Needs Assessment Examining Diabetes Self-Management Education In Colorado

December 2009

COLORADO DEPARTMENT OF
PUBLIC HEALTH & ENVIRONMENT
Diabetes Prevention & Control

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Colorado Diabetes Prevention and Control Program of the Colorado Department of Public Health and Environment

Michelle Hansen, MS, RD, CDE
Gloria K. Vellinga-Wilkinson, RD, CDE
Laura Scott, BS
April Sifford, BA

Epidemiology, Planning and Evaluation Branch of the Colorado Department of Public Health and Environment

Ashley Juhl, MSPH
Kristin McDermott, MA
Kerry A. Thomson, MPH, CHES
Christen Lara, BA
Miranda Meadow, BA

Health Statistics Section of the Colorado Department of Public Health and Environment

Kieu Vu, MSPH
Kirk Bol, MSPH

Health Communications Unit of the Colorado Department of Public Health and Environment

Dave Brendsel

Diabetes Self-Management Education Work Group Participants

Marc-Andre Cornier, MD
Sue Glass
Karen Hoffman-Marc, ANP-C
Dawn M. James, MSN, APRN, CNS
Leighanna Konetski, RD
Julie A. Marshall, PhD
Wesley Nuffer, PhD
JoAnn Pegues, RD, MPA
Alok Sarwal, PhD
Julissa Molina Soto, BS
Sam Ellis, PhD
Matt Guy, MPA
LaQuana Guillory-Williams
Christine Katzenmeyer, MA
Jenny Madrid MPH, RD, CDE, BC-ADM
Mary Margaret O'Gara, RN, BSN, CDE
Gloria Nussbaum, RN
Teresa J. Sakraida, PhD, RN
Susan A. Scherer, PT, PhD
Sonia Sheck, MS

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EXECUTIVE SUMMARY

Since 2004, the prevalence of diabetes in Colorado has increased. Unfortunately, the number of Coloradans who have ever taken a class on how to manage their diabetes has not increased. Paradoxically, those who reported attending a class also reported more participation in their diabetes preventive care practices.

In an effort to address the increased need for better education and access among individuals with diabetes to quality diabetes self-management education, the Colorado Diabetes Prevention and Control program undertook a comprehensive statewide needs assessment for Diabetes Self-Management Education (DSME). DSME improves clinical outcomes through encouraging preventive care and self-management of diabetes.

The needs assessment identified six Colorado regions encompassing 23 counties with the greatest need for DSME. The assessment identified existing local diabetes education resources, gaps and opportunities in DSME, and recommended strategies for increasing DSME across Colorado. The identified strategies will be targeted within regions demonstrating greatest need first and then implemented statewide. The overall goal is to create and enhance opportunities in Colorado for sustainable DSME programs positioned for reimbursement.

Regions 1, 6, 7, 8, 14 and 20 were identified as having the greatest need for DSME based on secondary and tertiary prevention indicators, including prevalence of diabetes among adults, estimated counts of adults with diabetes, diabetes mortality rates, prevalence of diabetes self-management education and prevalence of preventive care practices for persons with diabetes. The prevalence of diabetes was considered the most important factor, followed by the prevalence of persons with diabetes who had received DSME.

Current DSME resources in Colorado included the American Diabetes Association recognized programs, American Association of Diabetes Educators certified programs, certified diabetes educators, registered dietitians, Stanford University DSMP program, federally qualified health centers, and pharmacy student-based clinics. Mapping of these resources revealed gaps in statewide DSME and opportunities for additional DSME resource allocation.

The ability to receive reimbursement for DSME guided the recommendations for sustainable DSME delivery systems. Sustainable opportunities include the following examples: 1) Support existing or new DSME programs within hospitals or federally qualified health centers, pharmacies, primary care physician practices, or independent practitioners; 2) Establish Stanford University DSMP program through existing or new organizational infrastructures; and 3) Maximize capacity of DSME programs through referral networks.

Table 1: Colorado counties included in the selected 6 focus regions with diabetes prevalence among adults

Region	Counties	Diabetes Prevalence (%)* 2005-2007
Region 1 – Northeast	Morgan, Logan, Sedgwick, Phillips, Yuma, Washington	7.5
Region 6 – Southeast	Crowley, Kiowa, Otero, Bent, Prowers, Huerfano, Las Animas, Baca	10.2*
Region 7 – Pueblo	Pueblo	8.7*
Region 8 – San Luis Valley	Saguache, Mineral, Rio Grande, Alamosa, Conejos, Costilla	6.4
Region 14 – Adams County	Adams	7.5*
Region 20 – Denver County	Denver	5.4
* Denotes regional diabetes prevalence significantly higher than statewide prevalence of 5.1 percent (2005-2007)		

INTRODUCTION

Purpose

The purpose of the *Needs Assessment Examining Diabetes Self-Management Education in Colorado* is to report findings from a comprehensive and statewide assessment which identified regions in Colorado with the greatest need for DSME. The *Needs Assessment* also identified existing local diabetes education resources, gaps and opportunities in availability of services, and strategies for increasing DSME access across Colorado.

The *Needs Assessment*:

1) Describes the role of DSME in Colorado for improving preventive care practices and long-term health outcomes in individuals and populations with diabetes.
2) Identifies focus regions across Colorado demonstrating the greatest need for DSME based on population-based diabetes data and resources.
3) Identifies resources for delivering DSME statewide.
4) Identifies gaps and opportunities in DSME throughout Colorado.
5) Identifies sustainable systems level strategies to increase availability of DSME programs in Colorado.

Diabetes Prevalence in the United States

Diabetes is defined as elevated blood glucose resulting from defects in insulin production, insulin action, or both. Estimates of diabetes prevalence include:

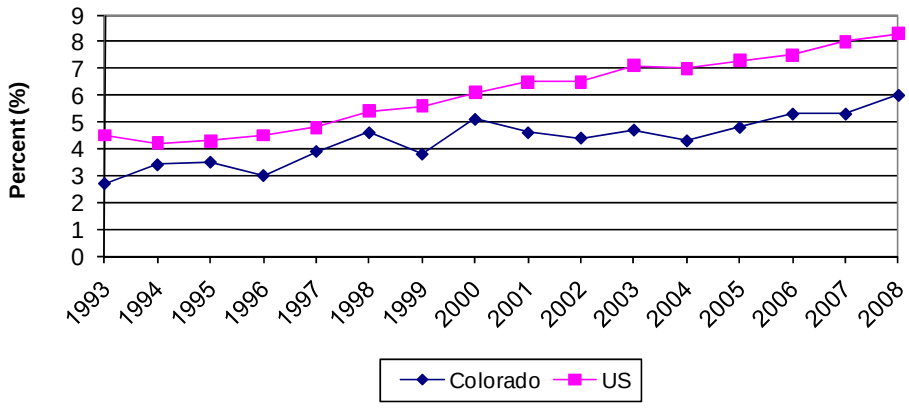
- As of 2007, Centers for Disease Control and Prevention (CDC) reports that almost 24 million individuals (nearly 8 percent of the U.S. population) of all ages are estimated to have diabetes (type 1 and type 2, Glossary, page 57), and an estimated 25 percent of these individuals (5.7 million) are unaware they have the condition (CDC, 2008).
- About 187,000 individuals less than 20 years of age have diabetes, which represents 0.2 percent of all children and adolescents in this age group (CDC, 2008).
- Approximately 23 percent of the U.S. population 60 years and older and nearly 11 percent of those ages 40-59 have diabetes, according to the 2004-2006 National Health Interview Survey (CDC, 2008).
- Age-adjusted Indian Health Services (IHS) data from 2005 identified 16.5 percent of American Indians and Alaska Natives aged 20 years or older who had diabetes (CDC, 2008).
- Age-adjusted 2004-2006 national survey data for individuals 20 years or older indicate that 6.6 percent of non-Hispanic whites, 7.5 percent of Asian Americans, 10.4 percent of Hispanics and 11.8 percent of non-Hispanic blacks had diagnosed diabetes. Among Hispanics, the prevalence of diabetes was 8.2 percent for Cubans, 11.9 percent for Mexican Americans and 12.6 percent for Puerto Ricans (CDC, 2008).
- The diabetes prevalence for adults with less than a high school education is twice that of those with a college degree (CDC, 2008).

Identifying nationwide populations disproportionately affected by diabetes enhances the understanding at the state level of these same factors.

Diabetes Prevalence in Colorado

Consistent with the steady increase of diabetes prevalence in the United States, the prevalence of diabetes among adults in Colorado has increased since 1993. Figure 1 illustrates trends in the prevalence of diagnosed diabetes among adults in Colorado compared to the United States during a recent 15-year period. Diabetes prevalence in Colorado has more than doubled in the past 15 years while the prevalence of diabetes in the United States has nearly doubled.

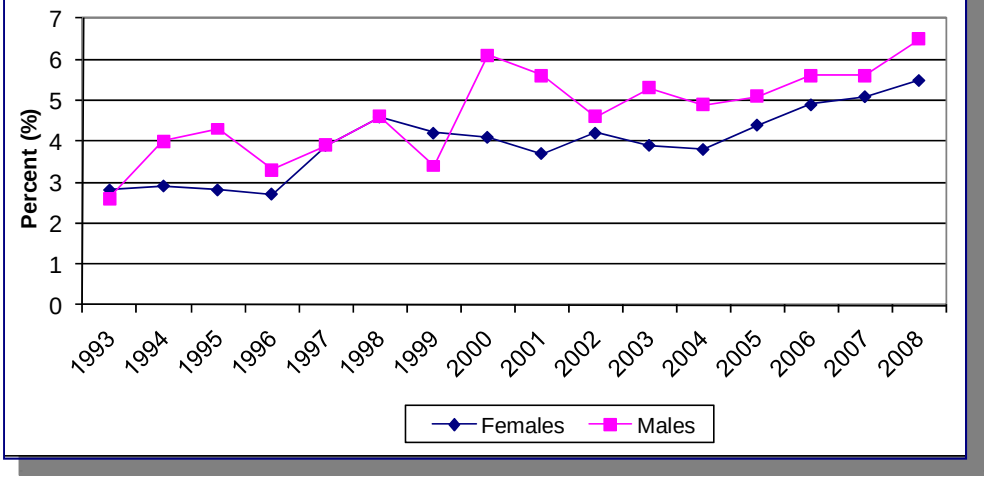
Figure 1: Percent of adults with diabetes, Colorado and the United States, 1993-2008



Source: Colorado Behavioral Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment

In 1993, 2.7 percent of adult Coloradans reported having diabetes. By 2008, 6.0 percent of adult Coloradans reported having diabetes. By comparison, 4.5 percent of adults in the United States reported having diabetes in 1993 and 8.3 percent reported having the disease in 2008. The prevalence of diabetes in Colorado has been consistently lower than the prevalence of diabetes in the United States.

Figure 2: Percent of adults with diabetes by sex, Colorado, 1993-2008

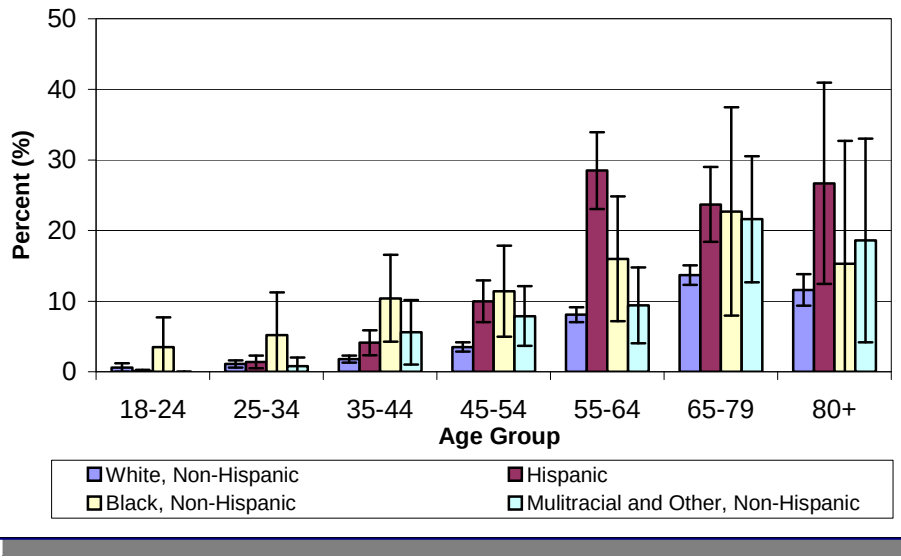


The prevalence of diabetes was similar among male and female adults. For each year since 2000, the prevalence of diabetes was higher in males than in females, although the differences were not statistically significant (Figure 2).

Source: Colorado Behavioral Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment

Figure 3 shows diabetes prevalence by age and race/ethnicity in Colorado adults. In the younger age categories, 18-24, 25-34, 35-44 and 45-54, the prevalence was highest in the Black, non-Hispanic population, although the differences were not statistically significant from other racial/ethnic groups. In the age ranges beginning at 55, the prevalence was highest among the Hispanic population. In addition, the prevalence for diabetes markedly escalated beginning at age 55 for all race/ethnicities.

Figure 3: Diabetes prevalence by age and race/ethnicity, Colorado, 2005-2007



Source: Colorado Behavioral Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment

Diabetes Self-Management Education (DSME)

Diabetes Self-Management Education (DSME) is defined in the National Standards for Diabetes Self-Management Education (2010) as the ongoing process of facilitating the knowledge, skills and abilities necessary for diabetes self-care (Funnell, 2010). The DSME process is guided by evidenced-based standards and incorporates an individual's needs, goals and life experiences (Funnell, 2010).

DSME inherently includes diabetes self-management support (DSMS) through patient empowerment and motivational interviewing essential for healthy outcomes. DSME is a partnership that aids and inspires individuals with diabetes to become informed about their diabetes and other health conditions and take an active role in treatment. DSME also includes diabetes self-management training (DSMT), which is used by Medicare in the billing and reimbursement processes. For this assessment, DSME will be used interchangeably for DSMT.

Diabetes Self-Management Education (DSME) and Diabetes Self-Management Training (DSMT) are often used interchangeably. Specifically, Medicare uses DSMT. For simplicity, DSME is used in the needs assessment.

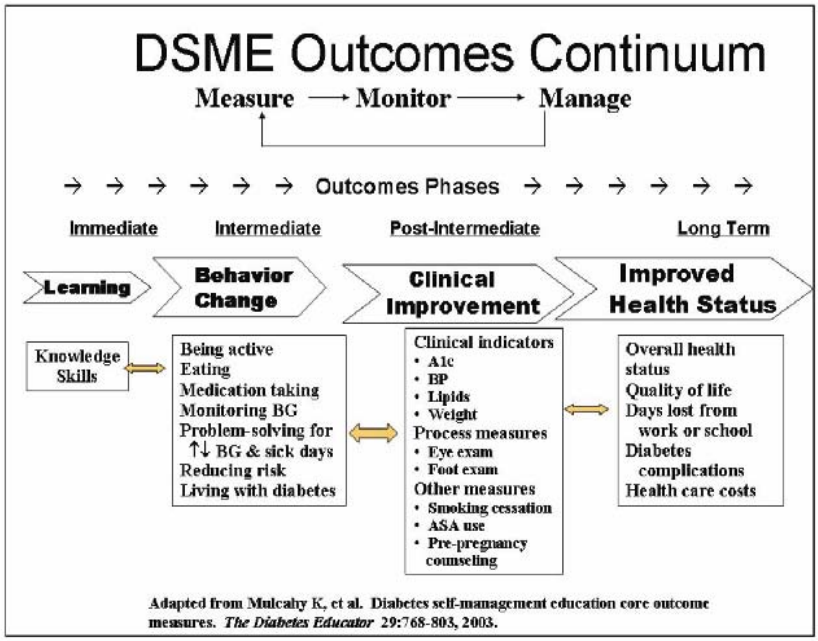
Diabetes is a chronic condition that affects physical and mental health and requires daily self-management of preventive care behaviors (Figure 4). The estimated time commitment recommended for preventive care is 143 minutes/day in individuals who have stable diabetes, take oral agents and self-monitor their blood glucose once daily (Russell, 2005). DSME develops problem-solving skills and self-management techniques for the best possible clinical outcomes. DSME builds a foundation for self-management that leads to improved preventive care practices and positive clinical outcomes.

DSME is a critical tool to control blood glucose levels which ultimately reduces microvascular complications in type 1 diabetes. The Diabetes Control and Complications Trial (DCCT), a 10-year clinical study that concluded in 1993, demonstrated that keeping blood glucose levels as close to normal as possible significantly slows the onset and progression of eye, kidney and nerve diseases caused by type 1 diabetes. The study demonstrated that any sustained lowering of the blood glucose is beneficial, even for individuals with a history of poor control. A follow-up study indicated that the reduction in risk for microvascular changes persisted for at least four years after the DCCT ended, despite increasing blood glucose levels.

DSME enables newly diagnosed individuals with type 2 diabetes to effectively start diabetes preventive care, essential for optimizing metabolic control, managing complications and maintaining a high quality of life. The United Kingdom Prospective Diabetes Study (UKPDS) and subsequent UKPDS Follow-Up Study 10 years later established that maintaining blood glucose to near normal levels for individuals with newly diagnosed type 2 diabetes provided a "legacy effect" for years to come. Blood glucose control reduced the risk of microvascular complications (eye disease, kidney disease and neuropathy) and the risk of heart attack.

The DSME Outcomes Continuum, from the American Association of Diabetes Educators (AADE), identifies measure, monitor and manage as a cyclical process for delivery of DSME. Through this process, the immediate outcome is learning, followed by subsequent outcomes of behavior change, clinical improvement and ultimately improved health status. This continuum addresses the full impact of DSME on individuals with diabetes. It is important to gather data and measure outcomes for the individual with diabetes as well as for groups or populations (Mulcahy, 2003). Aggregated data at the program or provider level can guide quality improvements for individual DSME programs.

Figure 4



Likewise, the self-reported preventive care practices of the Behavioral Risk Factor Surveillance System (BRFSS) can be linked to DSME through the DSME Outcomes Continuum. In addition, DSME curriculum content areas of the American Diabetes Association can be linked to the AADE7™ Self-Care Behaviors, and public health surveillance measures (Appendix 1). DSME initiates learning, knowledge and skills that facilitate behavior changes and improved preventive care practices. These behaviors can be measured through outcome or process measures. The improvement in preventive care practices included in the post-intermediate phase of clinical improvement manifests itself in improved quality of life, decreased complications and fewer days lost from work or school. Preventive care practices measured by BRFSS include self-monitoring blood glucose (SMBG), glycosylated hemoglobin (A1C), foot exams by health professionals, dilated eye exams and cholesterol checks.

DSME Improves Preventive Care Measures and Long-Term Health Outcomes

A variety of evidence demonstrates an association between Diabetes Self-Management Education and improved preventive care measures and health outcomes for individuals with diabetes. DSME is recommended by *The Guide to Community Preventive Services: What Works to Promote Health* (Norris, 2002). The Community Guide concludes DSME is effective when provided in a variety of community gathering places and can decrease A1C measurements by approximately two percentage points for adults with type 2 diabetes. The *Diabetes Initiative* of the Robert Wood Johnson Foundation demonstrated DSME is effective when provided in primary care settings or at community sites (Fisher, 2007).

DSME was associated with higher patient adherence to diabetes preventive care practices and resulted in lower average costs of patient care compared to costs associated with individuals with diabetes who did not receive DSME (Duncan 2009). The cost savings by patients receiving DSME resulted from fewer inpatient services. DSME provides persons with more affordable preventive diabetes care than inpatient services often necessary for those not receiving DSME (Brownson, 2009).

The National Standards for DSME (Appendix 2) published by the American Diabetes Association defines 10 standards for DSME programs. These standards include structure, staffing and process requirements for DSME programs. At least one of the instructors must be a registered nurse, registered dietitian or pharmacist. All DSME instructors must have recent educational and experiential preparation in diabetes management or must be a certified diabetes educator. If the patient's needs are outside the instructor's scope of practice and expertise, the DSME program must document that the patient's DSME needs are met by another educator.

The overall objectives of DSME are to support informed decision-making, promote diabetes preventive care behaviors, teach problem-solving skills, encourage active collaboration with the health care team, and improve clinical outcomes, health status and quality of life.

DSME includes clinical and community-based interventions and consists of the following elements:

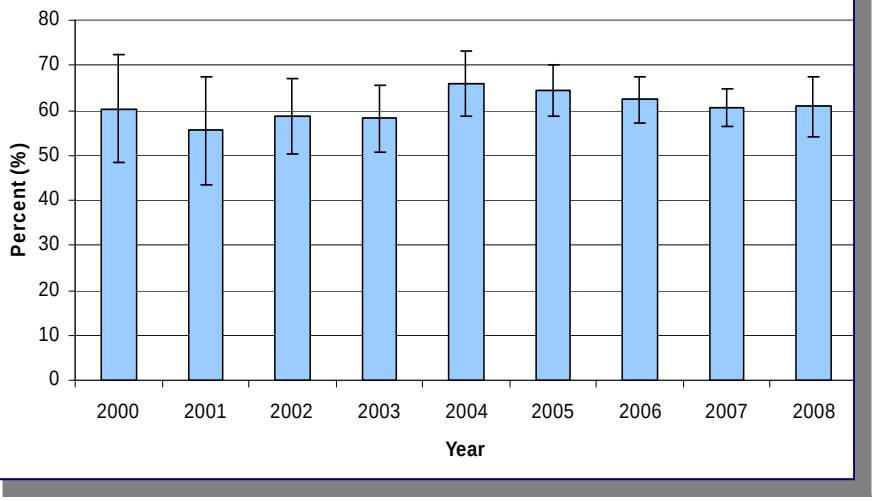
- Patient-centered, multi-disciplinary team approach to care
- An individual assessment and education plan developed collaboratively by the individual and educator(s) to direct the selection of educational interventions and self-management support strategies that are culturally appropriate and directed toward helping the individual achieve self-management goals
- A personalized follow-up plan developed collaboratively by the individual and educator(s) for ongoing self-management support
- Periodic follow-up and evaluation of progress toward the attainment of patient-defined clinical and behavioral goals and determination of the need for additional interventions and future reassessments
- Documentation in the education record of the assessment and education plan, intervention and outcomes

Medicare regulations stipulate DSME programs must be accredited by a national accreditation organization (NAO). Currently, there are three NAO's for DSME programs: American Diabetes Association (ADA), Indian Health Service (IHS), and American Association of Diabetes Educators (AADE). Each NAO recommends a curriculum consistent with their organization. Compliance with the National Standards for DSME is essential for reimbursement. Accredited DSME programs contribute to improved preventive care behaviors.

Diabetes Self-Management Education in Colorado

Data collected through Colorado's BRFSS supported the need for increasing the availability of DSME classes or services to individuals with diabetes throughout the state. The percentage of DSME in Colorado has not improved since 2000 when this BRFSS measure was initiated. Figure 5 shows the percentage of adults with diabetes in Colorado who reported having ever taken a class on how to manage their diabetes peaked in 2004 (65.9 percent) and declined through 2007, with a slight increase in 2008. In 2008, only 60.8 percent of adults with diabetes reported ever taking a course on how to manage their diabetes.

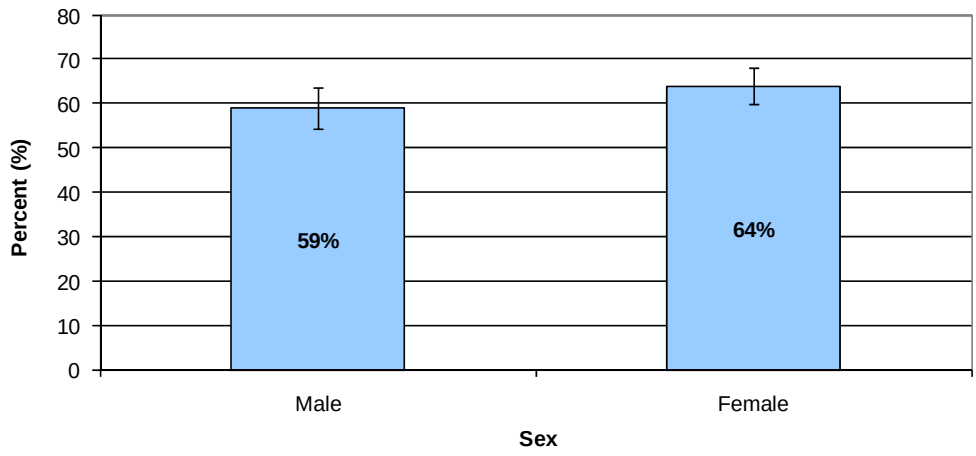
Figure 5: Adults with diabetes who reported having EVER taken a class on how to manage diabetes, Colorado, 2000-2008



Source: Colorado Behavioral Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment

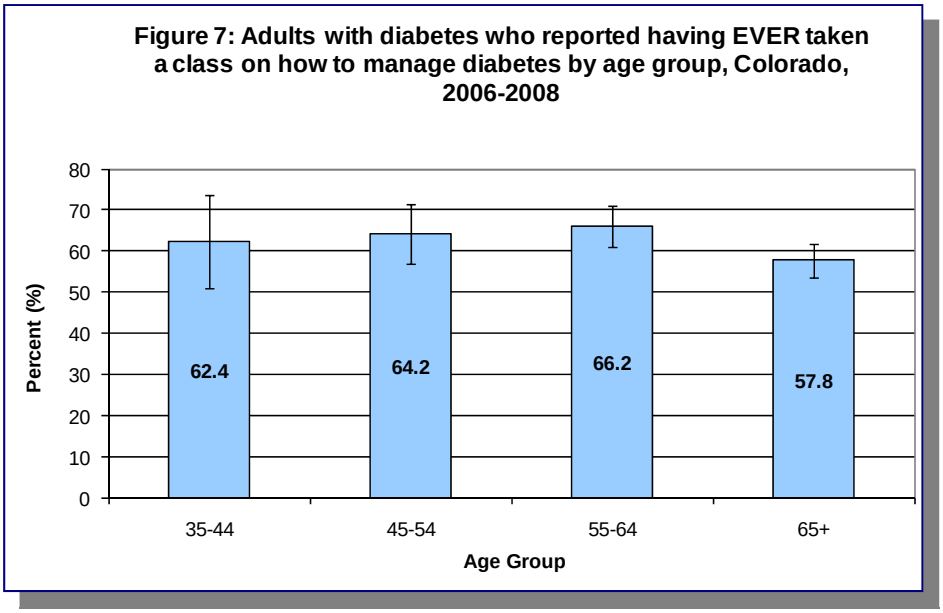
Among adults with diabetes in Colorado from 2006-2008, a higher percentage of females than males had ever taken a class on how to manage diabetes themselves (64 percent and 59 percent, respectively); however, the difference was not statistically significant (Figure 6).

