served by only one public health nurse, who is often responsible for the entire county—covering an average of 1,632 square miles.



Integrating population-based services with personal health care services

Diabetes problems can be alleviated and treatment of complications can be less severe through self-management of diabetes that is combined with early detection and treatment of complications. Poorly managed care can increase the risk of many complications, ranging from infectious diseases and dental disease to vascular with complications, retinopathy, neuropathy and nephropathy.

Sixty percent of adult Coloradans with diabetes reported having taken a class to learn how to manage their diabetes at some point in their lives. It is important to note that 69 percent of urban residents and only 18.8 percent of rural residents reported they had ever taken a class (Health Statistics Section, CDPHE, 2008c).

Self-monitoring of blood glucose is an important diabetes self-management skill and can be used as a measure for overall diabetes self-care. Only 50.1 percent of Coloradans with diabetes reported checking their blood glucose at least once daily. Self-monitoring blood glucose can be an expensive prospect if a person does not have health insurance. People with health insurance tend to have a higher rate of self-monitoring than those who do not (ADA, 1998).

Regardless of the type of diabetes, the risks of morbidity, mortality and complications are related to the degree of control of blood sugar levels. Unfortunately, such control is not maintained by many people with diabetes, especially as they get older. Traditional treatments of diet, exercise, oral pharmaceuticals and insulin therapy tend to be progressively more ineffective with duration of the disease (Diabetes Prevention Program Research Group [DPPRG], 2002).

Policy Options for Improvement

Although there are many challenges facing rural communities, the opportunities for improving health and health care services for rural Coloradans with diabetes are also great. Colorado could address the provider shortage by supporting educational and incentive programs. These programs support training, recruiting, and retaining physicians and other professionals in undeserved areas. Colorado and rural communities could also support the existing models of care in rural communities that meet the special needs, resources and circumstances of those communities. Other policy options for rural Colorado include the following:

Option 1:

One option is to improve access for rural Coloradans with diabetes to the medical care, supplies, medicines and education that are needed to adequately self-manage their disease. Successful treatment of diabetes is complex. It involves patient education and monitoring of nutrition, exercise, motivation and lifestyle. It also requires a large component of self-management, which is likely to be more successful if the provider-patient relationship and level of patient satisfaction are positive. Improved access to diabetes self-management education should result in improved self-care by rural Coloradans with diabetes and more empowered health care consumers. Self-management could also improve by educating rural health care providers and the public on the effectiveness of diabetes self-management education on improving self-care. This could be accomplished by providing rural health care providers and the public with lists of self-management diabetes education and training programs available to rural Coloradans with diabetes and working with representatives of rural communities to increase the number of self-management education programs in rural Colorado.

Option 2:

The second option is to improve the overall access that rural diabetic Coloradans have to the primary health care system. Providers often have difficulty keeping current on diabetes therapies and rapidly changing medical technology. Implementation of a system of care that regularly assesses disease control and adherence to the ADA's standards of care would help improve outcomes.

We could also distribute effective learning tools to rural health care providers to increase their knowledge and use of the standards of care

for people with diabetes using the Chronic Care Model and Model for Improvement. For those who have been diagnosed with diabetes, regular follow-ups are essential. Routine office visits need not be performed by a physician, however. Using existing resources in different ways, rather than restructuring the rural health care system, may be the most effective means to provide better health services to people with diabetes in rural communities.

Option 3:

The third option is to increase efforts to reduce avoidable hospitalizations, especially among the poor and medically undeserved. Reducing hospitalizations and improving health status must include increasing the number of rural providers and the adoption of best practices. The unique context of rural health care must be considered. Models, policies and measures developed in an urban context may or may not work well in rural Colorado because rural Colorado has unique factors that must be acknowledged and analyzed.

Option 4:

Finally, the fourth option is to develop interventions at multiple levels and work with the wide array of public health workers in rural areas to improve health at the community level for people with diabetes in rural communities. The public health infrastructure is composed of four components: information and data systems, the workforce, public health organizations and resources to deliver the essential public health services. The four areas are intertwined and should be addressed in concert. This need is especially pronounced in rural areas of Colorado, as only 11 of 52 rural counties are served by a public health department and 75 percent of rural counties are served by only one public health nurse, who is often responsible for the entire county—covering an average of 1,632 square miles.