Figure 6: Adults with diabetes who reported having EVER taken a class on how to manage diabetes by sex, Colorado, 2006-2008



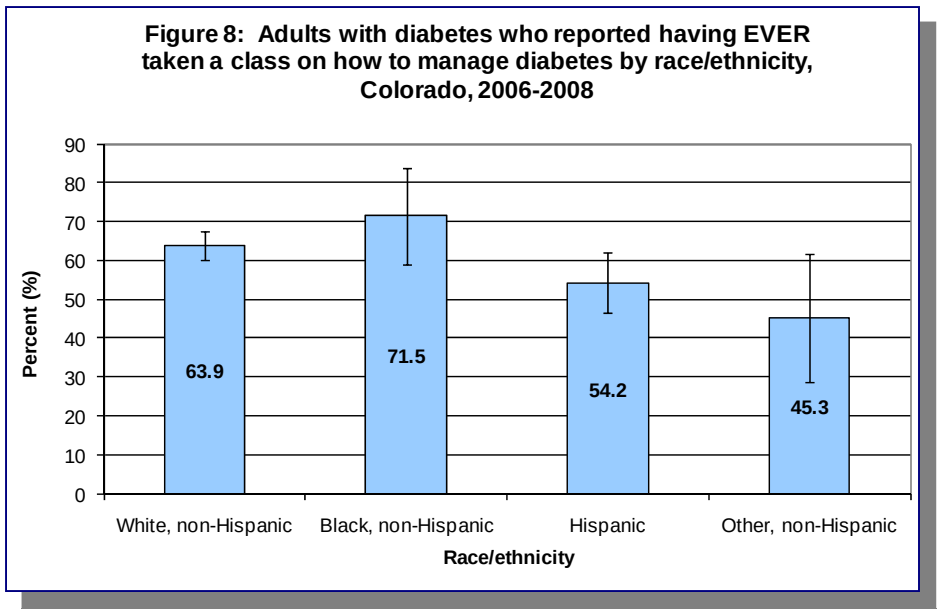
Source: Colorado Behavioral Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment

There were no statistically significant differences between the age groups for self-management education classes (Figure 7). The oldest age group, age 65 and older, reported the lowest percentage of participation in a self-management class. Younger age groups (18-24 and 25-34) were not represented because the number of Respondents was too small to produce reliable estimates.



Source: Colorado Behavioral Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment

Figure 8 shows the racial/ethnic distribution among persons with diabetes who reported ever having taken a class on diabetes self-management. Black, non-Hispanics had the highest percentage of persons with diabetes who ever have taken a class on how to manage their diabetes (71.5 percent). The Other, non-Hispanic population had the lowest percentage of persons with diabetes who ever have taken a diabetes self-management class. There were no statistically significant differences between the four racial/ethnic groups.

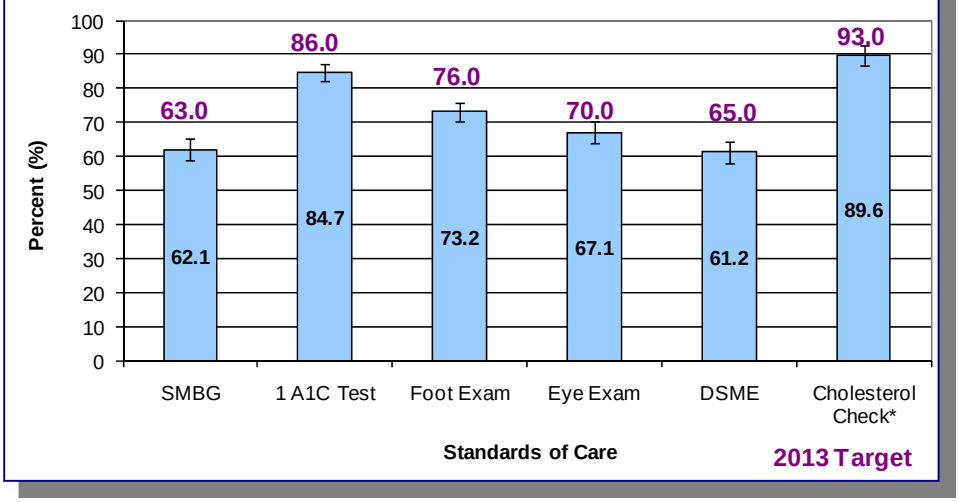


Source: Colorado Behavioral Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment

DSME initiates knowledge and skills that facilitate behavior changes and improved preventive care practices while decreasing long-term complications. Regularly self-monitoring blood glucose (SMBG) benefits individuals with diabetes by identifying blood glucose trends. Individuals can review historical blood glucose data, identify trends and make changes to meet desired goals (Klonoff, 2007). SMBG is necessary to achieve recommended A1C values. For every percentage point drop in A1C values (for example, from eight percent to seven percent), the risk of diabetic eye, nerve and kidney disease is reduced by 40 percent. Therefore, lowering A1C reduces microvascular complications in persons with diabetes (both type 1 and type 2). Comprehensive foot care programs and annual foot exams reduce amputation rates by 45 percent to 85 percent. Detecting and treating diabetes-related eye disease with laser therapy reduces the development of severe vision loss by an estimated 50 percent to 60 percent. Improved control of LDL cholesterol reduced cardiovascular complications by 20 percent to 50 percent in persons with diabetes (CDC, 2008).

Among adults with diabetes, 61.2 percent reported ever having taken a diabetes self-management class (Figure 9). Figure 9 shows the percentage of adults with diabetes who perform various preventive care practices. SMBG was the least reported preventive care practice (62.1 percent) followed by an annual eye exam (67.1 percent), an annual foot exam (73.2 percent), at least one A1C test within the last year (84.7 percent) and an annual cholesterol check (89.6 percent). DSME increases awareness about these preventive care practices in an effort to increase the number of persons with diabetes who perform these activities. The Colorado long-term targets for these BRFSS measures are indicated in **purple** in Figure 9.

Figure 9: Preventive care practices performed by adults with diabetes, Colorado, 2006-2008



*2007 data only (asked on BRFSS every other year)
SMBG - self-monitoring blood glucose daily
A1C - receives an A1C test at least once annually
Foot exam – receives a foot exam by a health professional at least once annually
Eye exam – receives a dilated eye exam at least once annually by a health professional
Diabetes Class – ever taken a class on managing your diabetes
Cholesterol check – had cholesterol checked in the past year
Source: Colorado Behavioral Risk Factor Surveillance System, Health Statistics Section,
Colorado Department of Public Health and Environment

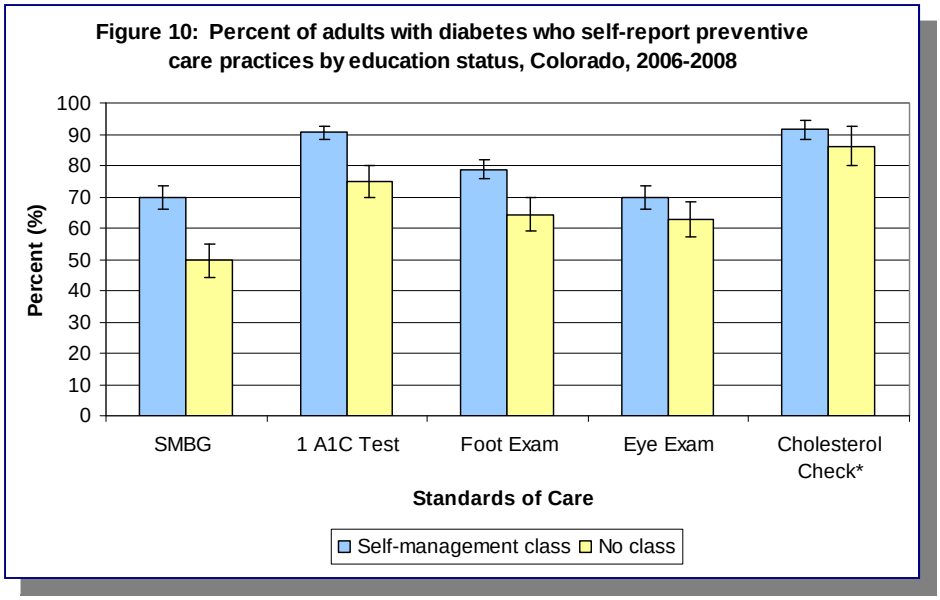
A1C - receives an A1C test at least once annually
Foot exam – receives a foot exam by a health professional at least once annually

Table 2 shows Colorado baseline data for each of the preventive care practices compared to national 2007 data, Healthy People 2010 goals, and long-term targets. Future Colorado BRFSS data will be collected annually, aggregated as available and evaluated during the next several years using these defined baseline and target values.

Table 2

Baseline data and target BRFSS measures for long-term outcomes				
	Colorado 2006-2008 Baseline	United States 2007	Healthy People 2010	Colorado Long-Term Targets
SMBG	62.1%	63.2%	61%	63%
A1C	84.7%	N/A	65%	86%
Foot Exam	73.2%	67.9%	91%	76%
Eye Exam	67.1%	67.9%	76%	70%
Diabetes Class	61.2%	55.4%	60%	65%
Cholesterol	89.6%*	N/A	N/A	93%

*2007 data only (asked on BRFSS every other year)
SMBG - self-monitoring blood glucose daily
A1C - receives an A1C test at least once annually
Foot exam – receives a foot exam by a health professional at least once annually
Eye exam – receives a dilated eye exam at least once annually by a health professional
Diabetes Class – ever taken a class on managing your diabetes
Cholesterol check – had cholesterol checked in the past year
Source: Colorado and United States Behavioral Risk Factor Surveillance System



*2007 data only (asked on BRFSS every other year)
SMBG – self-monitoring blood glucose daily
A1C – receives an A1C test at least once annually
Foot exam – receives a foot exam by a health professional at least once annually
Eye exam – receives a dilated eye exam at least once annually
Cholesterol check – had cholesterol checked in the past year
Source: Colorado Behavioral Risk Factor Surveillance System, Health Statistics Section,

Figure 10 shows preventive care practices performed by adults with diabetes who ever had taken a diabetes class versus adults with diabetes who had not taken a diabetes class. For all preventive care practices, adults who had taken a class were more likely than those who had not taken a class to perform each preventive care practice. These differences were statistically significant for daily SMBG, receipt of at least one A1C test per year and receipt of a foot exam by a health professional within the past year. There were no significant differences between the two groups for receipt of dilated eye exam and cholesterol check within the past year.

Summary

The DSME needs assessment is based on BRFSS data and healthcare cost savings, improvement in preventive care practices and reduction of long-term health complications resulting from DSME. Diabetes prevalence in Colorado has more than doubled in the past 15 years. The prevalence for diabetes markedly escalated beginning at age 55 for all race/ethnicities (2005-2007). DSME initiates knowledge and skills that facilitate behavior changes and improved preventive care practices while decreasing long-term complications. Preventive care practices measured by BRFSS include self-monitoring blood glucose (SMBG), glycosylated hemoglobin (A1C), foot exams by health professionals, dilated eye exams and cholesterol checks. Colorado baseline data for each of the preventive care practices have identified baseline values in 2007 and long-term targets. Future Colorado BRFSS data will be collected annually, aggregated as available and evaluated during the next several years using these defined baseline and target values.

METHODOLOGY, RESULTS AND LIMITATIONS

Work Group Formation

Methods

The focus of the work group was to identify DSME resources, gaps and regions in Colorado with the greatest need and existing opportunities and recommended strategies. Improving access to quality DSME, supporting community-based DSME and building networks to connect DSME programs with the healthcare system are key elements to improving diabetes self-management among Coloradans with diabetes.

Work group memberships were voluntary and open to anyone in Colorado with an interest in diabetes self-management education. Work group members were invited to attend meetings consistent with their expertise, talent and interest in providing input on populations or organizations represented. The Colorado Diabetes Prevention and Control program (DPCP) of the Colorado Department of Public Health and Environment (CDPHE) provided leadership, organization, data support and financial support to the DSME work group. The Epidemiology, Planning and Evaluation Branch (EPE) of CDPHE provided assistance with the collection and interpretation of data. In addition, the Health Statistics Section of CDPHE compiled and analyzed data from the BRFSS and Colorado death certificates.

The workgroup included members from the following organizations:

- The University of Colorado Denver School of Pharmacy
- Por tu Familia Program of the American Diabetes Association
- The Center for African American Health (CAAH)
- Colorado Asian Health for Education and Promotion
- State Unit on Aging
- Denver Indian Family Health Services (DIFHS)
- Consortium for Older Adult Wellness (COAW)

Six work group meetings were convened between January and November 2009. Meetings were held through personal attendance, teleconferencing and webinars to facilitate participation for Colorado's rural partners.

Limitations

Membership of the work group lacked representation from Native Americans representing tribes in the Southwest corner of Colorado, community health centers (CHCs), and primary care providers. Furthermore, every region of the state was not represented.

Geographic Information System Maps

Methods

A Geographic Information System (GIS) was used to plot data reviewed during the needs assessment and produce selected maps. Maps were provided of existing diabetes education and support resources in relation to the burden of diabetes and self-management support across regions of Colorado. Maps included data on the location of American Diabetes Association (ADA) and American Association of Diabetes Educators (AADE) DSME programs, community health centers, pharmacy-based student clinics, certified diabetes educators (CDEs) and registered dietitians (RDs). The maps also included data on primary, secondary and tertiary diabetes prevention indicators described in Tables 4 and 5 on pages 24 and 25.

GIS maps highlighted the locations of resources and gaps of services to assist in identification of regions with greatest need for DSME.

Other GIS maps showing the percent of population (all ages) in poverty (Appendix 3) and distribution of population (race/ethnicity) by census block groups (Appendix 4) across the state and provide additional context in which to interpret regional data.

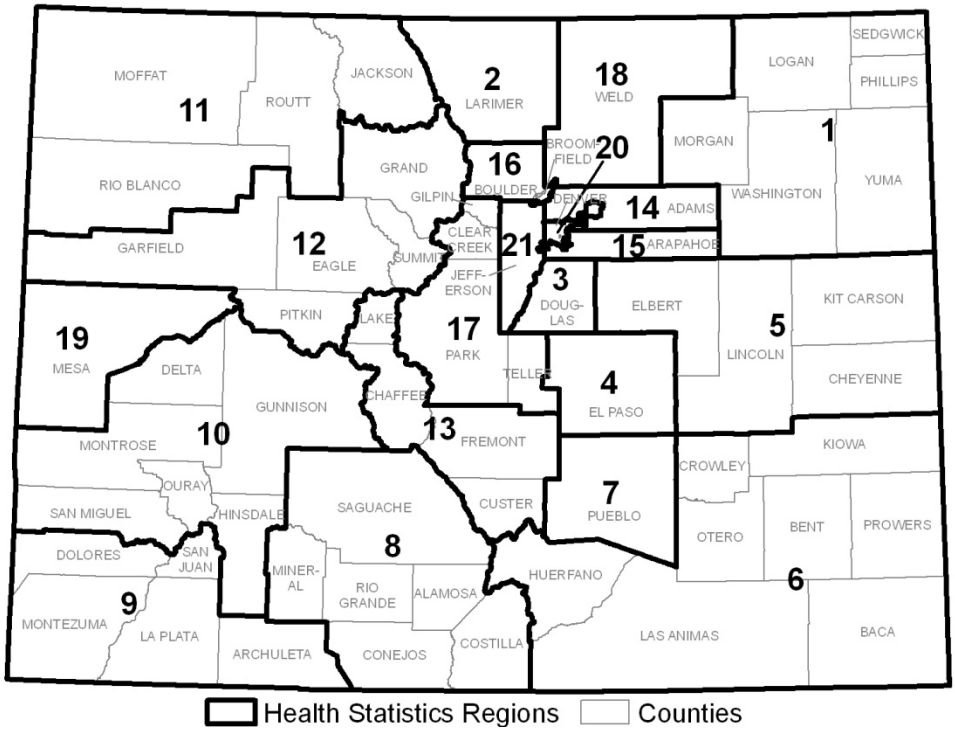
Population-based Data Collection

Methods

The work group analyzed data by 21 Health Statistics Regions displayed in black and white or colored map (Appendix 5). The Health Statistics Section at the Colorado Department of Public Health and Environment developed 21 Heath Statistics Regions to overcome issues associated with small sample sizes in less populated counties.

Map 1

Colorado Health Statistics Regions and counties



Data analysis using the 21 Health Statistics Regions is common with a variety of data sets housed in the Health Statistics Section of the Colorado Department of Public Health and Environment (CDPHE). Map 1 displays the 21 Health Statistics Regions and their respective counties.

Data for the 21 Health Statistics Regions were collected from the Colorado Department of Public Health and Environment's Regional Health Profiles Web site (http://www.cdphe.state.co.us/hs/regionaldata/regionaldata.html), the Colorado BRFSS housed in the Health Statistics Section at CDPHE, the Health Statistics Section from the National Center for Health Statistics, and the Colorado certificate of death data housed in the Vital Statistics Unit of the Health Statistics Section at CDPHE.

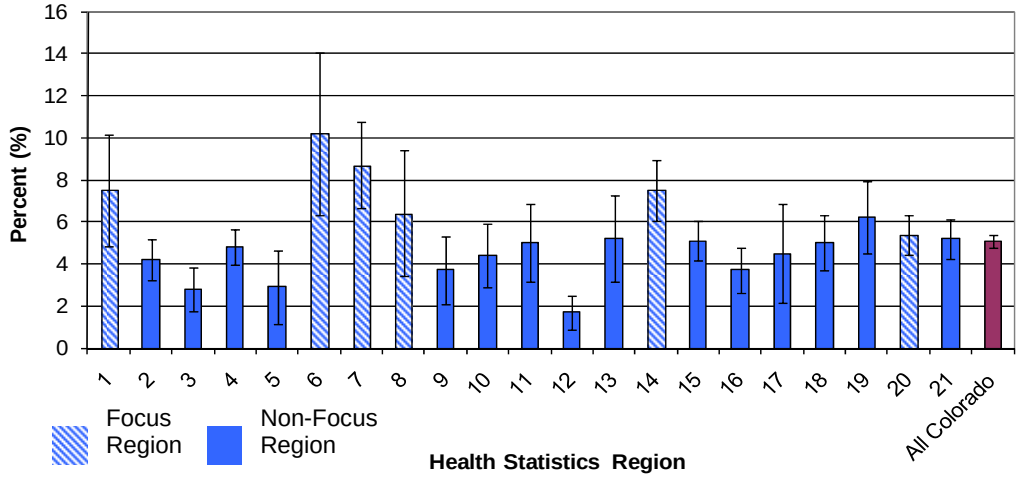
Selection of Focus Regions

Table 3: Colorado counties included in selected 6 focus regions

Region	Counties
Region 1	Morgan, Logan, Sedgwick, Phillips, Yuma, Washington
Region 6	Crowley, Kiowa, Otero, Bent, Prowers, Huerfano, Las Animas, Baca
Region 7	Pueblo
Region 8	Saguache, Mineral, Rio Grande, Alamosa, Conejos, Costilla
Region 14	Adams
Region 20	Denver

Six focus regions (Regions 1, 6, 7, 8, 14 and 20) were selected as having the highest need for DSME using a ranking process based on secondary and tertiary prevention. The counties included in the six focus regions are indicated in Table 3. The data were split into two categories to represent 1) secondary and tertiary prevention indicators and 2) primary prevention indicators for each of the 21 Health Statistics Regions. Indicators for secondary and tertiary prevention included 1) prevalence of diabetes among adults; 2) estimated counts of adults with diabetes; 3) diabetes mortality rates; 4) prevalence of adults with diabetes who received DSME; and 5) prevalence of preventive care practices (e.g. eye exam, foot exam, A1C) recommended for persons with diabetes. The Appendix includes additional details of the selection process for DSME focus regions (Appendix 6). In the selection process, the prevalence of diabetes was considered the most important indicator followed by the prevalence of persons with diabetes who had received DSME.

Figure 11: Percent of adults with diabetes by Health Statistics Region, Colorado, 2005-2007



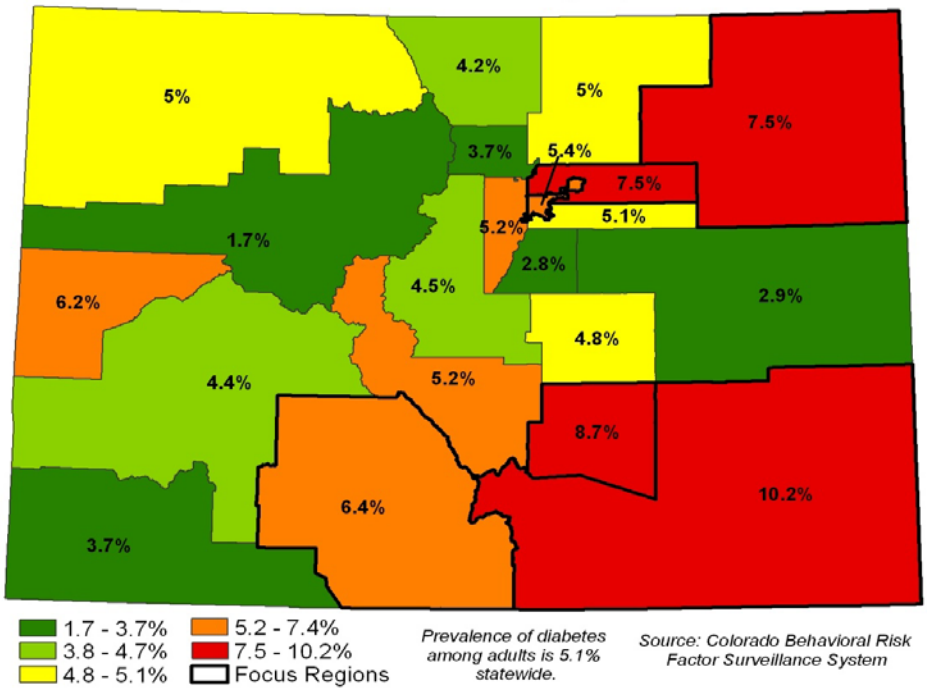
The prevalence of diabetes among adults in Colorado was 5.1 percent (2005-2007). Regions 6, 7 and 14 had a diabetes prevalence that was statistically significantly higher than the state prevalence.

Source: Colorado Behavioral Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment

Map 2 illustrates the prevalence of diabetes among adults in each region. Both the Northeast and the Southeast corners of the state have a high prevalence of diabetes.

Map 2

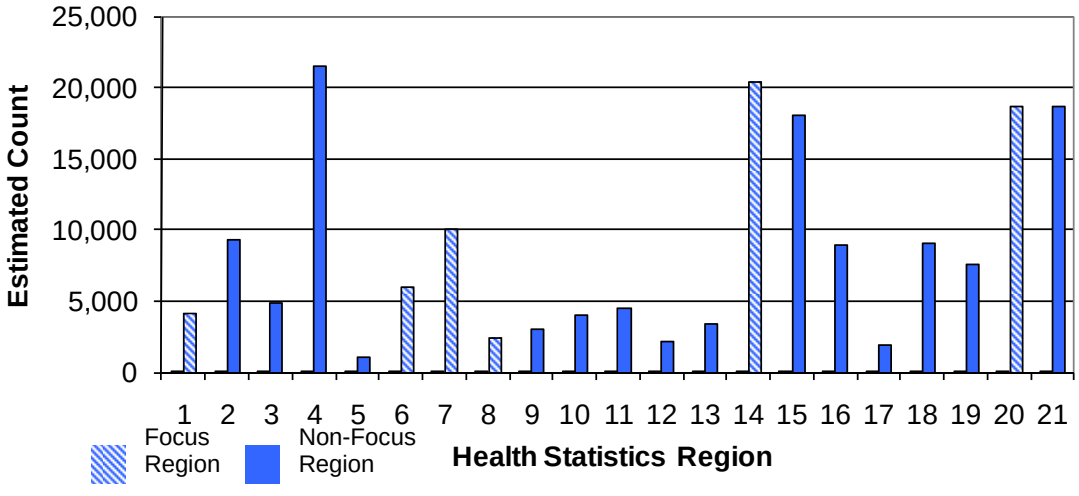
Prevalence of Diabetes among Adults by Colorado Health Statistics Region, 2005-2007



Source: Colorado Behavioral Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment.

Figure 12 shows the one-year estimated counts of adults with diabetes in each region. These estimates are based on the prevalence within each region for 2005-2007. These counts are influenced by population size. An estimated 180,000 adults in Colorado had diagnosed diabetes (data not shown).

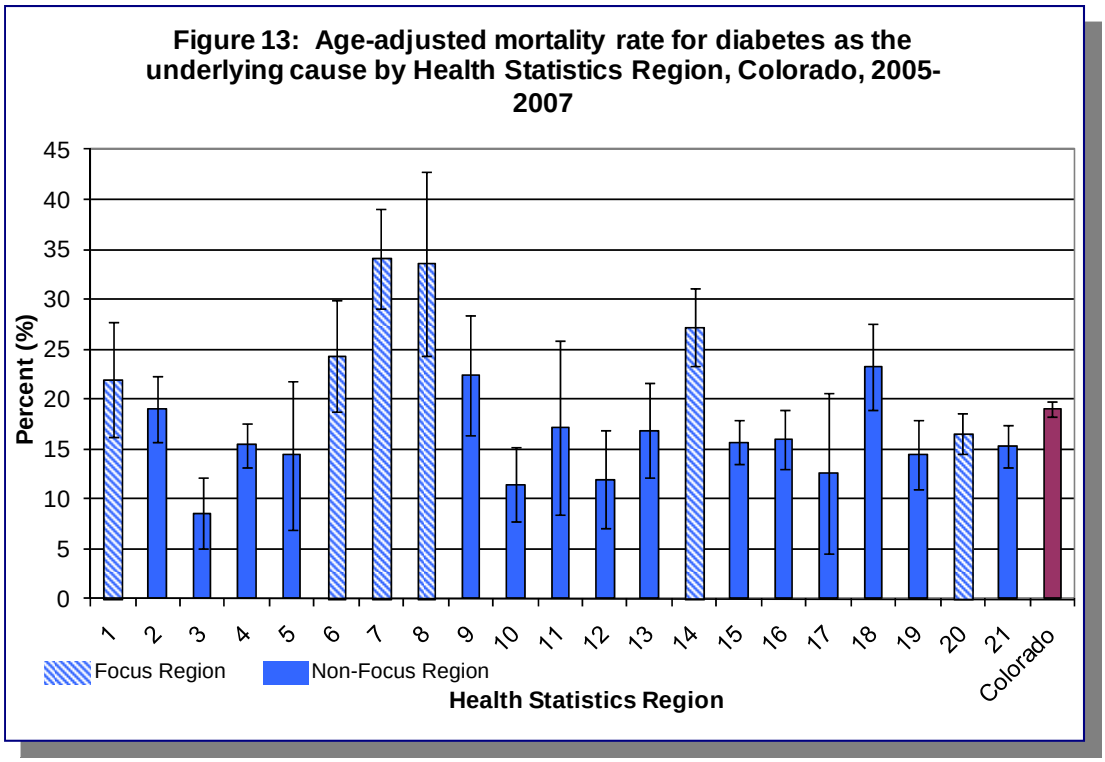
Figure 12: Estimated count of adults with diabetes by Health Statistics Region, Colorado, one-year estimate



Source: Colorado Behavioral Risk Factor Surveillance System, Health Statistics Section, Colorado Department of Public Health and Environment.
One-year rounded estimate is based on prevalence data from 2005-2007 from BRFSS.

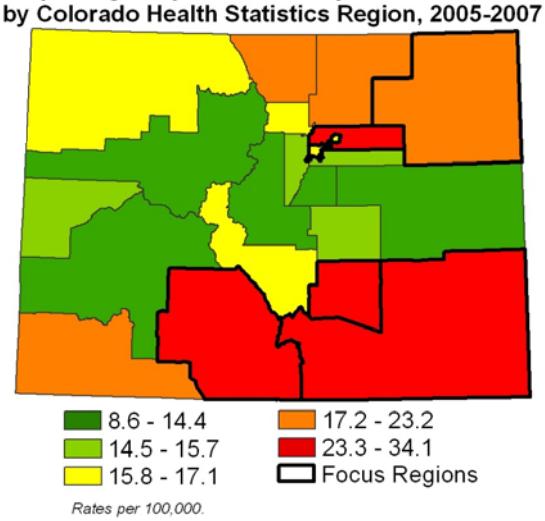
The age-adjusted mortality rate for diabetes as the underlying cause of death for each region is shown in Figure 13 and Map 3. The age-adjusted mortality rate due to diabetes for Colorado during 2005-2007 was 18 per 100,000 population. The mortality rate for diabetes in regions 6, 7, 8, 14, and 18 were statistically significantly higher than the diabetes mortality rate for the state. Map 3 shows that the mortality rates are higher in the Southern and Southeast areas of Colorado.

Figure 13: Age-adjusted mortality rate for diabetes as the underlying cause by Health Statistics Region, Colorado, 2005-2007



Source: Vital Statistics Unit, Health Statistics Section,
Colorado Department of Public Health and Environment
Rates are per 100,000 population and are adjusted to the 2000 U.S. population using the direct method.

Map 3 Age-Adjusted Mortality due to Diabetes by Colorado Health Statistics Region, 2005-2007



Source: Vital Statistics, Health Statistics Section,
Colorado Department of Public Health and Environment

Table 4 presents indicators for secondary and tertiary prevention, including prevalence of diabetes among adults, estimated counts of adults with diabetes, age-adjusted mortality rates for diabetes, prevalence of diabetes self-management education among adults with diabetes and the prevalence of preventive care practices recommended for persons with diabetes. Table 5 presents the indicators for primary prevention, including diabetes risk factors such as physical inactivity, overweight, obesity, current smokers, lack of health insurance and low fruit and vegetable consumption.

Table 4: Secondary and tertiary prevention indicators reviewed during selection of the focus regions

	Morgan, Logan, Sedgwick, Phillips, Yuma, Washington	Larimer	Douglas	El Paso	Elbert, Lincoln, Kit Carson, Cheyenne	Crowley, Kiowa, Otero, Bent, Prowers, Huerfano, Las Animas, Baca	Pueblo	Saguache, Mineral, Rio Grande, Alamosa, Conejos, Costilla	Dolores, Montezuma, La Plata, San Juan, Archuleta	Montrose, Delta, Gunnison, Hinsdale, Ouray, San Miguel	Moffat, Rio Blanco, Routt, Jackson	Garfield, Pitkin, Eagle, Grand, Summit	Lake, Chaffee, Fremont, Custer	Adams	Arapahoe	Boulder, Broomfield	Park, Teller, Clear Creek, Gilpin	Weld	Mesa	Denver	Jefferson	All
Region number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	Colorado
Diabetes prevalence, 2005-2007 (%)	7.5	4.2	2.8	4.8	2.9	10.2	8.7	6.4	3.7	4.4	5.0	1.7	5.2	7.5	5.1	3.7	4.5	5.0	6.2	5.4	5.2	5.1
Estimated counts of persons with diabetes, (one year estimate)~	4,200	9,300	4,900	21,500	1,000	6,000	10,100	2,500	3,000	4,000	4,400	2,100	3,400	20,500	18,000	8,900	1,900	9,100	7,600	18,800	18,700	180,000
Age-adjusted mortality due to diabetes, 2005-2007^	22.0	19.0	8.6	15.4	14.4	24.4	34.1	33.6	22.4	11.5	17.1	12.0	16.9	27.3	15.7	16.0	12.6	23.2	14.5	16.6	15.3	18.0
% of adults with diagnosed diabetes who received diabetes self-management education, 2006-2008	*	71.6	*	80.0	*	*	62.9	*	*	*	*	*	*	55.9	54.1	46.1	*	61.2	71.6	55.8	65.5	61.2
% adults with diabetes who received all four self-care measures vs not all four, 2006-2008^^	*	30.6	*	28.6	*	*	28.8	*	*	*	*	*	*	30.2	30.3	34.0	*	31.8	37.2	23.1	36.8	30.6
% of adults with diabetes who self-monitor blood glucose daily, 2006-2008	*	66.1	*	66.9	*	*	61.2	*	*	*	*	*	*	63.7	63.6	57.9	*	63.7	72.7	56.2	59.0	62.1
% of adults with diabetes who had an A1C test in past year, 2006-2008	*	91.3	*	85.9	*	*	86.2	*	*	*	*	*	*	73.2	93.9	78.2	*	83.0	90.5	76.3	91.6	84.7
% of adults with diabetes who had a dilated eye exam in past year, 2006-2008	*	68.2	*	63.2	*	*	63.3	*	*	*	*	*	*	71.8	65.9	75.9	*	71.4	59.7	64.3	73.4	67.1
% of adults with diabetes who had a foot exam by a health professional in past year, 2006-2008	*	69.9	*	72.4	*	*	78.7	*	*	*	*	*	*	67.8	78.7	78.8	*	69.3	87.2	68.8	78.9	73.2
% of adults with diabetes who had their cholesterol checked in past year, 2006-2008	*	*	*	89.2	*	*	*	*	*	*	*	*	*	95.2	91.5	*	*	*	*	82.6	87.7	89.6
Source: Colorado Behavioral Risk Factor Surveillance System and Vital Statistics, Health Statistics Section, CDPHE																						
% White	75.0	86.4	86.7	75.3	87.0	61.4	57.4	52.2	80.9	85.1	90.5	77.2	80.8	57.3	67.5	81.1	91.8	69.8	85.7	51.4	81.2	72.2
% Latino	22.2	9.3	6.7	11.5	9.0	32.3	36.7	42.9	9.8	12.2	7.4	20.2	12.8	33.6	15.9	12.3	4.9	26.4	11.0	32.5	12.8	18.7
% Black	1.5	1.4	2.1	8.1	2.5	2.7	2.7	1.1	0.8	0.8	0.6	0.9	4.0	3.9	10.6	1.4	1.3	1.2	1.1	10.8	1.8	4.7
% Asian/Pacific Islander	0.5	2.2	4.0	3.9	0.7	0.9	1.1	0.9	0.7	0.7	0.7	1.0	0.7	3.7	5.2	4.4	0.9	1.6	0.9	3.8	3.1	3.1
% American Indian/Native Alaskan	0.9	0.9	0.6	1.3	0.8	2.8	2.1	3.0	7.9	1.3	0.8	0.7	1.8	1.5	0.9	0.8	1.1	1.1	1.3	1.5	1.1	1.3
Source: CDC/NCHS 2007-based, bridged-race population estimates, 2007																						

~Estimated counts are *rounded* frequencies weighted to the population of Colorado by sex and age, these are approximate one year estimates using data from 2005-2007

Weighted N from three aggregated years/3 years = one year estimated count of persons with diabetes (these should only be used for planning purposes)

^Age-adjusted mortality rates are per 100,000 population and standardized using the 2000 US standard population (underlying cause of death)

* Indicates too few events to display per the data suppression policy of data source with N < 50 responses

^^Self-monitoring blood glucose daily, yearly A1C test, yearly dilated eye exam, yearly foot exam completed by a health professional

Prepared by the Colorado Diabetes Prevention and Control Program, Prevention Services Division, Colorado Department of Public Health and Environment, 2009

Table 5: Primary prevention indicators reviewed during selection of the focus regions

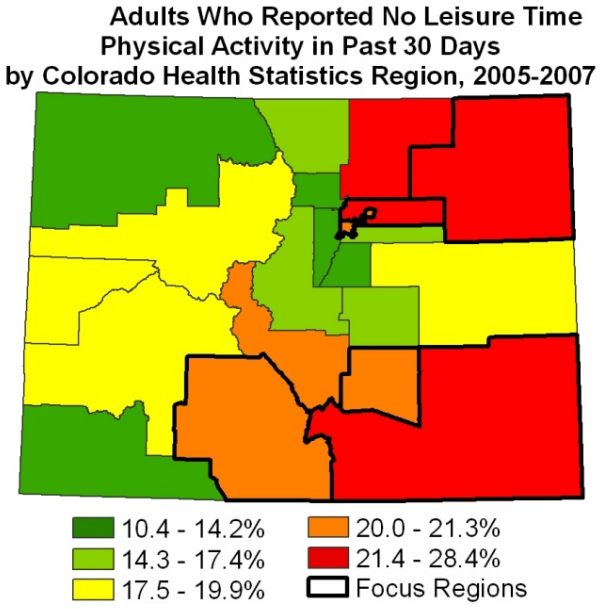
	Morgan, Logan, Sedgwick, Phillips, Yuma, Washington	Larimer	Douglas	El Paso	Elbert, Lincoln, Kit Carson, Cheyenne	Crowley, Kiowa, Otero, Bent, Prowers, Huerfano, Las Animas, Baca	Pueblo	Saguache, Mineral, Rio Grande, Alamosa, Conejos, Costilla	Dolores, Montezuma, La Plata, San Juan, Archuleta	Montrose, Delta, Gunnison, Hinsdale, Ouray, San Miguel	Moffat, Rio Blanco, Routt, Jackson	Garfield, Pitkin, Eagle, Grand, Summit	Lake, Chaffee, Fremont, Custer	Adams	Arapahoe	Boulder, Broomfield	Park, Teller, Clear Creek, Gilpin	Weld	Mesa	Denver	Jefferson	All
Region number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	Colorado
2007 population total	72,376	283,977	276,620	584,923	38,589	75,833	155,724	47,894	90,437	99,081	44,894	167,210	77,238	425,379	552,592	346,495	54,435	244,513	140,414	592,577	538,323	4,909,524
20-44 years	21,830	106,540	106,056	217,817	12,321	23,046	52,122	14,461	29,381	31,744	15,585	66,183	26,281	163,945	195,629	132,329	15,867	95,343	46,479	229,655	175,724	1,778,339
45-64 years	19,166	73,335	66,977	144,150	12,013	21,218	38,039	12,758	26,771	27,266	13,990	45,826	22,260	96,176	150,844	93,410	20,075	52,508	35,682	135,650	165,269	1,273,383
65+ years	10,819	29,543	13,276	52,936	4,356	12,109	22,663	6,620	11,010	14,318	3,640	11,016	11,877	30,206	51,052	27,461	5,387	20,611	20,278	59,430	61,297	479,905
Source: State Demography Office, Colorado Department of Local Affairs																						
% White	75.0	86.4	86.7	75.3	87.0	61.4	57.4	52.2	80.9	85.1	90.5	77.2	80.8	57.3	67.5	81.1	91.8	69.8	85.7	51.4	81.2	72.2
% Latino	22.2	9.3	6.7	11.5	9.0	32.3	36.7	42.9	9.8	12.2	7.4	20.2	12.8	33.6	15.9	12.3	4.9	26.4	11.0	32.5	12.8	18.7
% Black	1.5	1.4	2.1	8.1	2.5	2.7	2.7	1.1	0.8	0.8	0.6	0.9	4.0	3.9	10.6	1.4	1.3	1.2	1.1	10.8	1.8	4.7
% Asian/Pacific Islander	0.5	2.2	4.0	3.9	0.7	0.9	1.1	0.9	0.7	0.7	0.7	1.0	0.7	3.7	5.2	4.4	0.9	1.6	0.9	3.8	3.1	3.1
% American Indian/Native Alaskan	0.9	0.9	0.6	1.3	0.8	2.8	2.1	3.0	7.9	1.3	0.8	0.7	1.8	1.5	0.9	0.8	1.1	1.1	1.3	1.5	1.1	1.3
Source: CDC/NCHS 2007-based, bridged-race population estimates, 2007																						
% adults age 25+ with an associate degree or higher	22.4	46.7	59.3	41.2	28.3	22.2	26.2	25.1	36.0	30.2	36.1	45.7	23.1	24.4	44.5	*	41.3	29.0	29.0	39.4	43.7	40
% of adults with health care coverage	83.7	86.6	92.5	85.1	87.3	80.9	80.9	72.7	75.3	67.9	85.4	73.2	75.5	81.2	87.1	87.1	84.3	77.6	80.8	78.8	88.3	83.1
% of adults who reported their health was fair or poor	19.0	10.9	6.6	10.7	10.1	21.7	16.2	15.8	11.3	12.8	10.6	11.5	14.4	16.5	11.8	9.0	6.9	15.1	14.0	17.5	9.6	12.5
% of adults who reported no leisure time physical activity in past 30 days	27.3	14.4	10.5	16.7	19.2	28.4	21.3	20.1	13.0	18.9	14.2	17.9	20.0	22.0	17.4	10.4	16.1	22.3	19.9	20.8	13.0	17.3
% of adults who were overweight (BMI 25-29)	43.1	37.6	35.3	35.3	37.6	33.3	36.9	42.5	37.7	31.5	44.1	34.7	39.3	38.9	36.8	32.5	40.5	41.3	36.6	35.6	35.3	36.6
% of adults who were obese (BMI 30+)	22.7	15.2	15.1	18.3	16.9	27.4	26.0	18.2	15.3	16.4	12.4	11.4	17.3	25.4	19.1	13.0	14.3	23.9	20.1	19.4	17.4	18.4
% of adults who were current smokers	17.9	17.0	8.0	20.3	21.1	24.7	23.7	19.9	22.5	20.4	16.9	15.4	20.7	23.3	18.8	13.4	20.7	17.7	19.5	20.5	19.0	18.8
% of adults who ate 5+ servings of fruits and vegetables per day	16.6	32.4	23.3	26.0	29.4	22.6	17.8	17.3	24.6	25.7	27.8	30.9	23.5	22.5	25.6	32.0	24.4	21.9	25.0	24.7	25.1	30.6

Source: Colorado Behavioral Risk Factor Surveillance System, 2005-2007, Health Statistics Section, CDPHE; 2000 Census, United States Census Bureau (associate degree data)

*** Indicates too few events to display per the data suppression policy of data source with N < 50 responses**

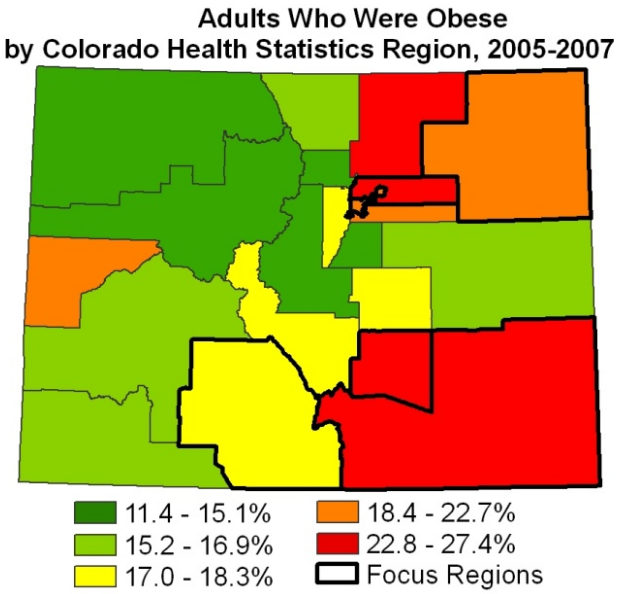
Prepared by the Colorado Diabetes Prevention and Control Program, Prevention Services Division, Colorado Department of Public Health and Environment, 2009

Map 4



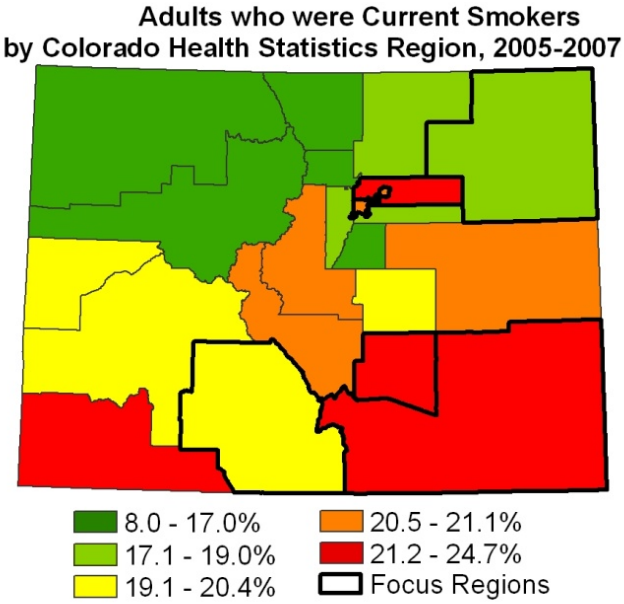
Source: Colorado Behavioral Risk Factor Surveillance System

Map 5



Adult obesity is defined as a Body Mass Index (BMI) of 30 or more.
Source: Colorado Behavioral Risk Factor Surveillance System

Map 6

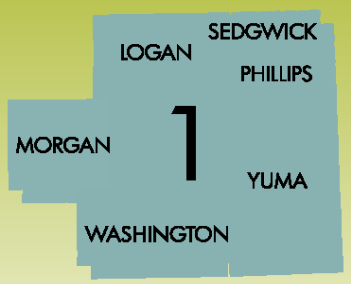


Source: Colorado Behavioral Risk Factor Surveillance System

Maps 4 through 6 displays select primary prevention indicators that were reviewed during the selection of the focus regions. The focus regions are outlined in a thick black line. The maps confirm the selected focus regions also have a high prevalence of risk factors for diabetes.

Characteristics of Six Focus Regions

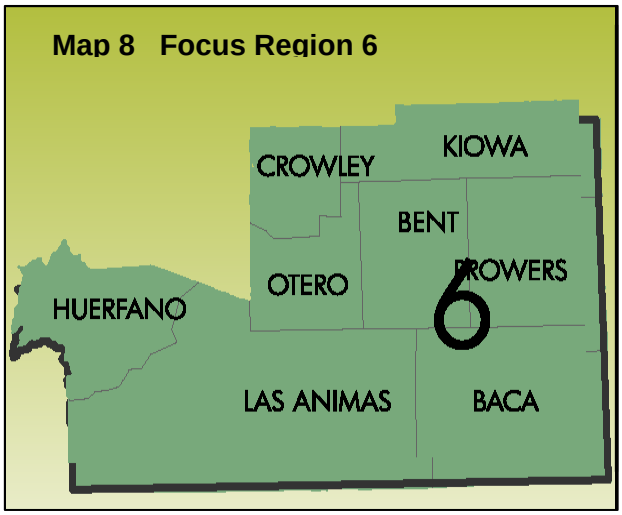
Map 7 Focus Region 1



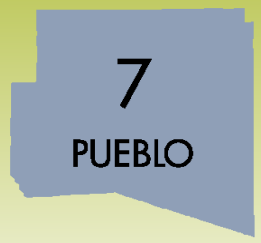
Focus Region 1 is comprised of six counties in Northeast Colorado. Three of the counties are considered rural and three frontier (Appendix 7). The region has a high prevalence of physical inactivity and obesity and half of the counties in the region are below 300 percent federal poverty level based on the 2000 Census. There are DSME programs in Logan County (Sterling) and in Morgan County (Brush). Two community health centers, Salud in Morgan County (Fort Morgan) and Logan County (Sterling), provide migrant and dental services. Washington, Yuma and Phillips counties are served by neighboring community health centers. Sedgwick is without easy access to a community health center. One pharmacy student-based DSME clinic is available in Logan County (Sterling), at Barnes Pharmacy. The region has limited certified diabetes educators and registered dietitians (Map 10).

Focus Region 6 is comprised of eight counties in Southeast Colorado. Three of the counties are considered rural and five frontier (Appendix 7). The diabetes prevalence and the age-adjusted diabetes mortality rate in this region are statistically significantly higher than the prevalence and the mortality rate for the rest of the state. The region has no DSME programs. Four community health centers provide migrant and dental services in four different towns and counties. Valley-Wide Community Health Centers serves Otero County (Rocky Ford and La Junta) and Bent County (Las Animas) and High Plains Community Health Centers serves Prowers County (Lamar). The region has limited certified diabetes educators and registered dietitians (Map 20).

Map 8 Focus Region 6



Map 9 Focus Region 7



Region 7 is comprised of Pueblo County. It is identified as an urban region (Appendix 7) and contains the city of Pueblo. The diabetes prevalence and the age-adjusted diabetes mortality rate in this region are statistically significantly higher than the prevalence and the age-adjusted mortality rate for the rest of the state. The region has two DSME programs located in Pueblo. Avondale and Pueblo have Pueblo Community Health Centers at various sites within each city. The county has some certified diabetes educators and registered dietitians in Pueblo (Map 10).

Region 8 is comprised of six counties in Southern Colorado. Three of the counties are considered rural and three frontier (Appendix 7). The age-adjusted mortality rate for diabetes as the underlying cause in this region is statistically significantly higher than the rest of the state. It has one DSME program in Alamosa County (Alamosa). Valley-Wide Community Health Center has locations in five of six counties, Alamosa County (Alamosa), Rio Grande County (Rio Grande), Saguache County (Center and Moffat), Conejos County (La Jara and Guadalupe) and Costilla County (San Luis). The region has limited certified diabetes educators and registered dietitians (Map 10).

Map 10 Focus Region 8

Map 11 Focus Region 14

Region 14 is Adams County, another urban region (Appendix 7). The diabetes prevalence and the age-adjusted mortality rate for diabetes in this region are statistically significantly higher than the prevalence and the mortality rate for the rest of the state. The region has six community health center's including two Salud Community Health Centers in Brighton and Commerce City, one community health center at Plains Medical Center in Strasburg, two in Aurora and one in Thornton. The county has some certified diabetes educators and registered dietitians in the urban, western part of the county (Map 10).

Region 20 is Denver County. It is an urban region (Appendix 7) and contains the city of Denver. The region has three accredited DSME programs located at Rose Medical Center, Presbyterian/St. Luke's Medical Center and Centura Health/ Porter Adventist. In addition, surrounding metro area counties have accredited DSME programs that serve residents of Denver County. One pharmacy student-based DSME clinic is in Denver at the Stout Street Clinic. Denver Health has community health services in 23 sites within the county. The surrounding counties have multiple community health centers represented by Metro Community Provider Network and Clinica Family Health Services. The county has multiple certified diabetes educators and registered dietitians serving diverse populations in Metro Denver communities (Map 10).

Map 12 Focus Region 20

Limitations

Data from the Behavioral Risk Factor Surveillance System (BRFSS) have several limitations. The low prevalence of diabetes in the state restricted analysis to health statistics regions rather than individual counties. After stratifying within the regions by specific preventive care practices, sample sizes became even smaller. This limited the ability to determine statistically significant differences between regions, even with several years of aggregated data. Although the BRFSS results were weighted to represent the population within the state, many minority groups of interest could not be explored due to small sample sizes. BRFSS data were self-reported by Respondents over the telephone. Persons without a landline telephone were not included in the survey, as they could not be reached through random digit dialing.

It should be noted that BRFSS prevalence data on participation in DSME are limited. Only one question ("Have you EVER taken a course or class in how to manage your diabetes yourself?") is asked and answers are limited to "yes", "no", or "don't know/not sure." This question does not provide any additional information on when the education occurred, type of class, number of classes attended or content of the class.

The measurement of self-monitoring blood glucose (SMBG) is reported as at least one time daily in response to the question, "About how often do you check your blood for glucose or sugar? Include times when checked by a family member or friend, but do not include times when checked by a health professional." Physicians may recommend a frequency of testing which may be more or less frequent than once per day. Conversely, individuals may be testing their blood and using their results to manage their diabetes less frequently than once per day. The question does not allow for the respondent to disclose his or her recommended monitoring routine. Consequently, the reporting of this measure may not reflect the true proportion of persons with diabetes who monitor their blood glucose levels less frequently. The optimal frequency and timing of SMBG for individuals with type 2 diabetes on noninsulin therapy is not specified but should be sufficient for reaching optimal glucose goals. The standard of care for SMBG for individuals using multiple insulin injections or insulin pump therapy is three or more times daily (American Diabetes Association, 2010).

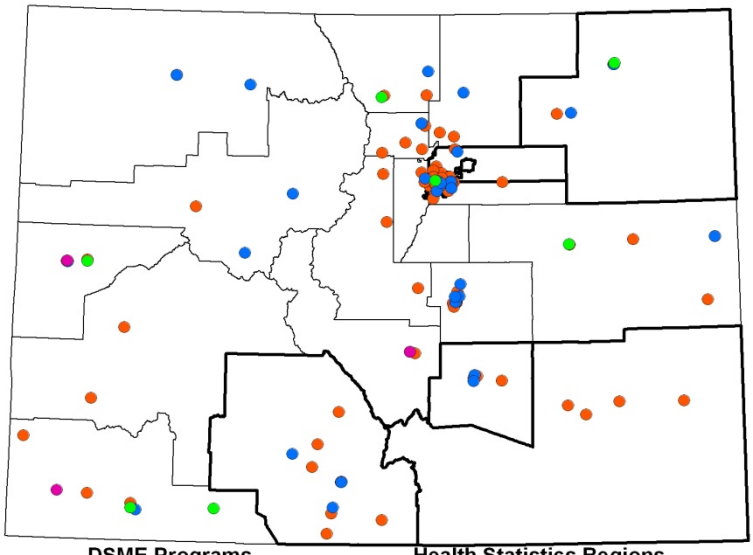
ADA and AADE DSME Program Survey

Methods

Data Collection

The purpose of the American Diabetes Association (ADA) and the American Association of Diabetes Educators (AADE) DSME Program Survey was to collect information that would help understand the reach and characteristics of sustainable DSME programs in Colorado. The survey consisted of 51 primary questions that covered program characteristics such as cultural competency, curriculum, language services capacity, referrals, existing partnerships and patient demographics. The survey included both closed and open-ended (free

Map 13 **Organizations that Provide Diabetes Self-Management Education**



Sources: AADE website, Oct. 2009; ADA website, Mar. 2009; Dept. of Clinical Pharmacy, University of Colorado, Denver, July 2009; Colorado Community Health Network website, July 2009

response) questions. For some questions, Respondents were asked to estimate percentages that described certain aspects of their program, e.g., the proportion of group vs. individual sessions or the proportion of male vs. female clients. The survey instrument was posted and delivered on Survey Monkey, an Internet-based survey application. A copy of the ADA and AADE program survey instrument is included in the Appendix (Appendix 8).

Only Colorado DSME programs recognized by the American Diabetes Association (ADA) or certified by the American Association of Diabetes Educators (AADE) were invited to participate in the survey. Eligible programs were identified from the ADA and AADE Web sites. Map 7 shows the distribution of the 31 identified ADA and AADE DSME programs in Colorado. (Community health centers and pharmacy, student-based clinics are also included in Map 7, though they were not included in the current survey because they were not ADA-recognized or AADE-certified DSME programs). Each ADA and AADE DSME program was contacted by phone to identify the most appropriate respondent for the survey and confirm current contact information. An e-mail invitation to participate in the online survey, including a live Web link to the Survey Monkey Web site, was sent to directors of the 31 identified DSME programs in September 2009. The survey was self-administered and Respondents submitted their answers online. Individuals who did not respond to the survey were sent two different reminders from Survey Monkey and contacted once by phone to encourage participation.

Data Analysis

Survey data were downloaded from Survey Monkey to Microsoft Excel. Quantitative data analysis, including frequencies and proportions, was performed using a combination of Microsoft Excel and Epi Info (Version 3.5.1, US Centers for Disease Control and Prevention) software. Data were stratified by the focus regions selected at an earlier stage in the needs assessment process. Qualitative responses to open-ended questions were consolidated in list format and reviewed by the needs assessment team.