SUMMARY AND CONCLUSIONS

Colorado is in the midst of an epidemic of diabetes, which, if unchecked, will place an intolerable burden on our health care system and quality of life over the next generation. The prevalence of diabetes is somewhat higher in rural than in urban areas of Colorado. Moreover, people with diabetes in rural communities tend to be diagnosed later and receive substandard health care compared to their urban counterparts. However, type 2 diabetes, the predominant form of the disease, can largely be prevented by the simple means of modest weight loss, healthy eating and exercise.

The public health and health care systems in Colorado have not been focused on dealing with the prevention and treatment of diabetes. Rural areas are especially disadvantaged because of the lack of nearby health care providers who are knowledgeable about diabetes and because of limited access to insurance coverage. New cost-effective approaches need to be developed around a chronic disease model, using the existing health care and public health infrastructure, and based upon preventive and routine patient care clustered at the community level by allied health professionals. These approaches may also be useful in solving the related problems of limited access to health care and inadequate prevention and management of other chronic diseases.

Continued progress in addressing diabetes disparities in rural Colorado will require integrated, interdisciplinary action from the affected rural communities and from the huge variety of stakeholders whose policies and actions impact their health and well-being. This policy paper provides a base of information and a starting point for considering actions to address diabetes disparities in rural Colorado. It is essential for accomplishing sustained and significant change, to consider the broad landscape of influences on diabetes in rural Colorado, with others who may be positioned to act in collaborative or complementary ways.

Table 2.

Diagnosed Diabetes in Colorado - Percentage of Adults in Colorado, 2005		
County	Estimated Percent	Estimated Total
Adams County	5.1	14010
Arapahoe County	5	18720
Boulder County	3.9	8108
Broomfield County	3.9	1175
Denver County	4.3	17610
Douglas County	3.5	6006
El Paso County	4.9	19250
Jefferson County	4.9	18710
Larimer County	4.1	8238
Mesa County	5.2	5014
Pueblo County	6.5	7139
Weld County	4.1	6563
Total in Front Range	**4.616666667**	**130543**

Diagnosed Diabetes in Colorado - Percentage of Adults in Colorado, 2005		
County	Estimated Percent	Estimated Total
Alamosa County	4.6	476
Archuleta County	4.8	438
Baca County	6.4	200
Bent County	5.3	220
Chaffee County	5.3	719
Cheyenne County	5.4	76
Clear Creek County	4.1	289
Conejos County	5.3	307
Costilla County	6	155
Crowley County	4.6	201
Custer County	5.6	171
Delta County	5.3	1208
Dolores County	5.3	74
Eagle County	3	1051
Elbert County	3.9	641
Fremont County	5.1	1918
Garfield County	4	1394
Gilpin County	4.3	168
Grand County	4.1	416
Gunnison County	3.4	375
Hinsdale County	5.6	34
Huerfano County	5.8	356
Jackson County	6.4	71
Kiowa County	5.8	62
Kit Carson County	5.1	282
La Plata County	3.9	1390
Lake County	3.8	204
Las Animas County	5.3	610
Lincoln County	5	213
Logan County	5.1	758
Mineral County	5.6	42
Moffat County	4.3	405
Montezuma County	5.8	1036
Montrose County	5	1360
Morgan County	4.7	900
Otero County	5.2	708
Ouray County	5.1	168
Park County	4	514
Phillips County	5.7	185
Pitkin County	4.1	502
Prowers County	5.2	482
Rio Blanco County	5.1	221
Rio Grande County	5.3	461
Routt County	3.4	566
Saguache County	4.7	236
San Juan County	4.8	23
San Miguel County	3.5	209
Sedgwick County	6.2	118
Summit County	3	597
Teller County	4.4	726
Washington County	5.6	192
Yuma County	5.4	375
Total in Rural Counties	**4.878846154**	**24503**

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