Results

Twenty-three of the 31 programs participated in the survey. Results from one respondent were excluded after the response revealed the DSME program was no longer ADA-recognized or AADE-certified at the time of the survey. In two separate instances, one set of survey responses was submitted on behalf of two DSME programs. This occurred in circumstances where two DSME programs were housed within the same parent organization and each received a unique invitation to participate. However, the program directors elected to combine responses and complete one survey representing both programs. The 22 responses used for data analysis include 24 of the 30 ADA-recognized and AADE-certified DSME programs in Colorado, for a total response rate of 80 percent. Of the 21 Health Statistics Regions in Colorado, 13 regions had at least one DSME program that participated in the survey. Table 6 shows a breakdown of survey participation by Colorado Health Statistics Regions.

Table 6: ADA and AADE DSME program survey invitations and responses

	# Programs Identified and Invited	# Programs Participated in Survey	Comments
Region 1	2	2	
Region 2	1	0	
Region 3	0	0	
Region 4	4	3	Two program responses submitted as one
Region 5	1	0	
Region 6	0	0	
Region 7	2	1	
Region 8	1	1	
Region 9	1	1	
Region 10	1	1	Excluded from analysis
Region 11	2	2	
Region 12	2	2	
Region 13	1	1	
Region 14	3	2	Two program responses submitted as one
Region 15	1	1	
Region 16	2	2	
Region 17	0	0	
Region 18	1	0	
Region 19	2	1	
Region 20	3	3	
Region 21	1	0	
Total	31	22 responses representing 24 programs included in analysis	

Grey shading denotes Focus Region identified at a previous step in the needs assessment

The median age of DSME programs participating in the survey was 10.0 years (range 0.5-24). DSME programs in the six focus regions reflected a median age of 12.0 years (range 3.5-24), which was slightly older than the median age of 10.0 years in those regions not selected (range 0.5-20.0). Across all programs, the median number of patients provided with DSME services per month was 23 (range 4-133). Focus regions served a median of 30 patients per month (range 1-110), while non-focus regions served a median of 20 patients per month (range 8-133). Map 8 shows the top 10 ZIP codes in Colorado that are currently served by the ADA and AADE DSME programs that participated in the survey and provided reliable ZIP code data.

Map 14

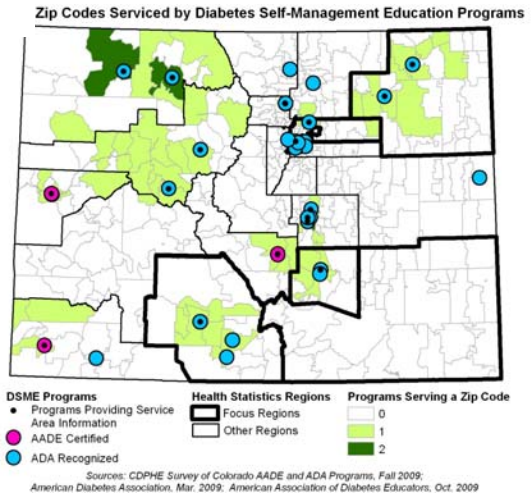
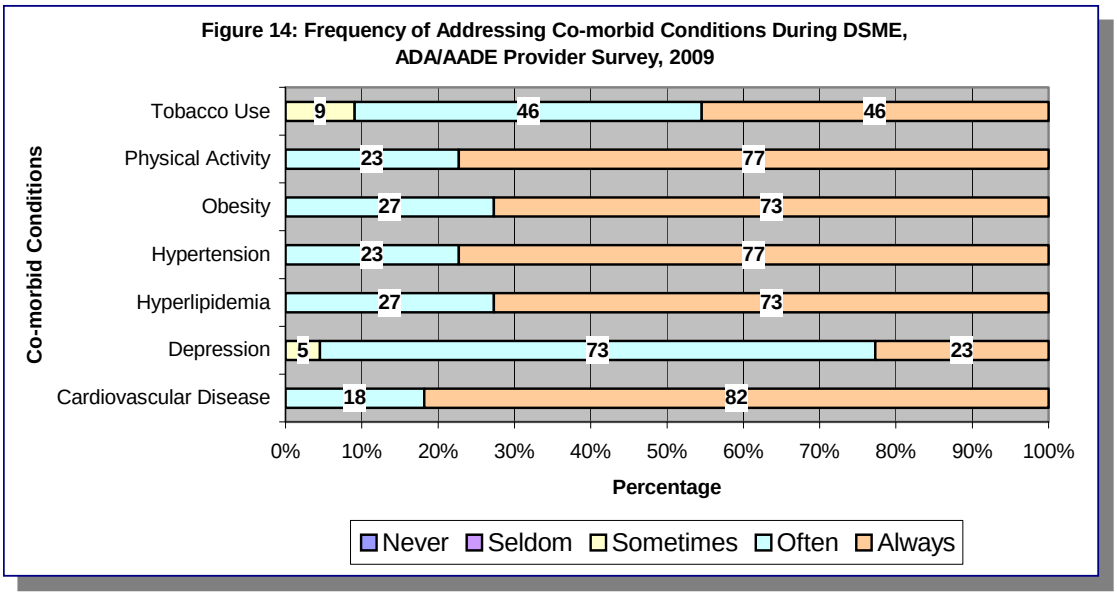


Table 7 presents an overview of the DSME program characteristics throughout the state, separated by focus regions and non-focus regions. The majority of Respondents (86 percent) reported their programs are either very or moderately well known in their communities. The three programs that reported they are not well known are located in non-focus regions. The majority of Respondents (91 percent) reported their programs could serve additional patients per month without an increase in their current resources. Of these Respondents, half reported their programs could serve 11-20 additional patients per month.

Table 7: ADA and AADE DSME program characteristics

	Proportion (Frequency)		
	All Responses (N=22)	**Focus Region (N=9)**	**Non-Focus Region (n=13)**
Awareness of program			
Very well-known	31.8 (7)	44.4 (4)	23.1 (3)
Moderately well-known	54.5 (12)	55.6 (5)	53.8 (7)
Not well-known	13.6 (3)	-- (0)	23.1 (3)
Capacity for more patients per month			
None, at capacity	9.1 (2)	11.1 (1)	7.7 (1)
1-10	27.3 (6)	33.3 (3)	23.1 (3)
11-20	50.0 (11)	44.4 (4)	53.8 (7)
21-30	4.5 (1)	-- (0)	7.7 (1)
31-40	9.1 (2)	11.1 (1)	7.7 (1)
Current credentials			
ADA recognized	86.4 (19)	100.0 (9)	76.9 (10)
AADE certified	13.6 (3)	-- (0)	23.1 (3)
Considering AADE certification			
Yes	52.6 (10)	44.4 (4)	60.0 (6)
No	47.4 (9)	55.6 (5)	40.0 (4)
Refer to pharmacists			
Yes	72.7 (16)	88.9 (8)	61.5 (8)
No	27.3 (6)	11.1 (1)	38.5 (5)
Refer to oral health provider			
Yes	81.8 (18)	77.8 (7)	84.6 (11)
No	18.2 (4)	22.2 (2)	15.4 (2)
Offer free services			
Yes	54.5 (12)	33.3 (3)	69.2 (9)
No	45.5 (10)	66.7 (6)	30.8 (4)
Other diabetes education services in area for uninsured			
Yes	66.7 (14)	44.4 (4)	83.3 (10)
No	19.0 (4)	33.3 (3)	8.3 (1)
I don't know	14.3 (3)	22.2 (2)	8.3 (1)
Offer ongoing support to LEP populations			
Yes	31.8 (7)	22.2 (2)	38.5 (5)
No	68.2 (15)	77.8 (7)	61.5 (8)
Total CDE FTE	(32.0)	(11.7)	(20.3)

Figure 14 displays how often co-morbidities are addressed during DSME among the programs that participated in the current survey.



The majority of programs that participated in the survey (86 percent) were ADA-recognized. Slightly more than half (53 percent) are also considering AADE certification. Reasons cited for considering (or not considering) AADE certification are presented in Table 8. Respondents who are considering AADE certification said certification could increase the number of program sites, cost less and be easier to use than ADA recognition. Conversely, Respondents who are not considering AADE certification viewed it as an additional cost and time expenditure given their current ADA recognition status.

Table 8: Open-ended responses to why (or why not) programs are considering AADE certification in the future

	Focus Region	Non-Focus Region
Reasons Why Considering AADE Certification (n=10)	• We need to see if other insurers besides Medicare accept it before we would switch • To increase the number of sites we can provide education services at. • Easier access to data, database	• Ease of use, data collection, multiple sites, costs. • Cost is lower, but not sure about the ultimate benefits of switching • More flexible sites, less money • I'm not convinced I get great "bang for my buck" from the ADA. I do not like their patient education materials. They are expensive. • Ease and cost
Reasons Why Not Considering AADE Certification (n=9)	• We are already ADA certified • Cost and time restraints • Waiting 5 years to get the kinks out.	• Additional cost • Not sure if would be a benefit, so my answer is really maybe. • Not at this time, we are resubmitting to ADA yet this fall to continue recognition for another 3 years.

Seventy-three percent of ADA and AADE DSME programs surveyed make referrals to pharmacists and 82 percent make referrals to oral health providers for ongoing diabetes self-management support. Qualitative comments on referrals are presented in Table 9.

Table 9: Open-ended comments on providing referrals

Program Component	Focus Region	Non-Focus Region
Refer to Pharmacist		
Yes (n=16)	• Our sister program has a pharmacist that teaches the medication portion of the program, and is available for consult. • We suggest that ask their pharmacist about any new med they are prescribed and how it may interact with their diabetes, affect their blood sugar, etc. • We have a part-time pharmacist that will review meds. with patients as needed. • Pharmacist assists with class instruction and offers follow-up support • We have 2 pharmacists • Recommend that all prescriptions be filled at one pharmacy and that a pharmacist review the list regularly	• There is a hospital pharmacist available. We use a hospital pharmacist at times to do lectures as well. • Included in our curriculum; encourage discussing how their meds work together or against each other, including OTCs. • If patients have questions regarding their medications. • Questions about drug interactions • We always recommend the patient use one pharmacy. Take all medications in with them to doctor's appointments to avoid polypharmacy. • Through the outpatient diabetes education program. • Yes, if pt. feels they are not getting questions regarding the interactions with various medications addressed adequately by other health care providers. • Recommendation only
No (n=6)	• *No comments provided from Respondents*	• *No comments provided from Respondents*
Refer to Oral Health Provider		
Yes (n=18)	• Dental health is covered in all classes, and patients with dentition problems are advised to meet with a dentist for follow-up. • We recommend teeth cleaning twice a year • We recommend they have an annual dental exam. • Dental care is a standard of care We have a school on campus that sees pts at reduced fees • Regular dental care and exam is recommended	• Recommended as standard of care for routine dental exam • Recommend patients follow up regularly with dental professional • We discuss importance of regular dental visits. • Recommend oral health yearly • Oral health is part of our routine teaching. • Part of curriculum • We encourage a dental exam every six months. • This is part of the Diabetes Education program • If indicated for oral health. • Routine dental care is always addressed. • Referral to *XXXX* clinic for low income patients
No (n=14)	• *No comments provided from Respondents*	• *No comments provided from Respondents*

Many Respondents integrate medication and oral health education into their services (routinely or as needed) and are aware of available resources for patient referrals. Responses suggest most programs do not currently have a formal mechanism in place for referrals. Forty-six percent reported that their programs do not offer free services. In addition, 19 percent reported that other diabetes education services are not offered in their area for the uninsured and 14 percent said they were not aware of these services in their area. More of these programs are located in focus regions.

A total of 32 full-time-equivalent (FTE) positions were reported across all ADA and AADE DSME programs. Focus regions reported a total of 11.7 FTE positions and non-focus regions reported a total of 20.3 FTE positions. It was most common for Respondents to report multiple part-time staff. Registered dietitians (RDs), followed by registered nurses (RNs), were the most frequently reported type of staff employed (data not shown).

Table 10 presents an overview of patient demographics as estimated and reported by the survey Respondents. The range of responses for each demographic characteristic is also presented to show the extent of variability across programs. On average, 57 percent of DSME patients are female and 43 percent are male. Nearly 75 percent of patients are over age 45. The average percentage of patients under age 19 is 1 percent in focus regions and 5 percent in non-focus regions. One non-focus region program has an estimated 15 percent of its patients under age 19. Respondents estimated that the majority of their programs' patients are covered by private insurance (39 percent) or Medicare (45 percent). The average percentage of uninsured patients reported from the non-focus regions (12 percent) is double the average percentage reported by focus regions (6 percent). An estimated 59 percent of patients participate in individual DSME sessions and an estimated 48 percent participate in group DSME sessions. The estimated percentage of group sessions was higher in the focus regions (60 percent) than the non-focus regions (39 percent).

Table 10: Overview of patient demographics reported by ADA and AADE DSME programs

	Mean Estimated Proportion* [Range of Responses]		
	All Responses (N=22)	**Focus Region (N=9)**	**Non-Focus Region (n=13)**
Sex			
Male	43.2 [20-60]	42.9 [20-60]	43.5 [30-55]
Female	56.8 [40-80]	57.1 [40-80]	56.5 [45-70]
Age (years)			
Under 19	2.9 [0-15]	0.9 [0-3]	4.7 [0-15]
19-44	23.0 [5-51]	25.6 [10-51]	21.2 [5-47]
45-64	40.5 [14-70]	42.0 [14-54]	39.5 [14-70]
65 or older	34.1 [4-75]	31.6 [4-65]	35.8 [20-75]
Racial / Ethnic Groups			
White/non-Hispanic	69.8 [45-99]	72.1 [45-99]	68.2 [50-97]
Black or African American	5.6 [0-20]	6.3 [0-17]	5.2 [0-20]
Hispanic	21.5 [1-50]	21.0 [1-50]	21.8 [1-50]
American Indian/Alaska Native	1.3 [0-5]	0.3 [0-1]	1.7 [0-5]
Asian Pacific Islander	2.9 [0-10]	1.8 [0-5]	3.3 [0-10]
Other/non-Hispanic or Multi-racial	2.0 [0-6]	1.7 [0-4]	2.3 [0-6]
Type of diabetes			
Type 1	10.3 [1-35]	8.6 [1-35]	11.5 [5-30]
Type 2	78.7 [55-98]	82.3 [55-98]	76.2 [61-90]
Gestational Diabetes Mellitus	10.7 [0-30]	10.3 [0-30]	10.9 [2-30]
Setting for DSME†			
Individual sessions	58.6 [1-133]	47.9 [1-100]	66.1 [10-133]
Group sessions	47.6 [0-99]	59.9 [5-99]	39.2 [0-90]
Patient health care coverage†			
Uninsured	9.6 [0-45]	6.2 [0-11]	11.6 [0-45]
Privately insured	40.6 [5-70]	45.3 [20-70]	37.1 [5-70]
Medicare	39.4 [5-90]	39.7 [20-70]	39.2 [5-90]
Medicaid	13.2 [0-40]	15.1 [4-30]	11.7 [0-40]
Don't know	One response = 10.0	--	One response = 10.0
DSME Program Funding source			
Self-pay (n=17)	6.2 [1-20]	3.6 [1-5]	7.3 [1-20]
Private insurance (n=21)	38.9 [5-80]	37.6 [10-75]	39.8 [5-80]
Medicare (n=21)	44.9 [10-90]	49.4 [20-83]	41.5 [10-90]
Medicaid (n=18)	10.3 [0-30]	10.3 [0-30]	10.4 [0-20]
Sliding scale (n=7)	4.4 [0-10]	5.0 [5-5]	4.3 [0-10]
Other (n=7)	3.3 [0-10]	5.3 [1-10]	1.8 [0-5]

* Total may be greater or less than 100 percent due to estimations made by the survey respondent.
† Categories are not mutually exclusive; an individual patient could be counted in more than one category.

Table 11 presents an overview of language needs and existing language capacity of current ADA and AADE DSME programs. On average, 9 percent of current patients require DSME services in Spanish. Programs are able to provide these Spanish language services for slightly less than half (49 percent) of the time patients need them. Programs need to seek external translation services for Spanish DSME in an estimated 55 percent of the instances they serve these patients. Qualitative comments on resources needed to assure culturally and linguistically appropriate DSME services are presented in Table 12. Respondents expressed a need for ethnic diet guidelines and information on food habits for multiple ethnic/racial groups, as well as educational materials that are appropriate for all reading levels. In addition, many Respondents expressed a need for Spanish language services, including interpretation and written materials in Spanish.

Table 11: Language needs and capacity

	Mean Estimated Proportion [Range of Responses]		
	All Responses (N=22)	**Focus Region (N=9)**	**Non-Focus Region (n=13)**
Patients require DSME in Spanish	8.8 [0-48]	4.9 [1-10]	11.5 [0-48]
Proportion of time able to provide DSME in Spanish	49.4 [0-100]	51.7 [0-100]	47.4 [0-100]
Proportion of time need external translation for Spanish (n=21)	54.9 [0-100]	62.8 [0-100]	48.9 [0-100]
Number of FTE with Spanish skills			
Reading	0.7 [0-5.5]	0.6 [0-1]	0.7 [0-5.5]
Speaking	0.4 [0-2]	0.6 [0-1]	0.3 [0-2]
Patients require DSME in language other than English or Spanish	1.6 [0-9]	1.8 [0-9]	1.5 [0-5]
Patients require external translation (any language other than English)	5.5 [0-48]	2.4 [0-9]	7.7 [0-48]

Table 12: Open-ended responses on what assistance or resources staff need to assure meaningful access to culturally and linguistically appropriate services to diverse groups

Group	Focus Region	Non-Focus Region
White/non-Hispanic	• None • Translator phone, other language handouts via internet	• None • Program materials available • Ethnic dietary choices • None • None • None • Great materials, large print, 8th grade reading level • None needed • Appropriate literature and reading levels, assistive devices, religious diversity issues... • None
Black or African American	• None • Ethnic diet guidelines	• None • Program materials available • Ethnic dietary choices; communications--have some written materials (we have language line available) • None • None • None • Culturally sensitive materials, above • As above... • None
Hispanic	• Our hospital has interpreters available for us to use. • We use the Interpreter Service for all non English-speaking patients. It is a telephone service available 24/7. • Hispanic food models, Spanish teaching materials • None • Language appropriate • Translator phone, other language handouts via internet	• Some assistance from interpretation, have 2 different tools for written info in Spanish • Program materials available • Ethnic dietary choices; communications/language -nothing written (we have language line available for some tribes) • Some • Interpretation; translation services • Some • Materials as above in Spanish, interpretation phone line • Interpreter is available if needed • Interpretation via person or language line plus above issues and materials in Spanish • Maybe a staff member that speaks Spanish • Certified medical translator
American Indian / Alaska Native	• None • Ethnic diet guidelines • Need paper/internet resources	• None • Program materials available • Very rare population in this area - • Some • None • None • Above • Interpreter is available if needed • As above except for language issues • Additional information on food habits, CARB content of foods

Table 12 continued…

Group	Focus Region	Non-Focus Region
Asian Pacific Islander	• None • Translator phone, other language handouts via internet • Need paper/internet resources	• Not usually, some need for language assistance. Have interpreter phone and often family assists • Program materials available • Some • None • None • Above • Any language or cultural needs are met, plus above • Additional information on food habits, CARB content of foods
Other/non-Hispanic or Multi-racial	• None • Translator phone, other language handouts via internet • Need Paper/internet resources	• Tele-language interpretation services • None • Above • Program coordinator ensures assessment for need of culturally specific needs. Asks for assistance as needed • As above

Table 13 presents the extent of existing linkages and partnerships between existing DSME programs and community organizations. The majority of Respondents (77 percent) reported that their programs do not make community linkages in a systematic fashion or that linkages are limited to a list of identified community resources. Partnerships appear to be a more common part of program operations than linkages. However, 57 percent of Respondents reported that program partnerships do not exist or have been considered but not yet implemented.

Table 13: Current linkages and partnerships between ADA and AADE DSME programs and community organizations

	Proportion (Frequency)		
	All Responses (N=22)	**Focus Region (N=9)**	**Non-Focus Region (n=13)**
Community Linkages*			
Not made systematically	27.3 (6)	11.1 (1)	38.5 (5)
Limited to providing a printed list of identified community resources in an accessible format	50.0 (11)	66.7 (6)	38.5 (5)
Accomplished by a designated staff person or agency	4.5 (1)	-- (0)	7.7 (1)
Accomplished through active coordination between the program and various community service agencies.	18.2 (4)	22.2 (2)	15.4 (2)
Partnerships†			
Do not exist	19.0 (4)	50.0 (4)	-- (0)
Being considered but have not yet been implemented	38.1 (8)	25.0 (2)	46.2 (6)
Formed to develop supportive programs and policies	33.3 (7)	25.0 (2)	38.5 (5)
Actively sought to develop formal supportive programs and policies across the entire system	9.5 (2)	-- (0)	15.4 (2)

*Community linkages are partnerships with community-based organizations that can assist with diabetes self-management support.
† Partnerships encompass partnering or working in conjunction with community organizations to ensure that the needs of the patient are met.

Table 14 presents qualitative comments on linkages and partnerships. These comments suggest that although community relationships exist and are functioning informally, linkages and partnerships have not been formally established.

Table 14: Open-ended comments on linkages and partnerships

Program Component	Focus Region	Non-Focus Region
Detail on Linkages*	• We are the only community resource	• Set up by the person seeing the patient or social worker. • Our program works collaboratively with other service agencies to help meet the needs of the diabetic population as comprehensively as possible. • We ARE the Community link. People are referred to us. • Mostly we provide the information and encourage them to take advantage. • Limited to a resources list.
Detail on Partnerships†	• Diabetes Health fair, CSU extension office, local support groups.	• Work with and volunteer for mission medical • Our program works collaboratively with other service agencies to help meet the needs of the diabetic population as comprehensively as possible. • I have worked with the *XXXX* to support their efforts in obtaining funding for diabetes education for the uninsured. • We partner, on a very limited basis, with *local Health and Human Services. The county* continues to dump more and more services on US. • Again we are limited in our area. We can refer out of town but many people are unable to travel. • Mostly with the Senior Center. • *XXXX* clinic

*Community linkages are partnerships with community-based organizations that can assist with diabetes self-management support.
† Partnerships encompass partnering or working in conjunction with community organizations to ensure that the needs of the patient are met.

Table 15 presents open-ended responses on ways that DSME program staffs are involved in diabetes activities within their respective communities. Commonly reported outreach activities include participating in health fairs, offering educational talks and diabetes screenings, and participating in awareness and fundraising events.

Table 15: Open-ended responses describing ways program staff are involved in diabetes activities within the community

Program Component	Focus Region	Non-Focus Region
Program Staff Involvement in Community	• Diabetes health fair. • On the Diabetes health fair committee. • We participate in a myriad of health fairs, the enormous community-wide Health Expo, do multiple community or healthcare facility presentations, participate in the Community Diabetes Project which is a business/community/healthcare facility partnership that aims to prevent diabetes, increase early diagnosis, support effective education and behavior change and promote evidence-based practice. • Diabetes Expo • Diabetes expo, ADA walk and tour de cure, health fairs • Diabetes Expo, community health fairs/outreach • Participate in community health fairs at organizations such as *large business*, 9 Health Fair, Healthcare center, church fairs. Also education on diabetes symptoms to Police Academy and Community School	• Diab. walks • We have the only adult and pediatric support group in town. We do community lectures to service organizations. Community screenings at health fairs. Diabetes walk. Staff education. • Our program works closely with LiveWell that touches on many aspects of improving diabetes healthy lifestyles. We also participate in local health fairs. • Provide diabetes alert day activities, work at the 9 Health Fair yearly, go to businesses and do diabetes screenings • N/A • Support group for Type 1 kids, ADA diabetes walks • Again, we are the ones doing the programs. No one else in our County has the interest, ability or staff to pull these things off. • We have an annual diabetes expo. We also provide education at the various health fairs in the area as well as go to the golden age center, hospice or any other area that may ask for education • Our CDE provides in-services within the community and in the hospital for staff awareness • Health Fairs, Expert Speakers, Diabetes Screenings and information, Camps... • ADA Tour de Cure, Camp, Diabetes Expo, our own presentation of a fall community based education program for the past years. • Health and Senior fairs. Community education. food preparation classes

Limitations

The survey sample was a non-probability purposive sample. Therefore, the results are only representative of Colorado ADA and AADE DSME programs identified as ADA-recognized or AADE-certified at the time of survey distribution and who elected to participate. These programs were targeted because they were considered by the work group to represent sustainable DSME programs, reimbursable by insurance companies. The results from the current survey do not include any additional diabetes education efforts ongoing in Colorado. Results should be interpreted within the context of the small sample size of survey Respondents included in the analysis (N=22). Data were self-reported by DSME program directors. Percentages reported directly by Respondents to describe program characteristics and patient demographics were provided as estimates only. These estimates reflected a program director's "best guess" and were not intended to exactly quantify program attributes.

DISCUSSION

American Dietetic Association and American Association of Diabetes Educators DSME Program Survey

Group Versus Individually Delivered Education

Centers for Medicare and Medicaid Services (CMS) have recommended a group size for DSME education of two to 20 members, with an average of 10. Compared to individual sessions, group-based strategies typically encourage interpersonal dynamics and are cost-effective (Tang, 2006). Almost half (48%) of the patients served by ADA and AADE DSME programs in Colorado were served in group settings. The percentage is higher (60%) in the six focus regions, as compared to the rest of the state (49%) (Table 10, page 36).

Programs Addressing Co-Morbidities

Co-morbid chronic conditions are common among individuals with diabetes and were addressed during DSME among the programs that participated in the current survey (Figure 14, page 33). According to the Medical Expenditure Panel Survey, most adults with diabetes have at least one co-morbid chronic disease and as many as 40 percent have at least three co-morbid conditions (Piette, 2006).

Insurance Coverage and Reimbursement in Colorado

Since 1998, Colorado state law has required private insurance policies to provide coverage to individuals with diabetes for hospital, surgical or medical expenses (National Conference of State Legislators, Colorado, 2009). Specifically, the law mandates medical nutrition therapy (MNT) as well as outpatient DSME if prescribed by a health care provider. In addition to these educational services, the law mandates coverage for equipment and supplies.

Medicaid reimbursement for DSME is different for each state and is legislatively determined. Colorado Medicaid does not reimburse for DSME. The federal Medicare program, however, does reimburse for DSME in all states.

Both ADA and AADE DSME programs in Colorado qualify for Medicare reimbursement. In the first year of eligibility for DSME, Medicare can be billed for one hour of individual and nine hours of group education. In subsequent years, Medicare can be billed for two hours annually. Primary care practices can employ the services of a certified diabetes educator (CDE) or a registered dietitian (RD) and bill for DSME and MNT services using Current Procedural Terminology and the Healthcare Common Procedural Coding System. Federally qualified health centers or rural health care centers may not bill for group DSME services because the cost of group sessions is included in the calculation of the all-inclusive Federally Qualified Health Centers visit rate (American Association of Diabetes Educators, Reimbursement Tips, 2009). Steps to provider reimbursement for Colorado DSMT (Diabetes Self-Management Training) Programs and DSME/T Reimbursement Advice for Colorado Medicaid can be found in the Appendix (Appendix 9 and10, respectively).

On the federal level, Medicare reimbursement for DSME is inadequate compared to the cost of providing care. Some hospital-based organizations shift costs from more lucrative programs to subsidize DSME programming or some hospital-based DSME programs are forced to close. Other barriers to DSME include staffing, scheduling problems, lack of fiscal and administrative support, and poverty and transportation barriers (Powell, 2005).

An estimated 10 percent of individuals with diabetes who received DSME in Colorado from surveyed providers were uninsured (range 0-45). Just under half (46 percent) of ADA and AADE DSME

programs did not offer free services. Nineteen percent of Respondents reported that other diabetes programs for uninsured are not available in their area, and 14 percent said they are not aware if these resources exist for the uninsured (ADA and AADE DSME Program Survey). Approximately 17 percent of adult Coloradans reported not having health coverage (2005-2007 BRFSS). The adverse impact on health is compounded by a lack of access to traditional primary care services. This demonstrates the need for defining and implementing additional methods for improving diabetes care for the uninsured.

Resources for Delivering DSME in Colorado

Certified Diabetes Educators (CDE)

Certified diabetes educators have demonstrated mastery of diabetes care and management. The CDE is a certificate by the National Certification Board for Diabetes Educators that is awarded after a minimum of 1,000 professional practice hours and successful completion of the CDE written examination. Those disciplines eligible for CDE credentials include clinical psychologist, registered nurse, occupational therapist, optometrist, pharmacist, physical therapist, physician, registered dietitian, or health professional with a master's degree in social work, nutrition or health education. The exact number of certified diabetes educators in Colorado is unknown but can be estimated through memberships in ancillary professional organizations such as the Rocky Mountain Association of Diabetes Educators, the American Dietetic Association, the Colorado Nurses Association, and the American Association of Diabetes Educators.

Registered Dietitians (RD)

It is common for ADA-recognized and AADE-certified DSME programs to have multiple part-time staff members who are registered dietitians or registered nurses. Registered dietitians hold a unique role in DSME programs. They provide DSME services to individuals with diabetes and Medical Nutrition Therapy (MNT) to these same individuals through separately administered services. Registered dietitians may qualify to provide separate and complementary services such as training on injection site rotation and insulin administration devices, pending accordance with local scope of practices, state licensure, payer policies and/or facility requirements. In addition, registered dietitians provide MNT that includes assessment, counseling and follow up of nutrition and lifestyle factors that affect diet.

Medicare beneficiaries may take advantage of MNT and DSME benefits in the same year. Medical evidence compiled by Centers for Medicare and Medicaid Services (CMS) suggests MNT services are more effective if provided after the completion of the initial series of DSME classes. MNT for individuals with diabetes is individualized to usual eating habits and includes an individual's metabolic profile, treatment goals and desired outcomes. Registered dietitian's have a defined and unique role in care for individuals with diabetes that differs depending on whether the service is solely for MNT or within a more comprehensive DSME program (Daly, 2009).

Map 10 illustrates the geographical distribution of certified diabetes educators and registered dietitians in Colorado. Though this is not an inclusive list, it does reflect the membership database of the Rocky Mountain Association of Diabetes Educators, the Colorado Dietetic Association and the American Association of Diabetes Educators.

American Diabetes Association Recognized Programs and American Association of Diabetes Educators Certified DSME Programs (ADA and AADE)

There were 28 ADA-recognized and three AADE-certified DSME programs identified as of December 2009. They were identified through the ADA and AADE Web sites and the majority of programs are affiliated with community based hospitals as well as larger metropolitan hospitals. At diagnosis, DSME involves a focus on knowledge, skills, problem solving, and content-driven to improve medical

management and self-management. After an individual has had more experience with self-managing their diabetes, they may be well-suited for more empowerment, goal setting and process-oriented DSME.

In addition, ADA recognition and AADE certification requirements support community-based DSME programs which are not hospital based. Research has shown that community-based DSME is also effective in providing DSME programming, particularly to people who would not normally receive this education. An Action Guide to establishing a community-based DSME program for adults with type 2 diabetes to improve glycemic control from Partnership for Prevention can be found in the Appendix (Appendix 11).

Stanford University Diabetes Self-Management Program (DSMP)

This Stanford University DSMP program, developed by Kate Lorig, RN, PhD, provides all necessary content areas for evidenced-based diabetes, self-management education in English (Lorig, 2009) and Spanish (Lorig, 2008). A comparison of the ADA curriculum content areas, the AADE7™ self-care behaviors, and the Stanford University DSMP curriculum are included in the Appendix (Appendix 12). The Stanford University DSMP was designed by Stanford University using four self efficacy-enhancing strategies with small groups of persons with diabetes and/or support individuals. These strategies include the following: skills mastery through making an action plan; sharing and feedback; modeling; reinterpretation of symptoms; and persuasion. The Stanford University DSMP program addresses basic diabetes education and skill development for individuals with diabetes and support individuals. The program is process-oriented and typically led by two trained leaders, one or both of whom are peer leaders with diabetes. The lay leaders may be health professionals but are required to suppress interventions outside the realm of Stanford University DSMP program. The workshops are provided 2.5 hours per week for six weeks and delivered in group settings. Comparing DSME to community-based Stanford University Diabetes Self-Management Program or Chronic Disease Self-Management Program is summarized in the Appendix (Appendix 13). Key elements include empowerment and goal setting, two strategies that have demonstrated positive health outcomes (Stanford School of Medicine, 2009). Both the Central Colorado Area Health Education Center (CAHEC) and Consortium for Older Adult Wellness (COAW) currently (2009) maintain Colorado licenses for the Stanford University DSMP program in English and Spanish, which provides trainings to lay leaders and master trainers. These trainings qualify the individuals to be certified by Stanford University as Lay Leaders or Master Trainers in the diabetes self-management program (DSMP). These programs have been trademarked in Colorado as Healthier Living Colorado-Diabetes™ and Tomando Control Colorado-Diabetes™. In this document these programs are referred to as the Stanford University DSMP.

Federally Qualified Health Centers (FQHC)

From information provided by the Colorado Community Health Network in 2009, approximately 9.65 percent of patients age 18 years and older in the 10 Community Health Centers located in the six focus regions have a diagnosis of Type 1 or Type 2 diabetes. Of those patients, approximately 43 percent have an A1C less than 7 percent, 32 percent have an A1C between 7 percent and 9 percent and 25 percent have an A1C greater than 9 percent. Among patients in eight of the community health centers, 26 percent have Medicaid, 7 percent have Medicare, 4 percent have other public insurance, 13 percent have private insurance and 50 percent are self-pay or uninsured.

List of community health center's by numbered focus region:
Salud Family Health Centers (Region 1)
Valley Wide Health Systems, Inc., High Plains Community Health Center (Region 6)
Pueblo Community Health Center (Region 7)
Valley Wide Health Systems, Inc. (Region 8)

Clinica Family Health Services, Inc., Metro Community Provider Network, Plains Medical Center, Salud Family Health Centers (Region 14)
Colorado Coalition for the Homeless, Denver Health's Community Health Services (Region 20).

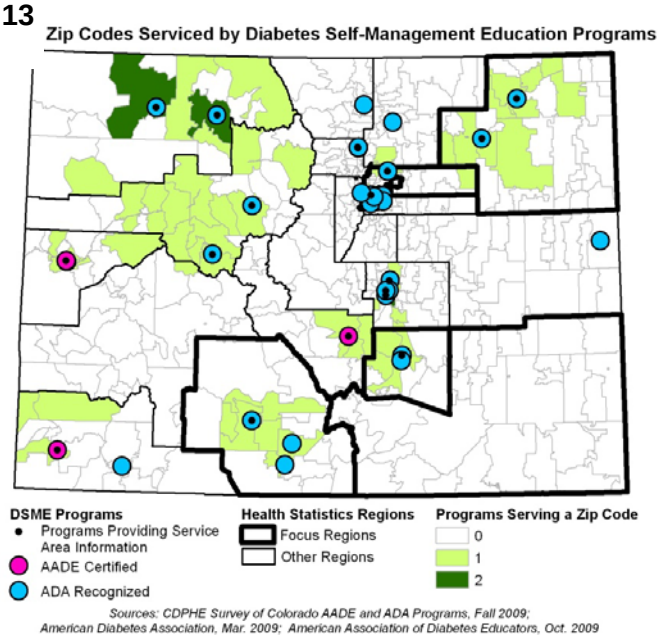
Payments for Diabetes Self-Management Education and Medical Nutrition Therapy for Medicare beneficiaries with diabetes are made directly to Federally Qualified Health Centers (Appendix 14).

Pharmacy Student-Based DSME

The University of Colorado School of Pharmacy has organized 10 pharmacy or clinic-based sites across the state to provide patients one-hour educational sessions each month for six months. Fourth-year pharmacy students conduct the sessions under the supervision of pharmacy supervisors and university faculty. They include assessment of weight, height, waist-circumference, fasting lipid profile, and A1C values with initial and six-month follow-up comparisons. Modules include all content areas required by Standard Six of the National Standards for Diabetes Self-Management Education (Funell, 2010). These clinics are unique resources for the state as most are located in rural communities with limited access to DSME education and services. Two of the clinics are located in Region 1 and Region 20 as identified during this Needs Assessment.

Gaps in Availability of DSME in Colorado

Map 13



Gaps in Market Share

No ADA and AADE DSME programs are located in Focus Region 6.

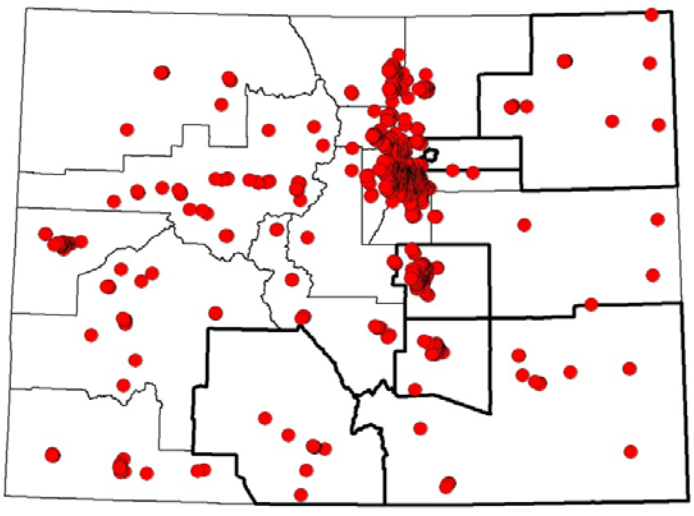
The regional impact of all DSME programs were mapped for the top 10 zip codes served. The map illustrates gaps in DSME delivery.

Gaps in Pharmacies Providing DSME

Pharmacies are located across the state and are moderately represented in all focus regions.

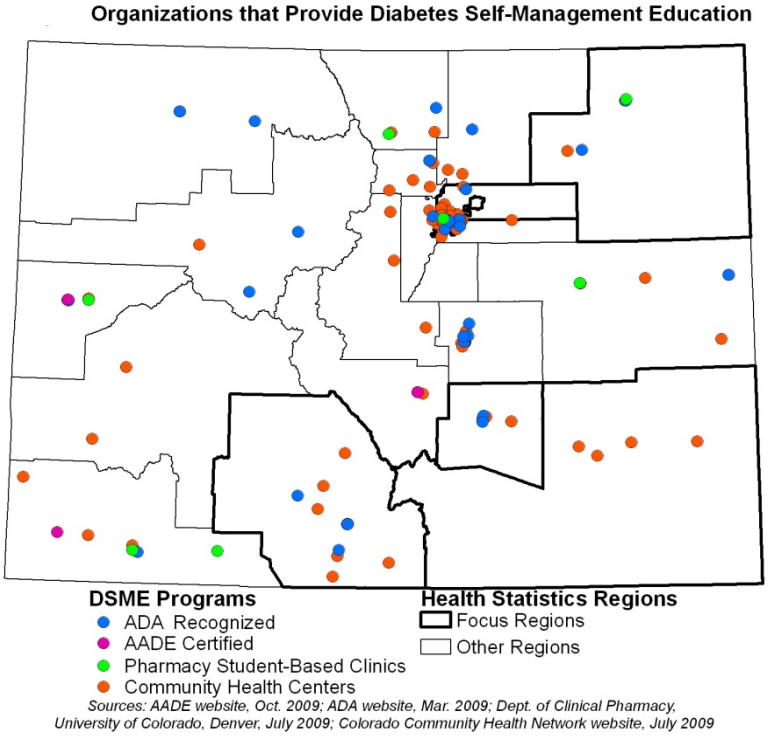
However, pharmacies are located across the state and are moderately represented in all focus regions.

Map 14 **Pharmacies serving in-state clients**



Source: Perscription Drug Outlet In State active licenses,
Colorado Department of Regulatory Agencies, Oct. 20, 2009

Map 15



Sources: AADE website, Oct. 2009; ADA website, Mar. 2009; Dept. of Clinical Pharmacy, University of Colorado, Denver, July 2009; Colorado Community Health Network website, July 2009

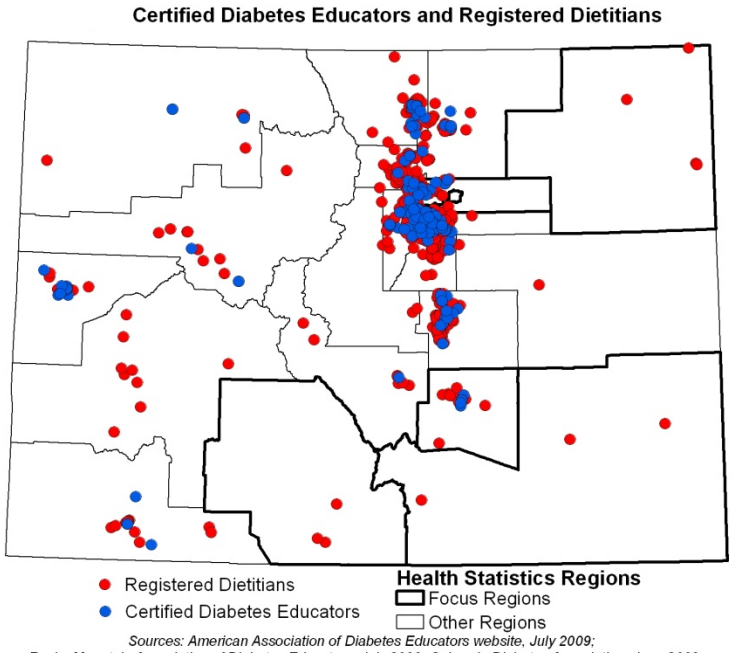
Gaps in Organizations Providing DSME

No ADA and AADE DSME programs are located in the Southeast focus region.

There are only 10 pharmacy-student based DSME programs across the state, with two located in focus regions.

DSME programs and services are not uniformly dispersed across the state and instead align with major cities. Traveling distance may be a factor for individuals with diabetes.

Map 16



Sources: American Association of Diabetes Educators website, July 2009; Rocky Mountain Association of Diabetes Educators, July 2009; Colorado Diabetes Association, June 2009

Gaps in Diabetes Educators and Registered dietitians

Registered dietitians are available in five of the six focus regions, but certified diabetes educators are not as available in these same five focus regions.

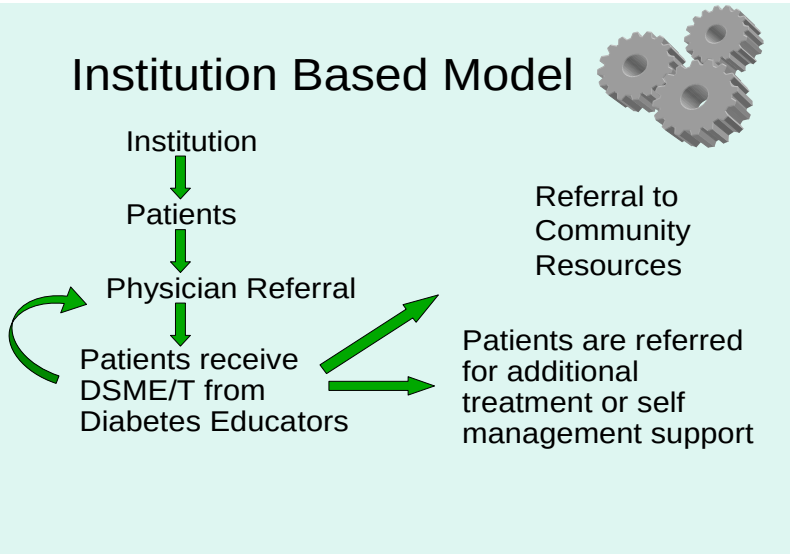
The Denver Metro area has more registered dietitians and certified diabetes educators than the rest of the state. The various clusters of registered dietitians and certified diabetes educators in metropolitan areas typically parallel the locations of DSME programs.

Opportunities in Creating or Leveraging DSME Systems

Support Models for DSME Delivery Through Provider Networks

Support institution based model of DSME delivery, aligned to obtain reimbursement, within urban or rural institutions such as hospitals or federally qualified health centers.

Figure 15



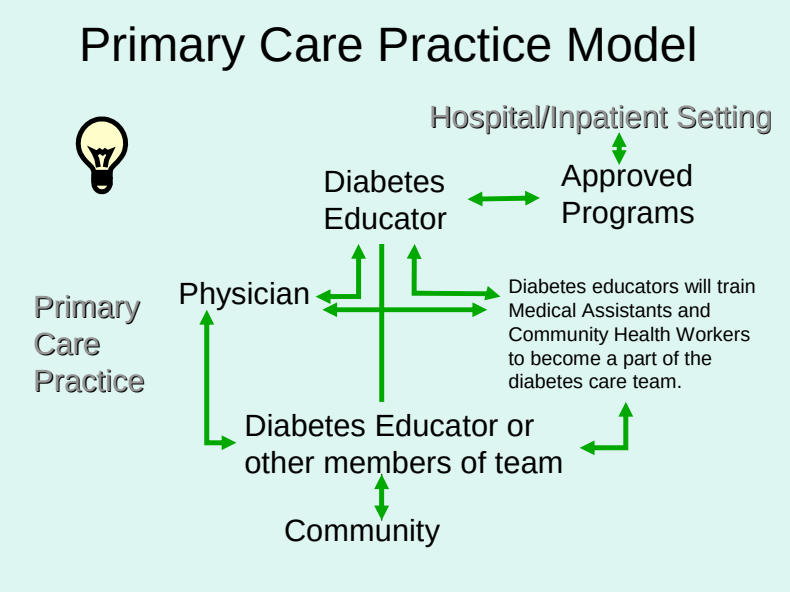
The institution based model for DSME delivery illustrates the typical hospital-based model (Draheim, 2009). Due to the close proximity to acute care episodes, the DSME program benefits by inpatient and outpatient referrals. In addition, the hospital billing system completes the reimbursement process using the organization's National Provider Identification (NPI) number for DSME. An NPI number is a Medicare requirement and identifies individual providers or sponsoring organizations.

Support primary care practice model of DSME delivery, aligned to obtain reimbursement, through hospital based DSME programs or diabetes educators, within primary care provider practices.

Providing DSME at convenient times and locations such as in primary care facilities during routine office visits removes barriers to DSME. In addition, DSME is effective when delivered outside of traditional settings in community centers, faith institutions and other community gathering places. Finally, diabetes management and annual foot and eye screenings are enhanced when the diabetes educator and referring physician are together in the physician's practice(s).

Primary care physicians should consider a collaborative partnership with a pharmacist, registered nurse, registered dietitian or hospital-based DSME program to provide DSME services. Many physician groups have established similar partnerships with pharmacists, for example, coordinating medication management and Medicare and private payer billing. Collaborations may take various forms and may include contracting with an independent diabetes educator, directly employing a diabetes educator, referring patients to an outpatient program or creating an accredited diabetes education program. Benefits of collaboration include increasing practice efficiency by outsourcing patient training; counseling, tracking and monitoring patient follow-up; and meeting pay-for-performance and quality improvement goals. A study conducted in Western Pennsylvania demonstrated a 200 percent to 300 percent increase in patients receiving DSME when education was made available in primary care offices as compared to hospital-based programs (Siminerio, 2005).

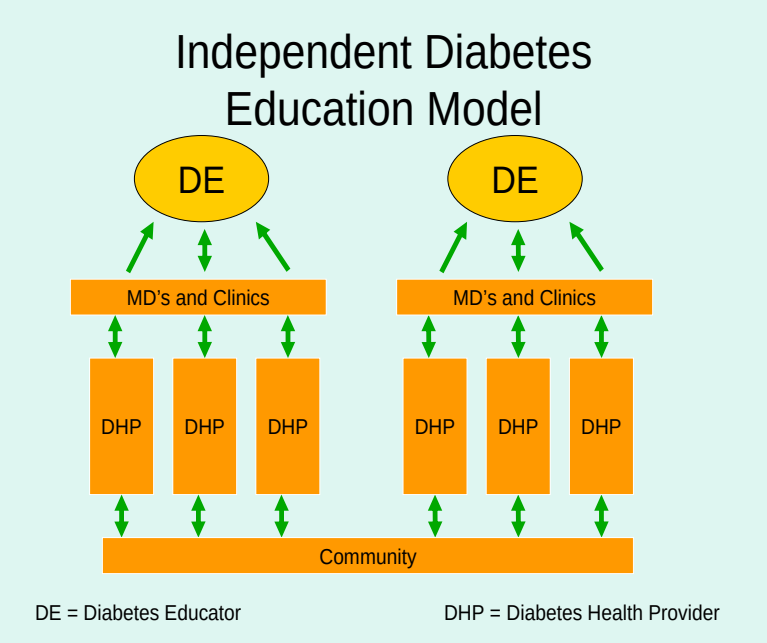
Figure 16



The primary care practice model illustrates an expansion within the typical hospital-based model (Draheim, 2009). A diabetes educator who is a member of the DSME hospital based program provides services at primary care offices (top). The DSME program benefits by referrals within the primary care group office(s). The billing system of the organization sponsoring the DSME program is used to complete the reimbursement processes. Or, the diabetes educator, as an independent contractor, provides services at the primary care practice and bills for reimbursement using the National Provider Identifier (NPI) of the physician or practice group.

Support independent diabetes education model of DSME delivery, aligned to obtain reimbursement through NPI number of the independent contractor(s) whose office is located at a convenient, community-based location.

Figure 17



The independent education model illustrates the entrepreneurial concept for DSME delivery (Draheim, 2009). The individual registered nurse, registered dietitian, Board Certified – Advanced Diabetes Management (BC-ADM) professional, or pharmacist can provide a DSME program per their scope of practice and respective clinical abilities. A neutral office location(s) is determined when multiple physician practices are served. The DSME program benefits from referrals from multiple physician groups. The billing system is the responsibility of the DSME provider. Also, the DSME provider must have his or her own individual NPI number or practice with someone who has an NPI number.

Registered nurses, pharmacists and registered dietitians can consider opening a DSME program in a community-based organization and linking with physician practices for patient referral. This is an entrepreneurial opportunity for health professionals following the 2007 revision in the National Standards for Diabetes Self-Management Education. The American Association of Diabetes Educators has an Entrepreneurial Web page that can assist with this process. A reimbursement expert is available for questions regarding reimbursement challenges.

Support Pharmacist Delivered DSME

Delivery of DSME, as well as medication management services, is possible through pharmacists. This strategy is well supported in the literature because of demonstrated improvement in medication compliance and outcome measures. Pharmacists often practice in outpatient settings and have systems in place to track outcomes and obtain reimbursement.

Pharmacists who are trained in diabetes education and management have a unique set of skills to offer individuals with diabetes. Clinical pharmacists may adjust drug regimens, ascertain medication compliance and complete other aspects of DSME. Clinical pharmacists can provide continuity of care to patients with diabetes between office visits with the primary care physician.

The effectiveness of pharmacist-administered DSME is supported in the literature for its significant improvements in A1C values, blood pressure and aspirin use (Ragucci, 2005). Clinical pharmacists achieved these outcomes through collaborative goal setting, drug dosage adjustments as necessary and easy availability between clinic visits.

Establish Stanford University Diabetes Self Management Program (DSMP), including reimbursement capacity

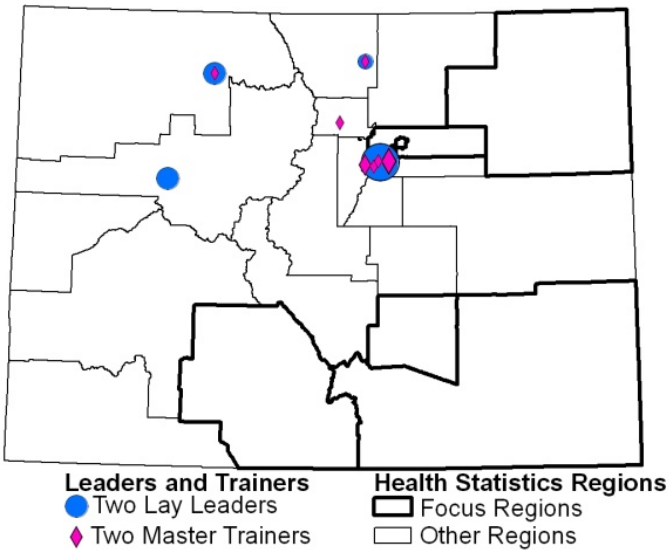
Stanford University DSMP in English and Spanish offered by the State Unit on Aging, Central Colorado Area Health Education Centers, The Colorado Diabetes Prevention and Control Program, Consortium for Older Adult Wellness (COAW) and other partners demonstrates a system for supporting Coloradans and offers the potential for reimbursement. A pilot study to understand the process of aligning this program with reimbursement capability is ongoing with the Administration on Aging from the Department of Health and Human Services.

Support Stanford University CDSMP (DSMP and CDSM)

Colorado DPCP funds this framework, staffed by trained lay leaders and master trainers with health care backgrounds. The Colorado Diabetes Prevention and Control Program initiated a third DSME curriculum in early 2009 in trainings by COAW. The Stanford University DSMP in English has eight completed workshops, 19 lay leaders and nine master trainers in Colorado. The Stanford University DSMP in Spanish has one completed program, nine lay leaders and one master trainer in Colorado. A summary of participant demographic data from Stanford University DSMP workshops conducted in Colorado can be found in Appendix 15.

Map 17

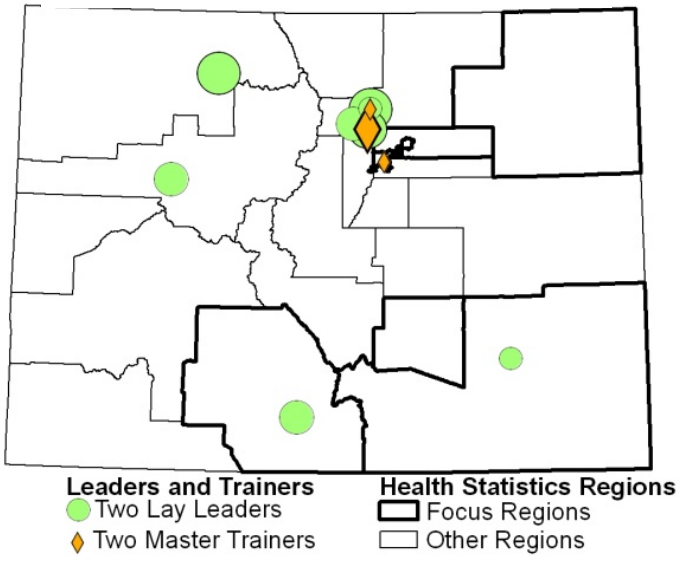
Stanford University DSMP Program-
Leaders and Trainers - English



Graduated symbol size indicates the number of leaders or trainers at each location.
Source: Healthy Aging Service System of the Consortium for Older Adult Wellness, Aug. 2009

Map 18

Stanford University DSMP Program-
Leaders and Trainers - Spanish



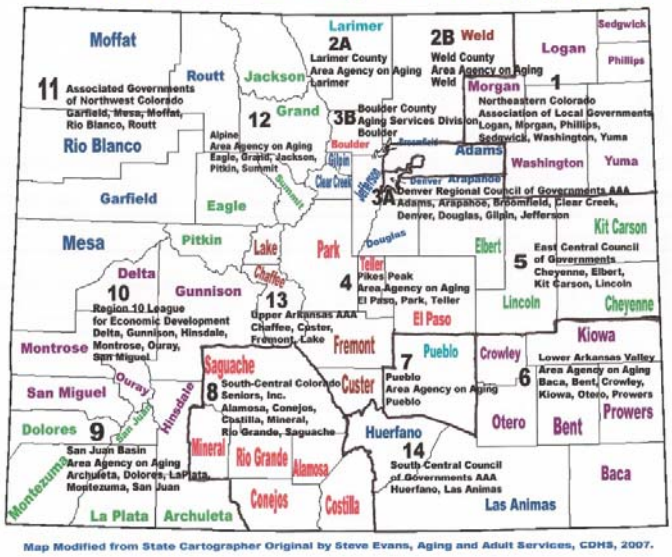
Graduated symbol size indicates the number of leaders or trainers at each location.
Source: Healthy Aging Service System of the Consortium for Older Adult Wellness, Aug. 2009

Develop Partnership with State Unit on Aging and Statewide Network of Area Agencies on Aging

The State Unit on Aging helps individuals 60 years and older retain their dignity and independence and remain in their own homes and communities for as long as possible. Services are not income based but target frail, low-income, minority and rural populations. Colorado has 16 Area Agencies on Aging (AAA) and some mirror the Health Statistics Regions, specifically the focus regions. Map 13 identifies AAA and the dark black lines depict the six focus regions. Registered dietitians and certified diabetes educators comprise a network of qualified individuals who provide DSME in a variety of capacities. Building capacity and additional DSME services and programs through this network could reach a diverse elderly population.

Map 19

State of Colorado Area Agencies on Aging (AAA)



Map Modified from State Cartographer Original by Steve Evans, Aging and Adult Services, CDHS, 2007.

Maximize Capacity of DSME Programs through Referral Networks

ADA and AADE DSME Programs

AADE's analysis of the Centers for Medicare and Medicaid Services (CMS) reimbursement for Diabetes Self-Management Education (DSME) found that about 1 percent of Medicare beneficiaries with diabetes received DSME in 2004 and 2005 (American Association of Diabetes Educators, 2009). Data from the Medicare Quality Improvement Organizations (QIOs) reveal the root cause of this low utilization rate is a limited awareness of or confusion about the availability of benefits (American Association of Diabetes Educators, 2005).

The capacity for the majority of ADA and AADE DSME Programs has not been reached in Colorado. Only two ADA and AADE DSME programs (9 percent) self-reported that the program was operating at full capacity for intake of individuals with diabetes. The other 20 programs reported being able to accept as many as 1-40 additional patients per month (ADA and AADE DSME Program Survey) without an increase in resources. Building capacity for DSME programs through referrals for individuals with newly diagnosed diabetes and individuals requiring ongoing DSME follow-up would improve diabetes care in Colorado. Physicians' offices or other point-of-service locations such as 9Health Fairs present opportunities to increase awareness of DSME benefits and availability in Colorado.

Colorado Business Group on Health

The Colorado Business Group on Health (CBGH) compiles a Health Care Effectiveness Data and Information Set (HEDIS) that compares health insurers in the Health Matters 2009 (Appendix 16). CBGH data also identify organizations that refer to DSME and those who do not.

Por tu Familia

The American Diabetes Association in Colorado sponsors the Por tu Familia outreach program. This program serves Latino populations and includes community-based programs focusing on diabetes prevention as well as diabetes self-management. Promotoras (lay leaders) are integral to the success of Por tu Familia. Connecting the Por tu Familia personnel and infrastructure to DSME programs and services would ensure ongoing community support and potentially enhance DSME program referrals.

Colorado Rural Health Advocacy Coalition

The Colorado Rural Health Advocacy Coalition (CoRHAC) released a white paper in 2009 summarizing diabetes disparities in rural Colorado (Appendix 17). The report outlined the need to increase availability of DSME in rural Colorado by educating rural health care providers and the public on the effectiveness of DSME (Colorado Rural Health Advocacy Coalition, 2009). CoRHAC may partner with the challenge to increase DSME programs in rural communities and referrals into DSME programs.

RECOMMENDED STRATEGIES

These recommendations are provided to direct the focus of the Colorado DPCP over the next several years as it strives to increase the availability of DSME in the focus regions and statewide as identified through this needs assessment.

Increase physician referrals to DSME programs when persons are first diagnosed and as part of ongoing care and self-management using data-driven collaborations which focus on health care costs and quality improvement.

Assist in infrastructure building within systems or organizations which demonstrate capacity and reimbursement capabilities for DSME.

Collaborate with DSME inpatient and outpatient programs in Colorado to build capacity and increase outreach to all populations, including those that are culturally diverse or speak English as a second language.

Collaborate with organizations advocating for improvements and updates to DSME policy and reimbursement practices.

Explore new data opportunities for DSME outcomes and preventive care practices to broaden surveillance measures and share information with statewide partners.

Provide technical assistance regarding program management, staffing, and continuous quality improvement to new ADA and AADE DSME programs located in community-based delivery systems, primary care facilities, and local public health systems.

CONCLUSION

The Needs *Assessment Examining Diabetes Self-Management Education In Colorado* concludes the work of the DSME Work Group. The following summarizes the critical findings identified from the work completed in 2009:

- DSME is the cornerstone of treatment for individuals with diabetes and provides information and skills that support preventive care practices that determine positive health outcomes.
- The percentage of adults with diabetes who receive formal diabetes education has not increased substantially since 2000. Meanwhile, the prevalence of diabetes among adults continues to increase. The percentage of adults with diabetes who perform preventive care practices is higher for Coloradans who report having ever taken a diabetes self-management education class.
- DSME is provided through ADA and AADE DSME programs and diabetes-trained educators, comprising a network of care typically located near hospitals, community health centers or clinics.
- Six of the 21 Health Statistics Regions were selected to begin the work in 2010. These focus regions demonstrated the greatest need for DSME services based on diabetes prevalence and secondary and tertiary indicators. The focus regions include: Northeast Colorado (Region 1), Southeast Colorado (Region 6), Pueblo County (Region 7), San Luis Valley (Region 8), Adams County (Region 14), and Denver County (Region 20).
- New opportunities to increase DSME in Colorado involve system changes and linkages between DSME resources.
- Strategies identified in the Needs Assessment will be implemented in the six focus regions and then statewide.

In conclusion, data and critical thinking guided the DSME Needs Assessment. Improving diabetes self-management among Coloradans with diabetes requires improving access to quality DSME, supporting community-based DSME and building networks to connect DSME programs with the health care system. Changes in DSME delivery systems will build infrastructure and increase capacity to reach more Coloradans with diabetes. Ultimately, the targeted DSME programs and services will become sustainable through Medicare and private payers.

GLOSSARY

Behavioral Risk Factor Surveillance System
The Colorado Behavioral Risk Factor Surveillance System (BRFSS) is housed within the Health Statistics Section at the Colorado Department of Public Health and Environment. Colorado participated in BRFSS with point-in-time surveys in 1982 and 1987. Since 1990, the department has entered into a yearly cooperative agreement with the Centers for Disease Control and Prevention (CDC) to develop and implement the BRFSS survey in Colorado. Data are collected through telephone interviews on a random sample of non-institutionalized adults. The Survey Research Unit now completes more than 1,000 BRFSS surveys a month with adult residents of Colorado. Additional information on the BRFSS is available at http://www.cdphe.state.co.us/hs/brfss/

Certified Diabetes Educator
A certified diabetes educator (CDE) is a health care professional that is specialized and certified to provide DSME to individuals with diabetes and their families. A clinical psychologist, registered nurse, occupational therapist, optometrist, pharmacist, physical therapist, physician (M.D. or D.O.), or podiatrist holding a current license and meeting the professional practice experience requirements is qualified to take the CDE exam. In the United States, the National Certification Board for Diabetes Educators.

Community Linkages
Community linkages are partnerships with community-based organizations that can assist with diabetes self-management support.

Confidence Intervals
Confidence intervals are used to describe the possible margin of error of a true value of a variable, such as a mean, percentage or rate. A 95 percent confidence interval indicates that 95 out of 100 times, the “true” variable value will be contained between the upper and lower limits of the confidence interval. Confidence intervals are directly affected by sample size. If the sample size is small, the confidence interval will be wide. Conversely, if the sample size is large, the confidence interval will be narrow.

Confidence intervals can be used to determine statistical significance. A statistically significant difference is noted when the confidence interval of one value is higher (+) or lower (-) than the confidence interval of another value – meaning the confidence intervals do not overlap.

Cultural Competency
Cultural competence refers to an ability to understand people of different cultures in order to communicate and interact effectively, recognizing the differences in language, customs, beliefs, values and institutions of racial, ethnic, religious or social groups.

Diabetes Educator
A healthcare professional who specializes in teaching people with diabetes how to manage their chronic disease.

Diabetes Self-Management Education
Diabetes self-management education (DSME) is the process of teaching people to manage their diabetes. The goals of DSME are to control the rate of metabolism (which affects diabetes-related health), to prevent short- and long-term health conditions that result from diabetes, and to achieve the best possible quality of life for clients, while keeping costs at an acceptable level. DSME can be provided in a variety of community settings, including community gathering places, the home, recreational camps, worksites and schools.

Diabetes Self-Management Training
Centers for Medicare and Medicaid Services use this term and reference this acronym throughout their government documents related to Medicare diabetes benefits. This term is synonymous with DSME.

Evidence-Based
Evidence-based is used to describe those interventions that have proven themselves in research and practice.

Frontier County
Frontier counties are a subset of rural counties (Source: http://www.searchcolorado.org/Rural_Urban_Frontier_Map.pdf).

Gap
A gap is a conspicuous disparity or difference in data, as between two health statistics regions.

Geographic Information Systems
A geographic information system (GIS) integrates hardware, software and data for capturing, managing, analyzing and displaying geographically referenced information. GIS allows us to view, understand, question, interpret and visualize data in ways that reveal relationships, patterns and trends in the form of maps, globes, reports and charts (Source: http://www.gis.com/content/what-gis).

Health Statistics Regions
These 21 regions are aggregations of counties developed by the Health Statistics Section of the Colorado Department of Public Health and Environment (CDPHE) in partnership with state and local public health professionals. The regions were developed using statistical and demographic criteria.

Health Care Effectiveness Data and Information Set
The Health Care Effectiveness Data and Information Set (HEDIS) is a group of measures related to quality of care reported by most health plans across the nation and maintained by the National Committee for Quality Assurance (NCQA.)

Hemoglobin A1C or A1C
This is a blood test that measures the average blood glucose over a two- to three-month period of time; also called glycosylated hemoglobin.

Medical Nutrition Therapy
Medical Nutrition Therapy (MNT) involves the assessment of the nutritional status of individuals with diabetes, which includes review and analysis of medical and diet history, laboratory values and anthropometric measurements. Based on the assessment, nutrition modalities most appropriate to manage the condition or treat the injury are chosen.

Opportunities for DSME
Opportunities for DSME are good chances or prospects for creating or leveraging resources to increase DSME.

Partnerships
Partnerships encompass partnering or working in conjunction with community organizations to ensure that the needs of the patients are met.

Prevalence
Prevalence is defined as the number of events in a given population in a specified time period. Data from the population-based surveys in this report refer to point prevalence, defined as the number of persons with a specific attribute in a population at a specified point in time.

Primary Prevention of Diabetes
Primary prevention refers to an action taken to prevent or delay the development of diabetes in a person who is well and does not have diabetes or has a high risk for developing diabetes.

Non-probability, Purposive Sample
Non-probability sampling does not involve random selection. Purposive sampling is a form of non-probability sampling used to purposely seek responses from specific population(s) of interest.

Race/ethnicity
Race/ethnicity data is self-reported on population-based surveys. The Health Statistics Section at the Colorado Department of Public Health and Environment uses different racial/ethnic categories for different requests. The BRFSS racial/ethnic categories include White non-Hispanic, Black non-Hispanic, Hispanic, other non-Hispanic and multi-racial non-Hispanic. Other categories include Asian/Pacific Islander, Native American/Alaskan Native, and other race/ethnicity populations. Race and ethnicity are social constructs representing distinct histories, languages and cultures of groups within the United States. They are not valid biological or genetic categories.

Resources for DSME
Resources for DSME include current identified programs or personnel providing DSME.

Rural County
Counties are technically designated as metropolitan or non-metropolitan; here rural county definitions serve as proxies for non-metropolitan.

Secondary Prevention of Diabetes
Secondary prevention refers to the identification of people who have already developed diabetes at an early stage in the disease's natural history. Through screening and early intervention, the goal is to halt its progression and minimize complications such as retinopathy. One example of an intervention is an intensive glycemic control with near-normalization of the A1C value.

Self-Management Support
All patients with chronic illness make decisions and engage in behaviors that affect their health (self-management). Disease control and health outcomes depend, to a significant degree, on the effectiveness of self-management. Effective self-management support means more than telling patients what to do. It means acknowledging patients' central role in their care, one that fosters a sense of responsibility for their own health. It includes the use of proven programs that provide basic information, emotional support and strategies for living with chronic illness. Self-management support cannot begin and end with a class. Using a collaborative approach, providers and patients work together to define problems, set priorities, establish goals, create treatment plans and solve problems along the way.

Sustainability
Sustainability means the organizational processes that ensure the capacity to maintain program services at a level that will provide ongoing prevention and treatment for a health problem after the termination of major financial, managerial and technical assistance from an external doctor.

Tertiary Prevention of Diabetes
Tertiary prevention refers to preventing disability from diabetes complications while providing appropriate supportive and rehabilitative services to minimize morbidity and maximize quality of life. Timely detection of proliferative retinopathy and early laser therapy to prevent vision loss or blindness is an example of tertiary care. It also includes preventing secondary complications among individuals with long-term complications of diabetes.

Type 1 Diabetes
Type 1 diabetes was previously called insulin-dependent diabetes mellitus (IDDM) or juvenile-onset diabetes. Type 1 diabetes develops when the body's immune system destroys pancreatic beta cells, the only cells in the body that make the hormone insulin that regulates blood glucose. To survive, people with Type 1 diabetes must have insulin delivered by injection or a pump. This form of diabetes usually strikes children and young adults, although disease onset can occur at any age. Type 1 diabetes accounts for 5 percent to 10 percent of all diagnosed cases of diabetes. Risk factors for Type

1 diabetes may be autoimmune, genetic or environmental. There is no known way to prevent type 1 diabetes. Several clinical trials of methods to prevent Type 1 diabetes are currently in progress or are being planned.

Type 2 Diabetes
When Type 2 diabetes is diagnosed, the pancreas is usually producing enough insulin, but for unknown reasons the body cannot use the insulin effectively, a condition called insulin resistance. After several years, insulin production decreases. The result is a buildup of glucose in the blood, which prevents the body from making efficient use of its main source of fuel.

The symptoms of type 2 diabetes may include fatigue, frequent urination, increased thirst and hunger, weight loss, blurred vision, and slow healing of wounds or sores. Some people have no symptoms. Previously known as non-insulin-dependent diabetes mellitus (NIDDM) or adult-onset diabetes, type 2 diabetes may account for about 90 percent to 95 percent of all diagnosed cases of diabetes. Risk factors for type 2 diabetes include older age, obesity, family history of diabetes, history of gestational diabetes, impaired glucose tolerance, physical inactivity and race/ethnicity. African Americans, Hispanic/Latino Americans, American Indians, and some Asian Americans and Pacific Islanders are at particularly high risk for type 2 diabetes.

Urban County
Counties are technically designated as metropolitan or non-metropolitan; here an urban definition serves as proxy for metropolitan.

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APPENDIX

National Standards and Surveillance Measures for DSME (Standard 6 – Written Curriculum)

DSME Curriculum Content Areas of American Diabetes Association	AADE 7 Self-Care Behaviors	Public Health Surveillance[1-5]
Describe the diabetes disease process and treatment options and developing personal strategies to address psychological issues and concerns	Healthy Coping	Mortality with diabetes[2]
Incorporate *nutritional management* into lifestyle	Healthy Eating	
Incorporate *physical activity* into lifestyle	Being Active	
Monitoring blood glucose and other parameters and interpreting and using the results for self-management decision making	Monitoring	
Using *medication(s)* safely and for maximum therapeutic effectiveness	Taking Medication	
Developing personal strategies to promote health and behavior change.	Problem Solving	Persons with diabetes: Self blood-glucose monitoring at least once daily (target 63%)[1] Glycosylated hemoglobin (A1C) checked at least once per year (target 86%)[1] Cholesterol (lipids) checked within the past year (target 93%)[1] Controlled hypertension[4] Influenza and pneumonia vaccination[1] Hospitalization with diabetes[3]
Preventing, detecting, and treating *acute complications*. Prevention detecting, and treating *chronic complications*.	Reducing Risks	Persons with diabetes: Foot examination by a health professional at least once per year (target 76%)[1] Dilated eye exam at least once per year (target 70%)[1] Amputation of a lower extremity attributable to diabetes[3] Incidence of Treated End-Stage Renal Disease Attributed to Diabetes[5]

Comparison of DSME Curriculum between the American Diabetes Association and the Association of Diabetes Educators as identified in Standard 6 of the National Standards for DSME. Both curriculums ensure that individuals with diabetes are informed of the preventive care practices which can be measured through public health surveillance, column three.

BRFSS[1]
Vital Statistics[2]
Hospital discharge[3]
Colorado Business Group on Health[4]
US Renal Disease System[5]

National Standards for Diabetes Self-Management Education

Martha M. Funnell, MS, RN, CDE
Tammy L. Brown, MPH, RD, BC-ADM, CDE
Belinda P. Childs, ARNP, MN, CDE, BC-ADM
Linda B. Haas, PhC, CDE, RN
Gwen M. Hosey, MS, ARNP, CDE
Brian Jensen, RPH
Melinda Maryniuk, MED, RD, CDE
Mark Peyrot, PhD
John D. Piette, PhD
Diane Reader, RD, CDE
Linda M. Siminerio, PhD, RN, CDE
Katie Weinger, EdD, RN
Michael A. Weiss, JD

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Correspondence to Martha M. Funnell, 300 North Ingalls, 3D6, Box 0489, University of Michigan, Ann Arbor, MI 48109-0489 (mfunnell@umich.edu).

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national standards

Diabetes self-management education (DSME) is a critical element of care for all people with diabetes and is necessary in order to improve patient outcomes. The National Standards for DSME are designed to define quality diabetes self-management education and to assist diabetes educators in a variety of settings to provide evidence-based education. Because of the dynamic nature of health care and diabetes-related research, these Standards are reviewed and revised approximately every 5 years by key organizations and federal agencies within the diabetes education community.

A Task Force was jointly convened by the American Association of Diabetes Educators and the American Diabetes Association in the summer of 2006. Additional organizations that were represented included the American Dietetic Association, the Veteran's Health Administration, the Centers for Disease Control and Prevention, the Indian Health Service, and the American Pharmaceutical Association. Members of the Task Force included a person with diabetes; several health services researchers/behaviorists, registered nurses, and registered dietitians; and a pharmacist.

The Task Force was charged with reviewing the current DSME standards for their appropriateness, relevance, and scientific basis. The Standards were then reviewed and revised based on the available evidence and expert consensus.

Definition and Objectives

Diabetes self-management education (DSME) is the ongoing process of facilitating the knowledge, skill, and ability necessary for diabetes self-care. This process incorporates the needs, goals, and life experiences of the person with diabetes and is guided by evidence-based standards. The overall objectives of DSME are to support

informed decision making, self-care behaviors, problem solving, and active collaboration with the health care team and to improve clinical outcomes, health status, and quality of life.

Guiding Principles

Before the review of the individual Standards, the Task Force identified overriding principles based on existing evidence that would be used to guide the review and revision of the DSME Standards. These are:

1. Diabetes education is effective for improving clinical outcomes and quality of life, at least in the short term.[1-7]
2. DSME has evolved from primarily didactic presentations to more theoretically based empowerment models.[3,8]
3. There is no one "best" education program or approach; however, programs incorporating behavioral and psychosocial strategies demonstrate improved outcomes.[9-11] Additional studies show that culturally and age-appropriate programs improve outcomes[12-16] and that group education is effective.[4,6,7,17,18]
4. Ongoing support is critical to sustain progress made by participants during the DSME program.[3,13,19,20]
5. Behavioral goal setting is an effective strategy to support self-management behaviors.[21]

STANDARDS

Structure

Standard 1. The DSME entity will have documentation of its organizational structure, mission statement, and goals and will recognize and support quality DSME as an integral component of diabetes care.

Documentation of the DSME organizational structure, mission statement, and goals can lead to efficient andeffective provision of services. In the business literature, case studies and case report investigations on successful management strategies emphasize the importance of clear goals and objectives, defined relationships and roles, and managerial support.[22-25] While this concept is relatively new in health care, business and health policy experts and organizations have begun to emphasize written commitments, policies, support, and the importance of outcome variables in quality improvement efforts.[22,26-37] The continuous quality improvement literature also stresses the importance of developing policies, procedures, and guidelines.[22,26]

Documentation of the organizational structure, mission statement, and goals can lead to efficient and effective provision of DSME. Documentation of an organizational structure that delineates channels of communication and represents institutional commitment to the educational entity is critical for success.[38-42] According to the Joint Commission on Accreditation of Health Care Organizations (JCAHO),[26] this type of documentation is equally important for small and large health care organizations. Health care and business experts overwhelmingly agree that documentation of the process of providing services is a critical factor in clear communication and provides a solid basis from which to deliver quality diabetes education.[22,26,33,35-37] In 2005, JCAHO published the *Joint Commission International Standards for Disease or Condition-Specific Care*, which outlines national standards and performance measurements for diabetes and addresses diabetes self-management education as 1 of 7 critical elements.[26]

Standard 2. The DSME entity shall appoint an advisory group to promote quality. This group shall include representatives from the health professions, people with diabetes, the community, and other stakeholders.

Established and new systems (eg, committees, governing bodies, advisory groups) provide a forum and a mechanism for activities that serve to guide and sustain the DSME entity.[30,39-41] Broad participation of organization(s) and community stakeholders, including health professionals, people with diabetes, consumers, and other community interest groups, at the earliest possible moment in the development, ongoing planning, and outcomes evaluation process[22,26,33,35,36,41] can increase knowledge and skills about the local community and enhance collaborations and joint decision making. The result is a DSME program that is patient centered, more responsive to consumer-identified needs and the needs of the community, more culturally relevant, and of greater personal interest to consumers.[43-50]

Standard 3. The DSME entity will determine the diabetes educational needs of the target population(s) and identify resources necessary to meet these needs.

Clarifying the target population and determining its self-management educational needs serve to focus resources and maximize health benefits.[51-53] The assessment process should identify the educational needs of all individuals with diabetes, not just those who frequently attend clinical appointments.[51] DSME is a critical component of diabetes treatment,[2,54,55] yet the majority of individuals with diabetes do not receive any formal diabetes education.[56,57] Thus, identification of access issues is

an essential part of the assessment process.[58] Demographic variables, such as ethnic background, age, formal educational level, reading ability, and barriers to participation in education, must also be considered to maximize the effectiveness of DSME for the target population.[13-19,43-47,59-61]

Standard 4. A coordinator will be designated to oversee the planning, implementation, and evaluation of diabetes self-management education. The coordinator will have academic or experiential preparation in chronic disease care and education and in program management.

The role of the coordinator is essential to ensure that quality diabetes education is delivered through a coordinated and systematic process. As new and creative methods to deliver education are explored, the coordinator plays a pivotal role in ensuring accountability and continuity of the educational process.[23,60-62] The individual serving as the coordinator will be most effective if there is familiarity with the lifelong process of managing a chronic disease (eg, diabetes) and with program management.

Process

Standard 5. Diabetes self-management education will be provided by 1 or more instructors. The instructors will have recent educational and experiential preparation in education and diabetes management or will be a certified diabetes educator. The instructor(s) will obtain regular continuing education in the field of diabetes management and education. At least 1 of the instructors will be a registered nurse, dietitian, or pharmacist. A mechanism must be in place to ensure that the participant's needs are met if those needs are outside the instructors' scope of practice and expertise.

Diabetes education has traditionally been provided by nurses and dietitians. Nurses have been utilized most often as instructors in the delivery of formal DSME.[2,3,5,63-67] With the emergence of medical nutrition therapy,[68-72] registered dietitians became an integral part of the diabetes education team. In more recent years, the role of the diabetes educator has expanded to other disciplines, particularly pharmacists.[73-79] Reviews comparing the effectiveness of different disciplines for education report mixed results.[3,5,6] Generally, the literature favors current practice that utilizes the registered nurse, registered dietitian, and the registered pharmacist as the key primary instructors for diabetes education and members of the multidisciplinary team responsible for designing the curriculum and assisting in the delivery of DSME.[1-7,77] In addition to registered nurses, registered dietitians, and pharmacists, a number of studies reflect the ever-changing and evolving health care environment and include other health professionals (eg, a physician, behaviorist, exercise physiologist, ophthalmologist, optometrist, podiatrist)[48,80-84] and, more recently, lay health and community workers[85-91] and peers[92] to provide information, behavioral support, and links with the health care system as part of DSME.

Expert consensus supports the need for specialized diabetes and educational training beyond academic preparation for the primary instructors on the diabetes team.[64,93-97] Certification as a diabetes educator by the National Certification Board for Diabetes Educators (NCBDE) is one way a health professional can demonstrate mastery of a specific body of knowledge, and this certification has become the accepted credential in the diabetes community.[98] An additional credential that indicates specialized training beyond basic preparation is board certification in advanced diabetes management (BCADM) offered by the American Nurses Credentialing Center (ANCC), which is available for master's prepared nurses, dietitians, and pharmacists.[48,84,99]

DSME has been shown to be most effective when delivered by a multidisciplinary team with a comprehensive plan of care.[7,31,52,100-102] Within the multidisciplinary team, team members work interdependently, consult with one another, and have shared objectives.[7,103,104] The team should have a collective combination of expertise in the clinical care of diabetes, medical nutrition therapy, educational methodologies, teaching strategies, and the psychosocial and behavioral aspects of diabetes self-management. A referral mechanism should be in place to ensure that the individual with diabetes receives education from those with appropriate training and credentials. It is essential in this collaborative and integrated team approach that individuals with diabetes are viewed as leaders of their team and assume an active role in designing their educational experience.[7,20,31,100-102,104]

Standard 6. A written curriculum reflecting current evidence and practice guidelines, with criteria for evaluating outcomes, will serve as the framework for the DSME entity. Assessed needs of the individual with prediabetes and diabetes will determine which of the content areas listed below are to be provided:

- Describing the diabetes disease process and treatment options
- Incorporating nutritional management into lifestyle
- Incorporating physical activity into lifestyle

- Using medication(s) safely and for maximum therapeutic effectiveness
- Monitoring blood glucose and other parameters and interpreting and using the results for self-management decision making
- Preventing, detecting, and treating acute complications
- Preventing, detecting, and treating chronic complications
- Developing personal strategies to address psychosocial issues and concerns
- Developing personal strategies to promote health and behavior change

People with diabetes and their families and caregivers have a great deal to learn in order to become effective self-managers of their diabetes. A core group of topics are commonly part of the curriculum taught in comprehensive programs that have demonstrated successful outcomes.[1,2,3,6,105-109] The curriculum, a coordinated set of courses and educational experiences, includes learning outcomes and effective teaching strategies.[110-112] The curriculum is dynamic and needs to reflect current evidence and practice guidelines.[112-117] Current educational research reflects the importance of emphasizing practical, problem-solving skills; collaborative care; psychosocial issues; behavior change; and strategies to sustain self-management efforts.[31,39,42,48,98,118-122]

The content areas delineated above provide instructors with an outline for developing this curriculum. It is important that the content be tailored to match each individual's needs and adapted as necessary for age, type of diabetes (including prediabetes and pregnancy), cultural influences, health literacy, and other comorbidities.[123,124] The content areas are designed to be applicable in all settings and represent topics that can be developed in basic, intermediate, and advanced levels. Approaches to education that are interactive and patient centered have been shown to be effective.[83,119,121,122,125-127]

These content areas are presented in behavioral terms and thereby exemplify the importance of action-oriented, behavioral goals and objectives.[13,21,55,121,128-130] Creative, patient-centered, experience-based delivery methods are effective for supporting informed decision making and behavior change and go beyond the acquisition of knowledge.

Standard 7. An individual assessment and education plan will be developed collaboratively by the participant and instructor(s) to direct the selection of appropriate educational interventions and self-management support strategies. This assessment and education plan and the intervention and outcomes will be documented in the education record.

Multiple studies indicate the importance of individualizing education based on the assessment.[1,56,68,131-135] The assessment includes information about the individual's relevant medical history, age, cultural influences, health beliefs and attitudes, diabetes knowledge, self-management skills and behaviors, readiness to learn, health literacy level, physical limitations, family support, and financial status.[10-17,19,131,136-138] The majority of these studies support the importance of attitudes and health beliefs in diabetes care outcomes.[1,68,134,135,138,139]

In addition, functional health literacy (FHL) level can affect patients' self-management, communication with clinicians, and diabetes outcomes.[140,141] Simple tools exist for measuring FHL as part of an overall assessment process.[142-144]

Many people with diabetes who experience problems due to medication costs and asking patients about their ability to afford treatment are important.[144] Comorbid chronic illness (eg, depression and chronic pain) as well as more general psychosocial problems can pose significant barriers to diabetes self-management[104,146-151]; considering these issues in the assessment may lead to more effective planning.[149-151]

Periodic reassessment determines attainment of the educational objectives or the need for additional and creative interventions and future reassessment.[7,97,100,152] A variety of assessment modalities, including telephone follow-up and other information technologies (eg, Web-based, automated phone calls), may augment face-to-face assessments.[97,99]

While there is little direct evidence on the impact of documentation on patient outcomes, it is required to receive payment for services. In addition, documentation of patient encounters guides the educational process, provides evidence of communication among instructional staff, may prevent duplication of services, and provides information on adherence to guidelines.[37,64,100,131,153] Providing information to other members of the patient's health care team through documentation of educational objectives and personal behavioral goals increases the likelihood that all of the members will address these issues with the patient.[37,98,153]

The use of evidence-based performance and outcome measures has been adopted by organizations and initiatives such as the Centers for Medicare and Medicaid Services (CMS), the National Committee for Quality

Assurance (NCQA), the Diabetes Quality Improvement Project (DQIP), the Health Plan Employer Data and Information Set (HEDIS), the Veterans Administration Health System, and JCAHO.[26,154]

Research suggests that the development of standardized procedures for documentation, training of health professionals to document appropriately, and the use of structured standardized forms based on current practice guidelines can improve documentation and may ultimately improve quality of care.[100,153-156]

Standard 8. A personalized follow-up plan for ongoing self-management support will be developed collaboratively by the participant and instructor(s). The patient's outcomes and goals and the plan for ongoing self-management support will be communicated to the referring provider.

While DSME is necessary, it is not sufficient for patients to sustain a lifetime of diabetes self-care.[55] Initial improvements in metabolic and other outcomes diminish after ~6 months.[3] To sustain behavior at the level of self-management needed to effectively manage diabetes, most patients need ongoing diabetes self-management support (DSMS).

DSMS is defined as activities to assist the individual with diabetes to implement and sustain the ongoing behaviors needed to manage their illness. The type of support provided can include behavioral, educational, psychosocial, or clinical.[13,121-123]

A variety of strategies are available for providing DSMS both within and outside the DSME entity. Some patients benefit from working with a nurse case manager.[7,20,98,157] Case management for DSMS can include reminders about needed follow-up care and tests, medication management, education, behavioral goal setting, and/or psychosocial support and connection to community resources.

The effectiveness of providing DSMS through disease-management programs, peers and community workers, community-based programs, use of technology, ongoing education and support groups, and medical nutrition therapy has also been established.7,13,89-92,101,121-123,158,159

While the primary responsibility for diabetes education belongs to the DSME entity, patients benefit by receiving reinforcement of content and behavioral goals from their entire health care team.[100] In addition, many patients receive DSMS through their provider. Thus, communication is essential to ensure that patients receive the support they need.

Outcomes

Standard 9. The DSME entity will measure attainment of patient-defined goals and patient outcomes at regular intervals using appropriate measurement techniques to evaluate the effectiveness of the educational intervention.

In addition to program-defined goals and objectives (eg, learning goals, metabolic, and other health outcomes), the DSME entity needs to assess each patient's personal self-management goals and his or her progress toward those personal goals. The AADE7 self-care behaviors provide a useful framework for assessment and documentation. Diabetes self-management behaviors include physical activity, eating, medication taking, monitoring blood glucose, diabetes self-care–related problem solving, reducing risks of acute and chronic complications, and psychosocial aspects of living with diabetes.[112,160] Assessments of patient outcomes should occur at appropriate intervals. The interval depends on the outcome itself and the time frame provided within the selected goals. For some areas, the indicators, measures, and time frames may be based on guidelines from professional organizations or government agencies. In addition to assessing progress toward personal behavioral goals, a plan needs to be in place to communicate personal goals and progress to other team members.

The AADE Outcome Standards for Diabetes Education specify self-management behavior as the key outcome.[112,160] Knowledge is an outcome to the degree that it is actionable (ie, knowledge that can be translated into self-management behavior). In turn, effective self-management is one (but not the only) contributor to longer term, higher order outcomes such as clinical status (eg, control of glycemia, blood pressure, and cholesterol), health status (eg, avoidance of complications), and subjective quality of life. Thus, patient self-management behaviors are at the core of the outcomes evaluation.

Standard 10. The DSME entity will measure the effectiveness of the education process and determine opportunities for improvement using a written continuous quality improvement plan that describes and documents a systematic review of the entities' process and outcome data.

Diabetes education must be responsive to advances in knowledge, treatment strategies, educational strategies, psychosocial interventions, and the changing health care environment. Continuous quality improvement (CQI) is an iterative, planned process[161] that leads to improvement

in the delivery of patient education.[162] The CQI plan should define quality based on and consistent with the organization's mission, vision, and strategic plan and include identifying and prioritizing improvement opportunities.[163] Once improvement projects are identified and selected, the plan should incorporate timelines and important milestones including data collection, analysis, and presentation of results.[163] Outcome measures indicate the result of a process (ie, whether changes are actually leading to improvement), while process measures provide information about what caused those results.[163,164] Process measures are often targeted to those processes that typically impact the most important outcomes. Measuring both process and outcomes helps to ensure that change is successful without causing additional problems in the system.[164]

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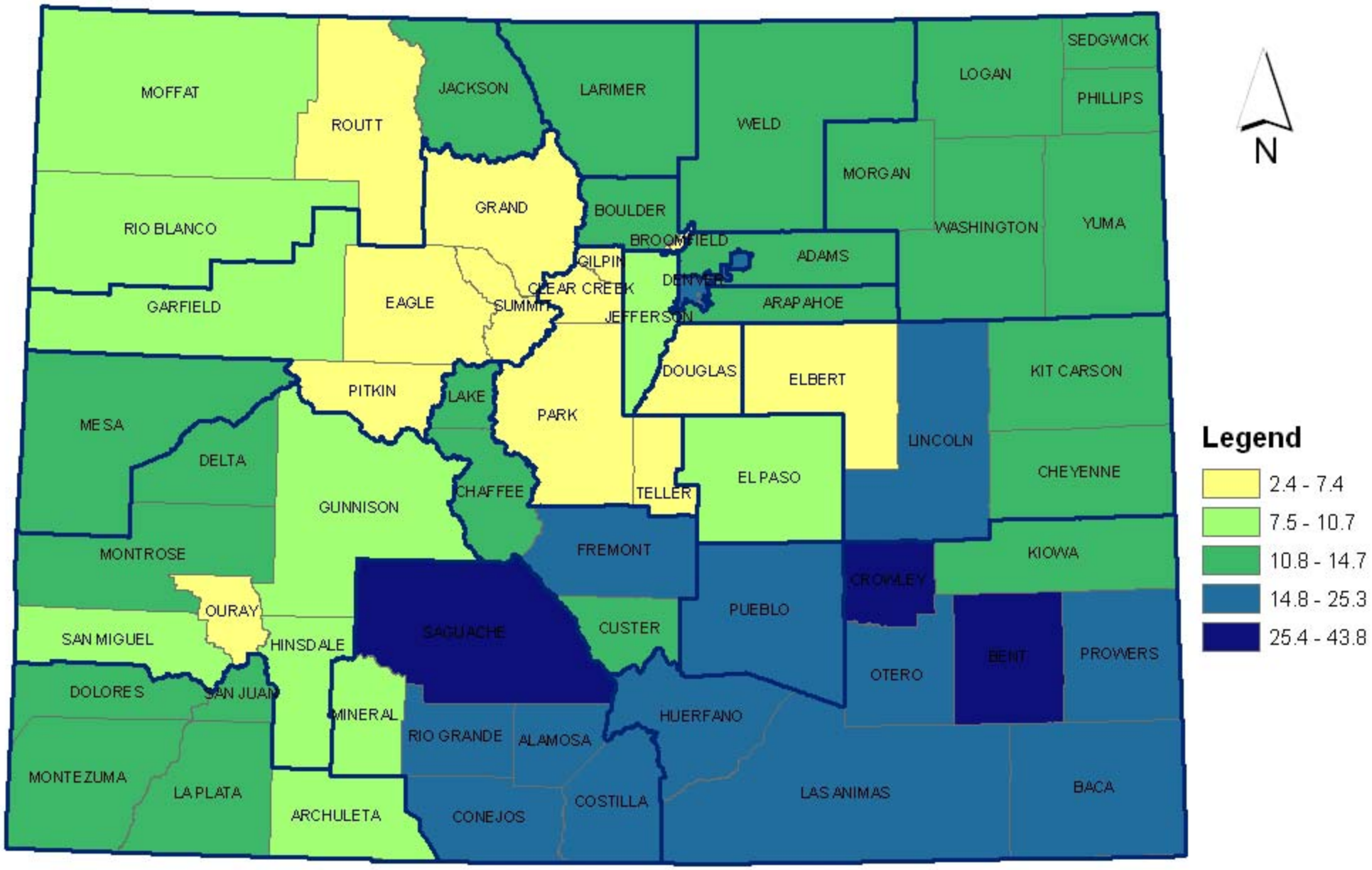
Percent of Population (All Ages) in Poverty by County*

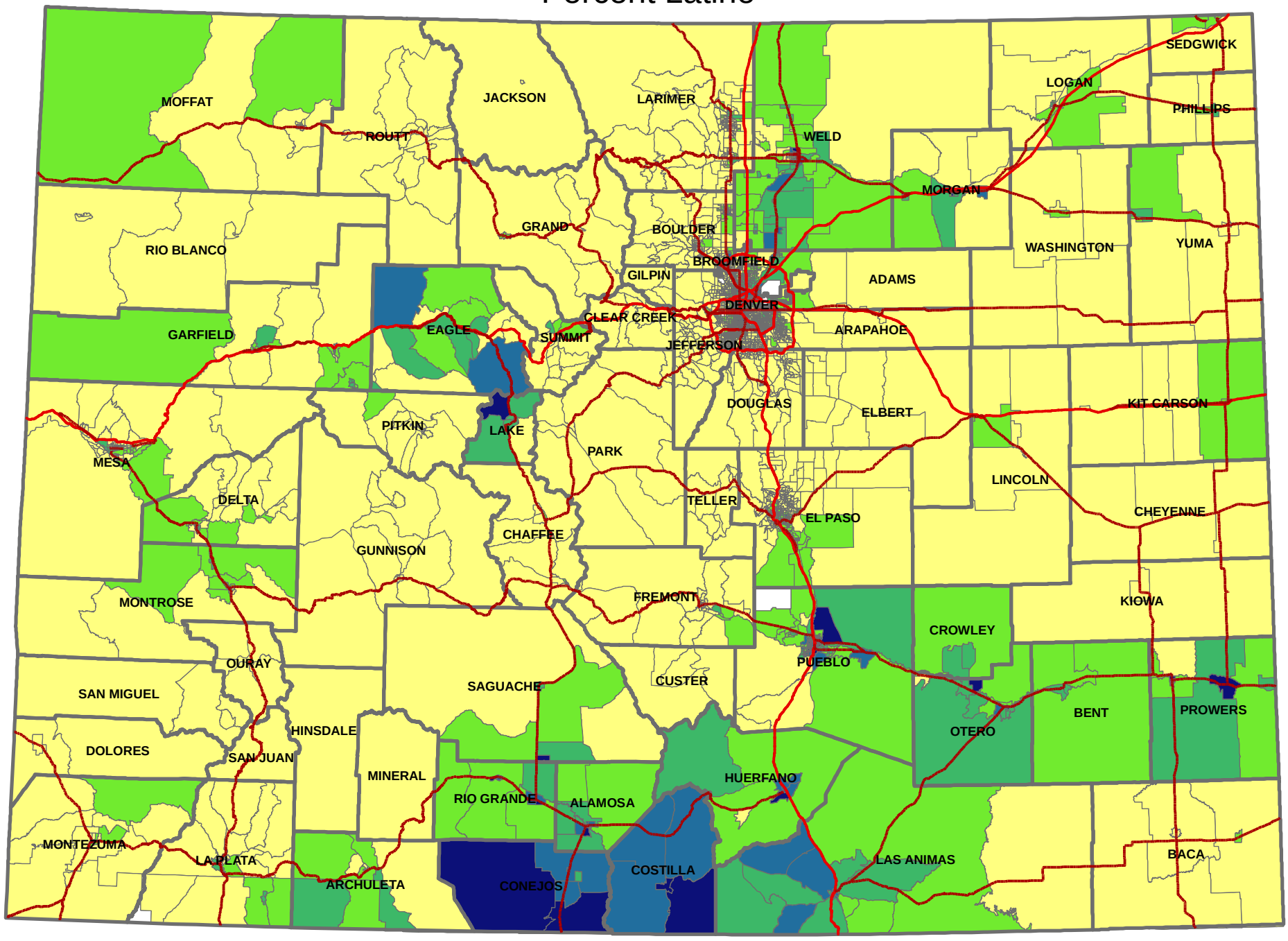
Source: United States Census Bureau, Small Area Income and Poverty Estimates (SAIPE), 2007

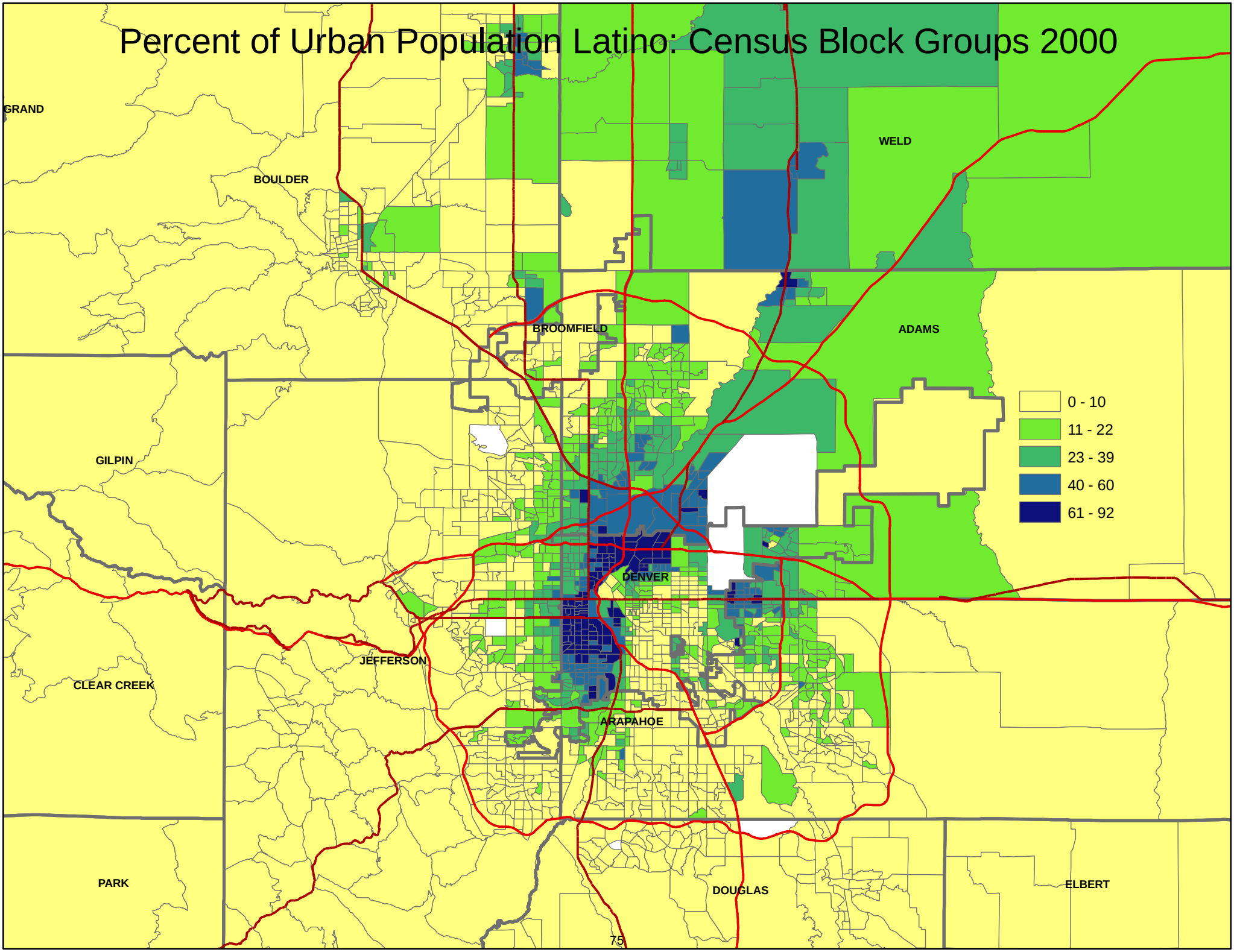


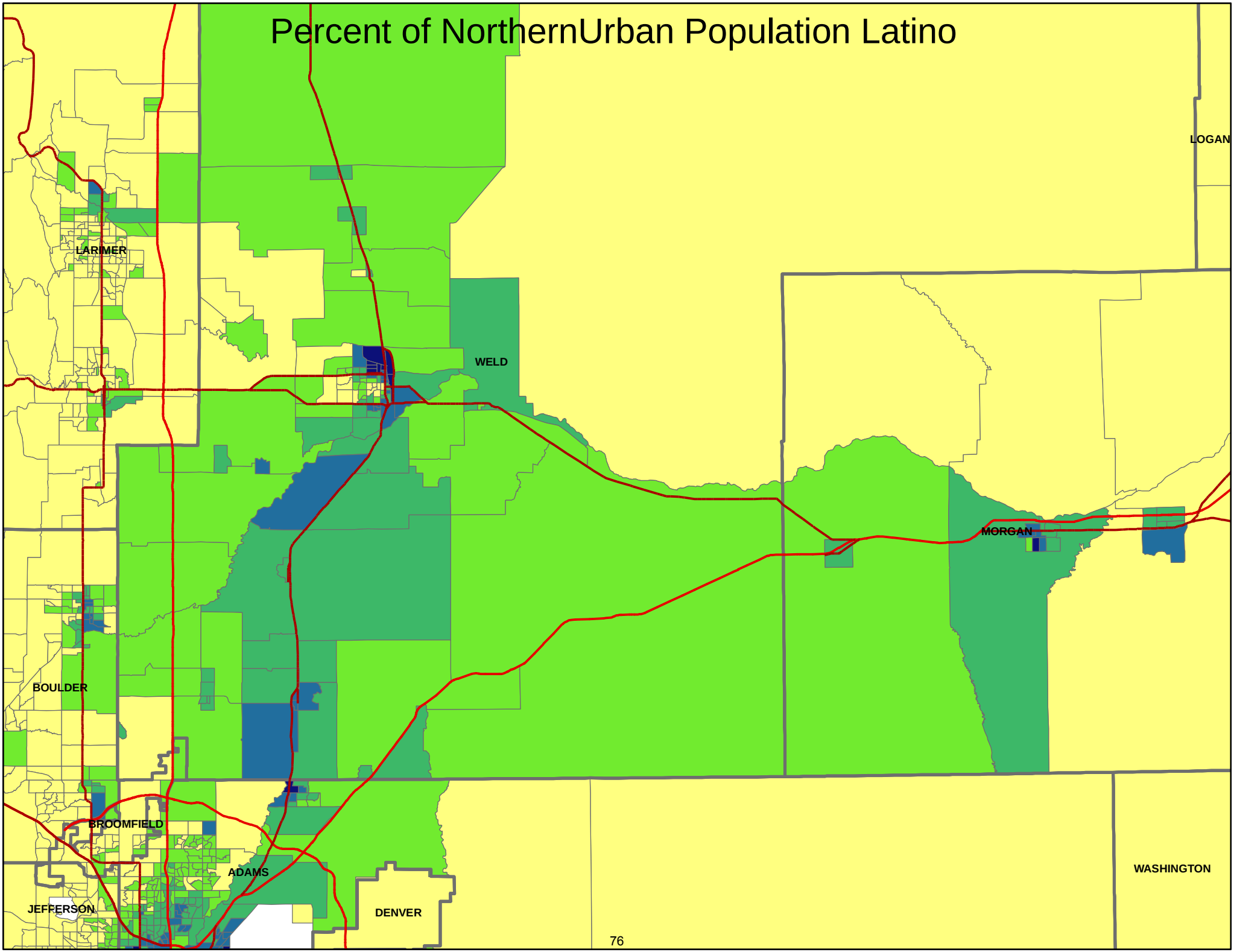
Created by the Epidemiology, Planning and Evaluation Branch,
Colorado Department of Public Health and Environment, April 2009

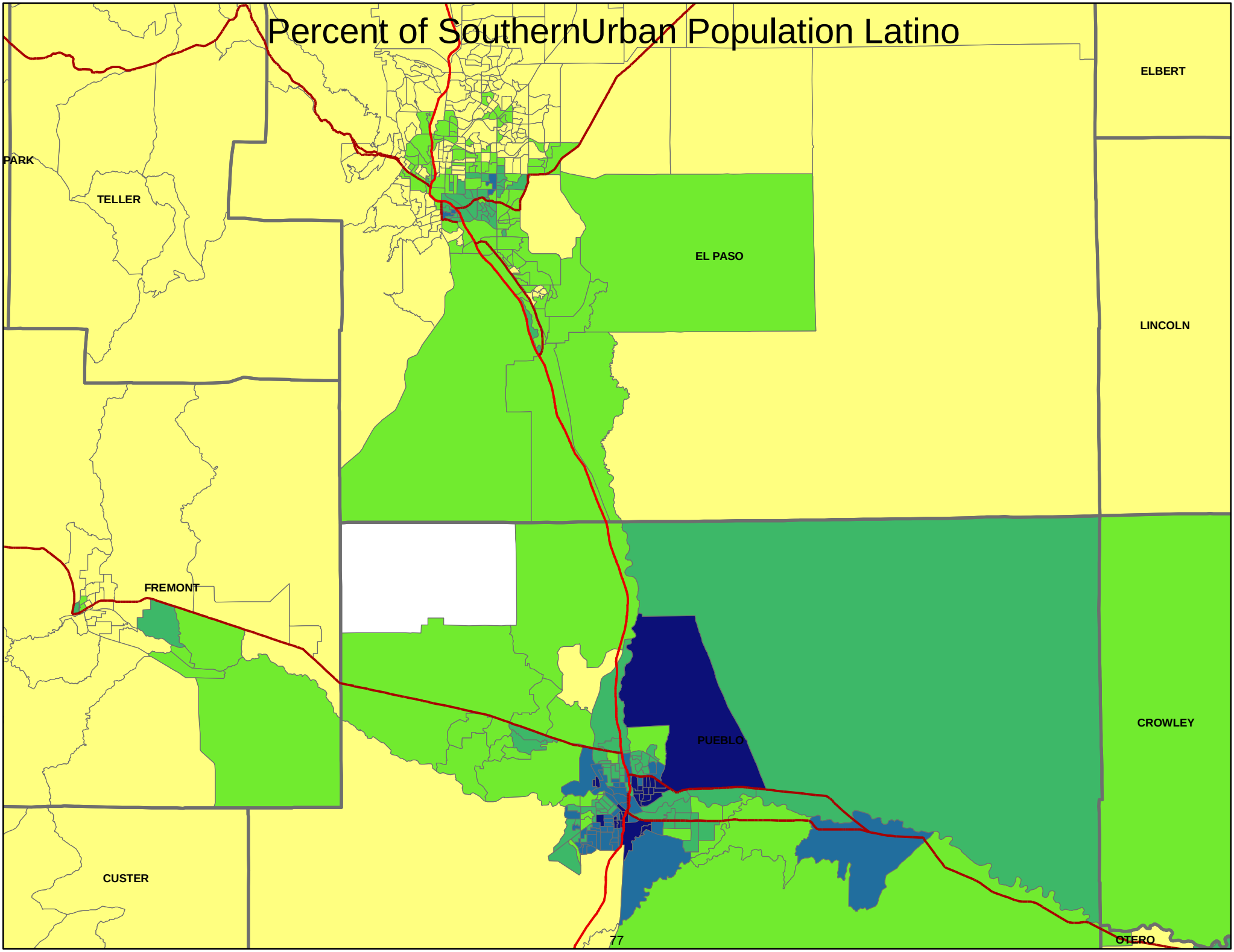
*Health Statistics Regions are outlined

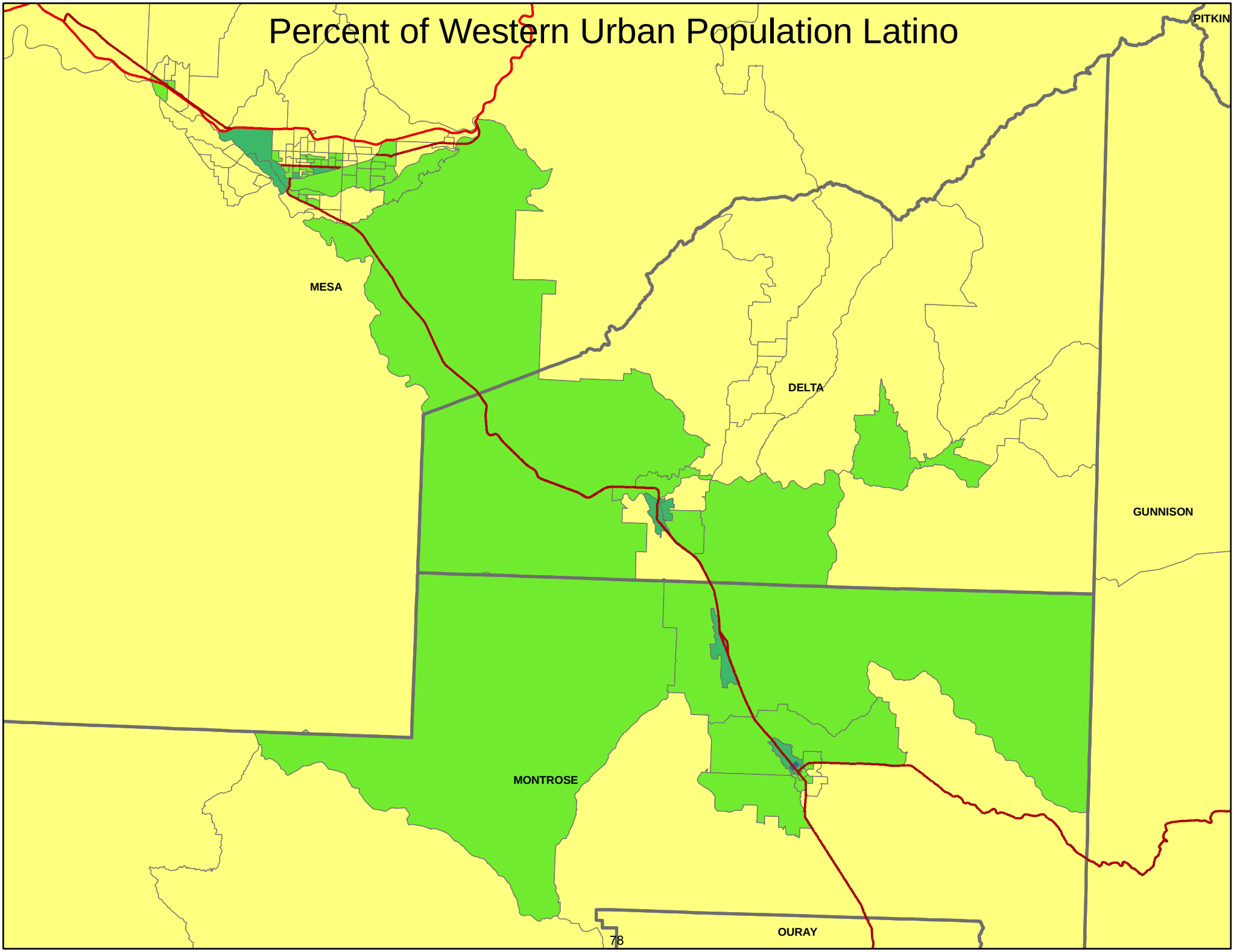
Colorado Population 2000 by Census Block Groups: Percent Latino



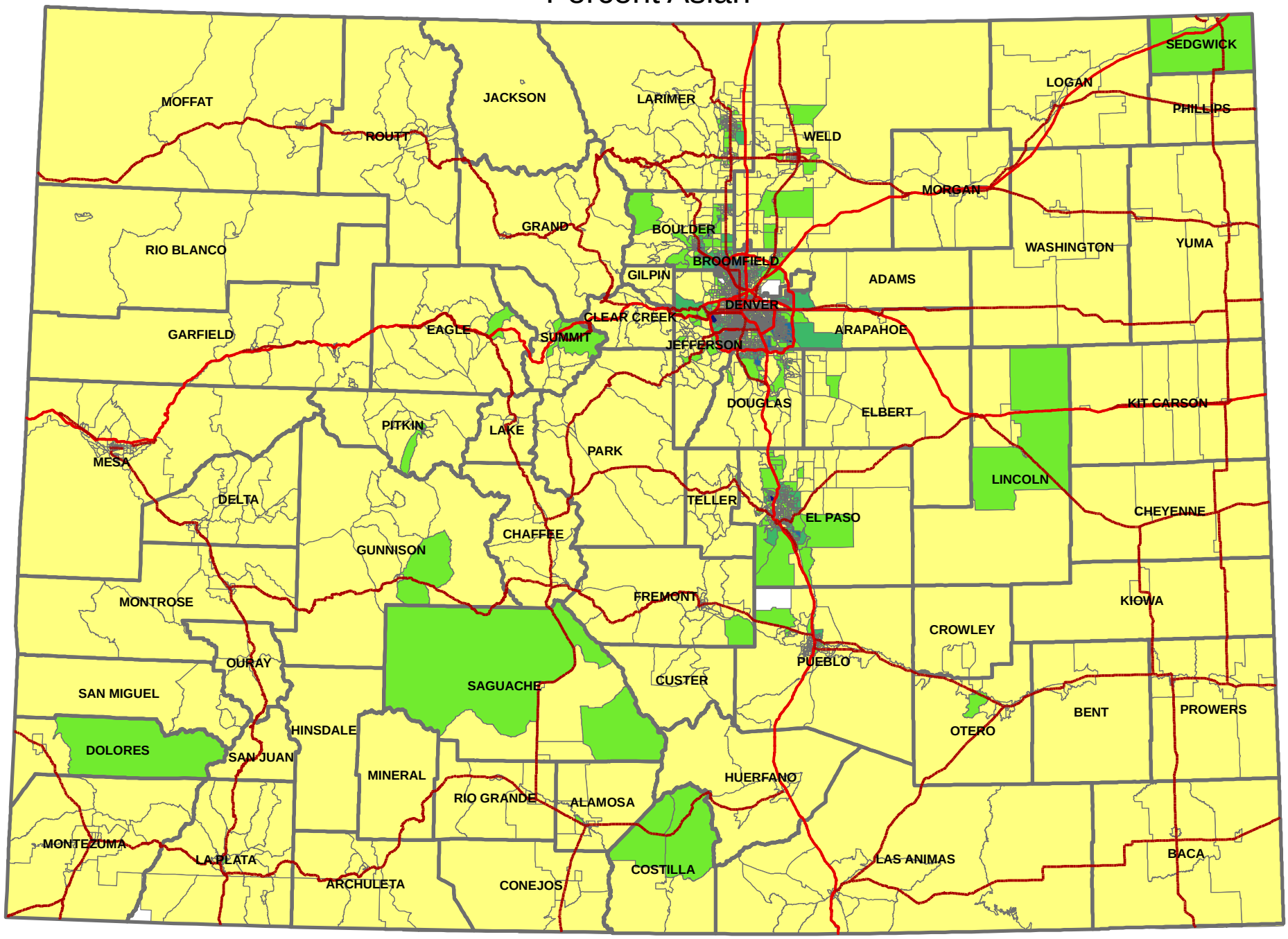

Percent of Urban Population Latino: Census Block Groups 2000
GRAND
BOULDER
WELD
BROOMFIELD
ADAMS
GILPIN
DENVER
JEFFERSON
CLEAR CREEK
ARAPAHOE
PARK
DOUGLAS
ELBERT
75
0 - 10
11 - 22
23 - 39
40 - 60
61 - 92

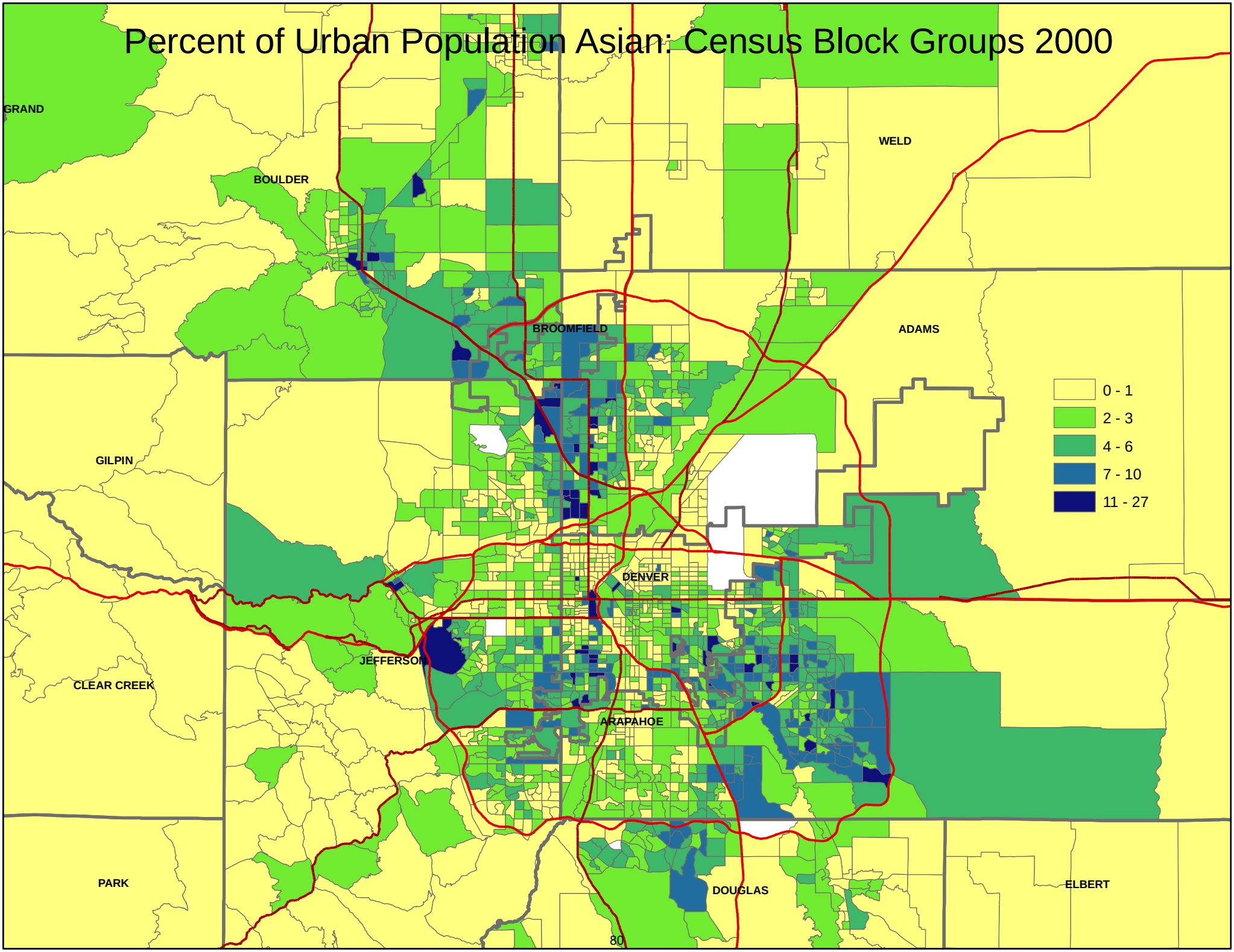

Percent of NorthernUrban Population Latino
LOGAN
LARIMER
WELD
MORGAN
BOULDER
BROOMFIELD
ADAMS
JEFFERSON
DENVER
WASHINGTON

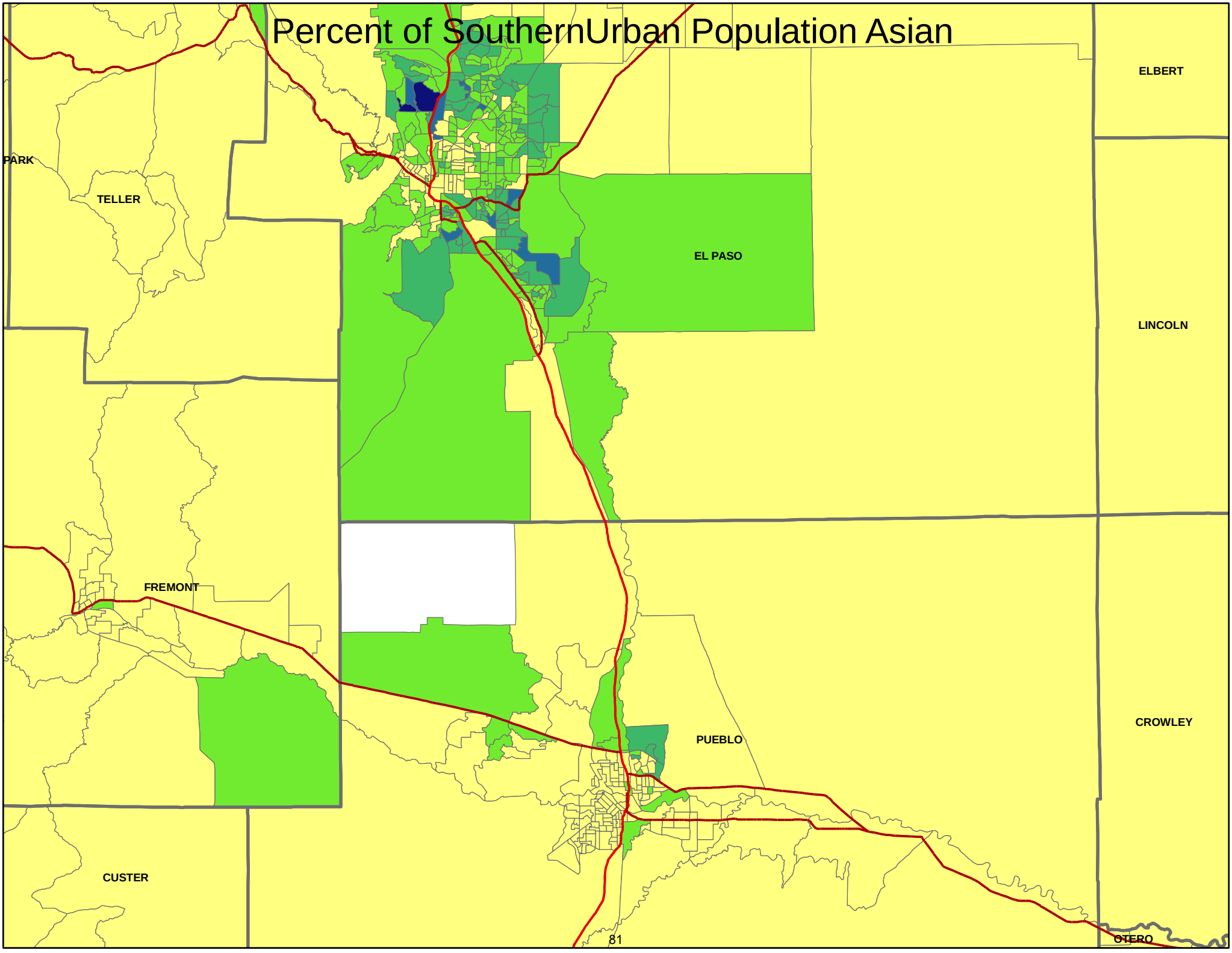

Percent of SouthernUrban Population Latino
ELBERT
PARK
TELLER
EL PASO
LINCOLN
FREMONT
PUEBLO
CROWLEY
CUSTER
OTERO


Percent of Western Urban Population Latino
PITKIN
MESA
DELTA
GUNNISON
MONTROSE
OURAY

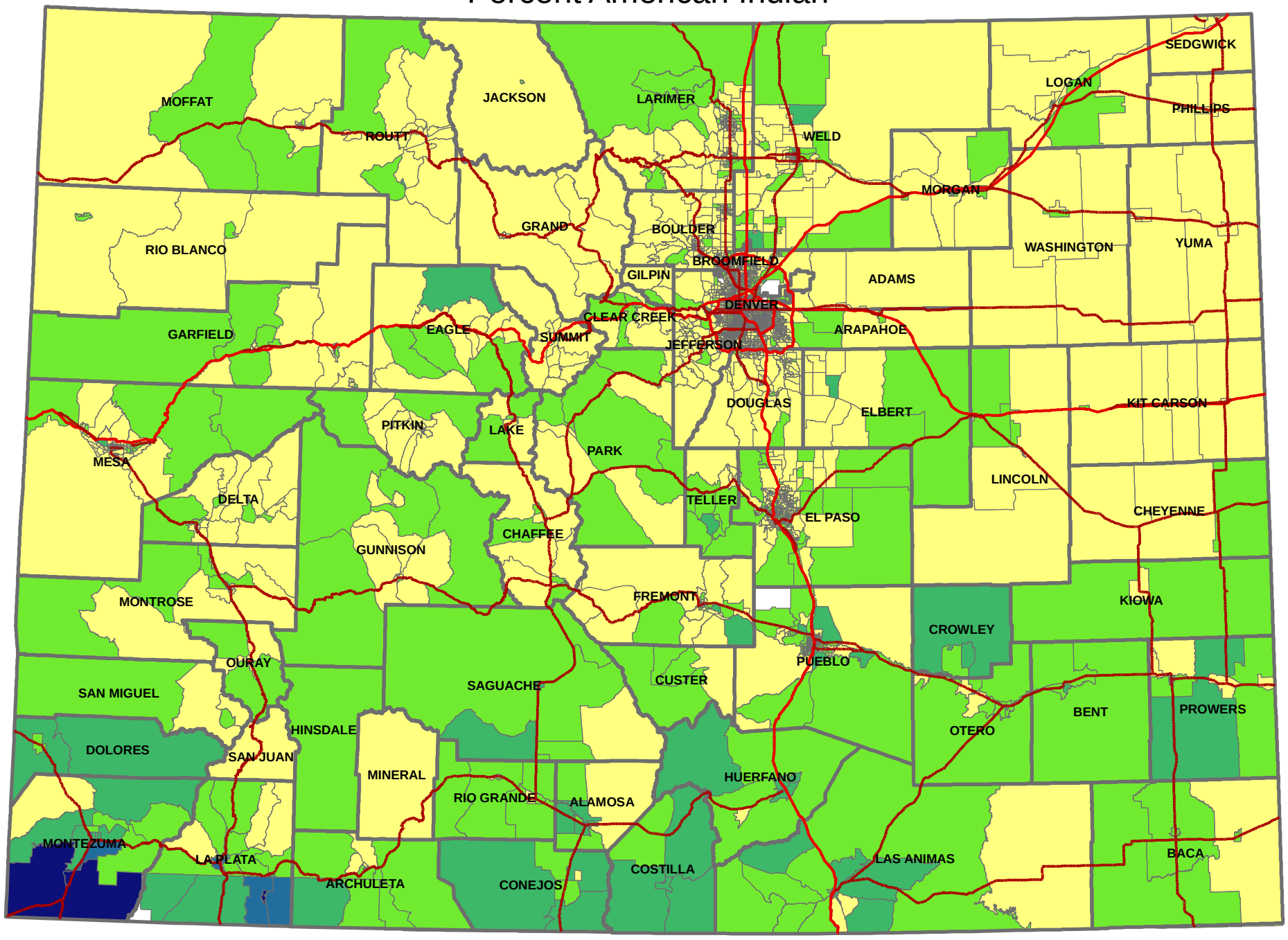
Colorado Population 2000 by Census Block Groups: Percent Asian

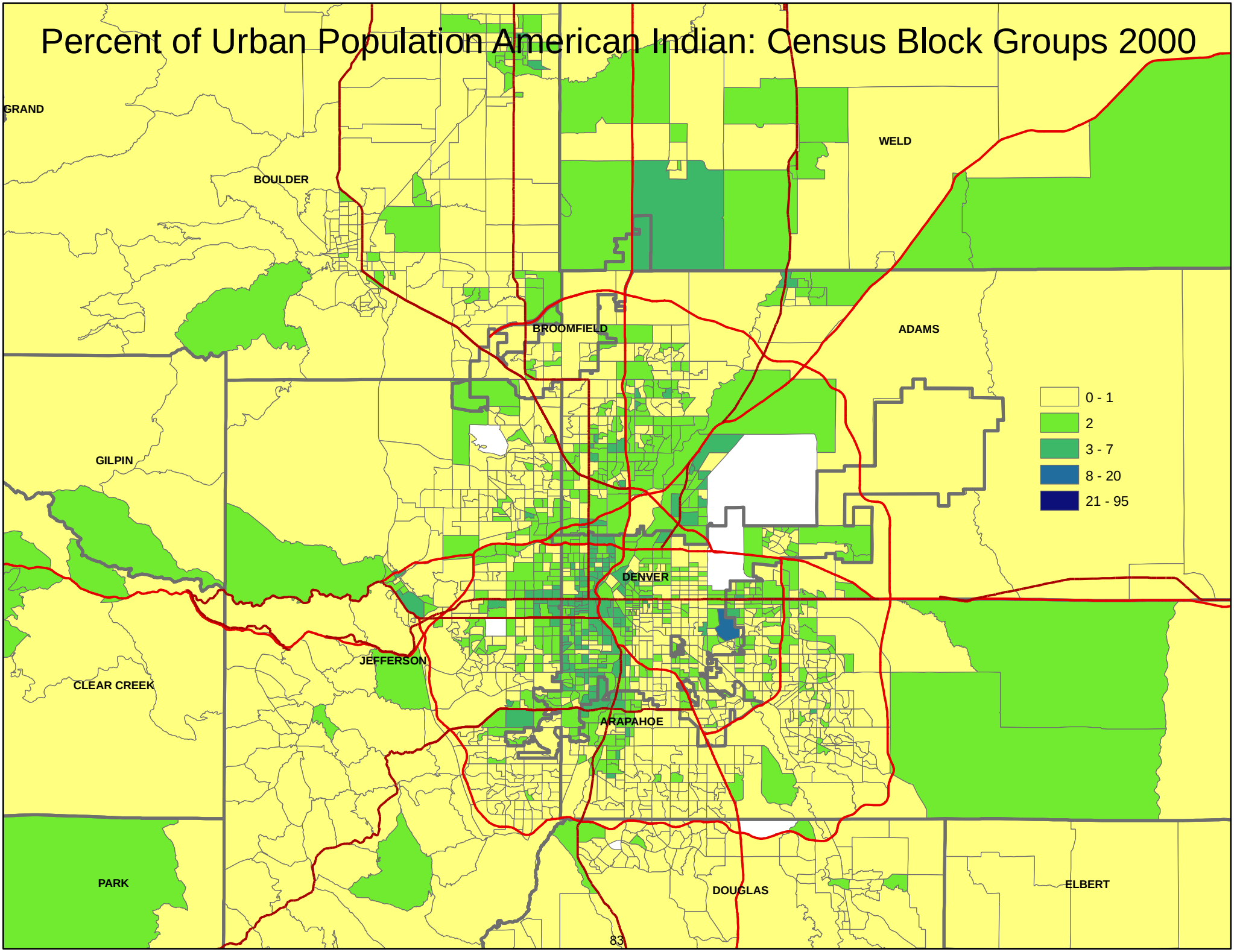


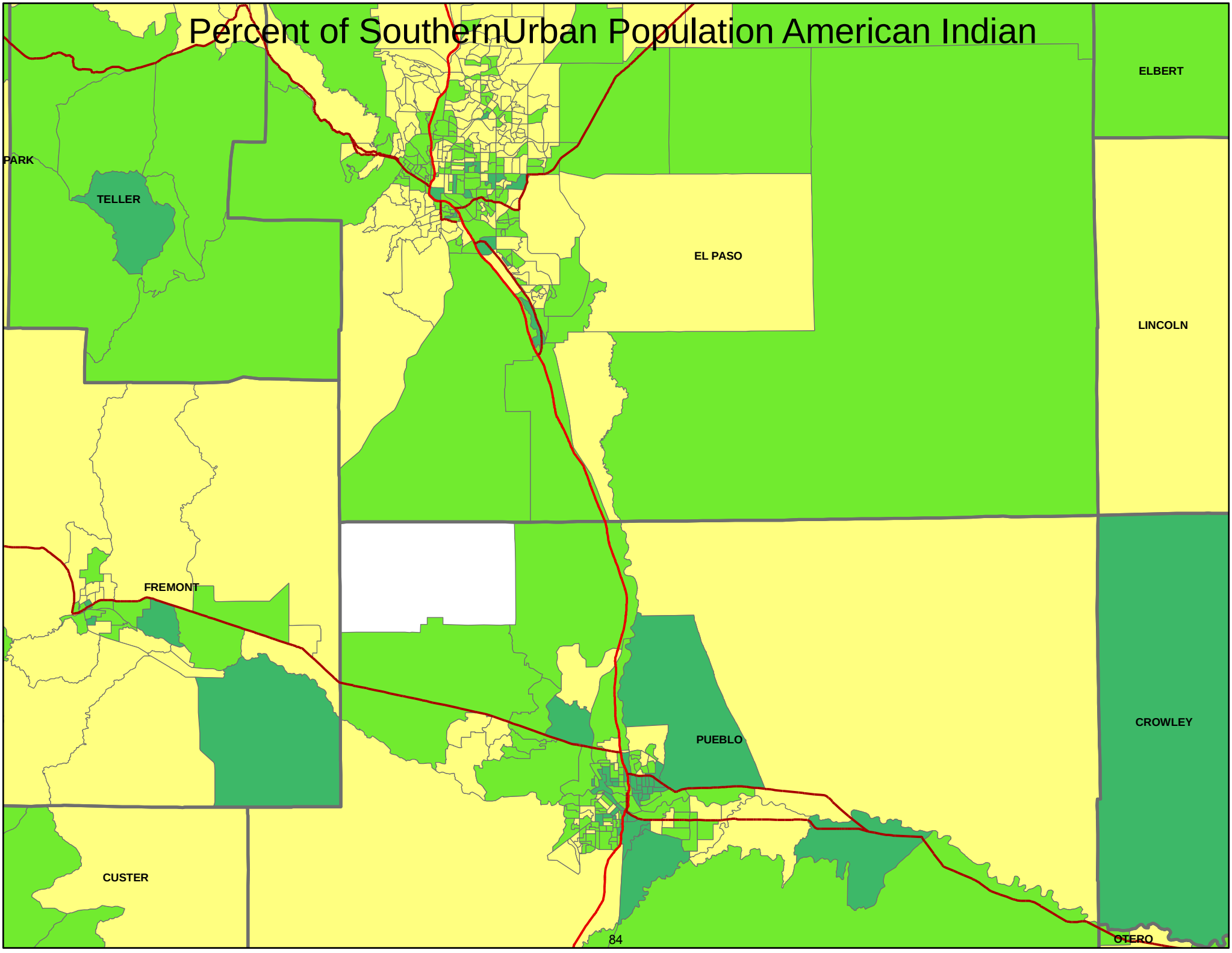

Percent of Urban Population Asian: Census Block Groups 2000
GRAND
BOULDER
WELD
BROOMFIELD
ADAMS
GILPIN
DENVER
JEFFERSON
CLEAR CREEK
ARAPAHOE
PARK
DOUGLAS
ELBERT
0 - 1
2 - 3
4 - 6
7 - 10
11 - 27

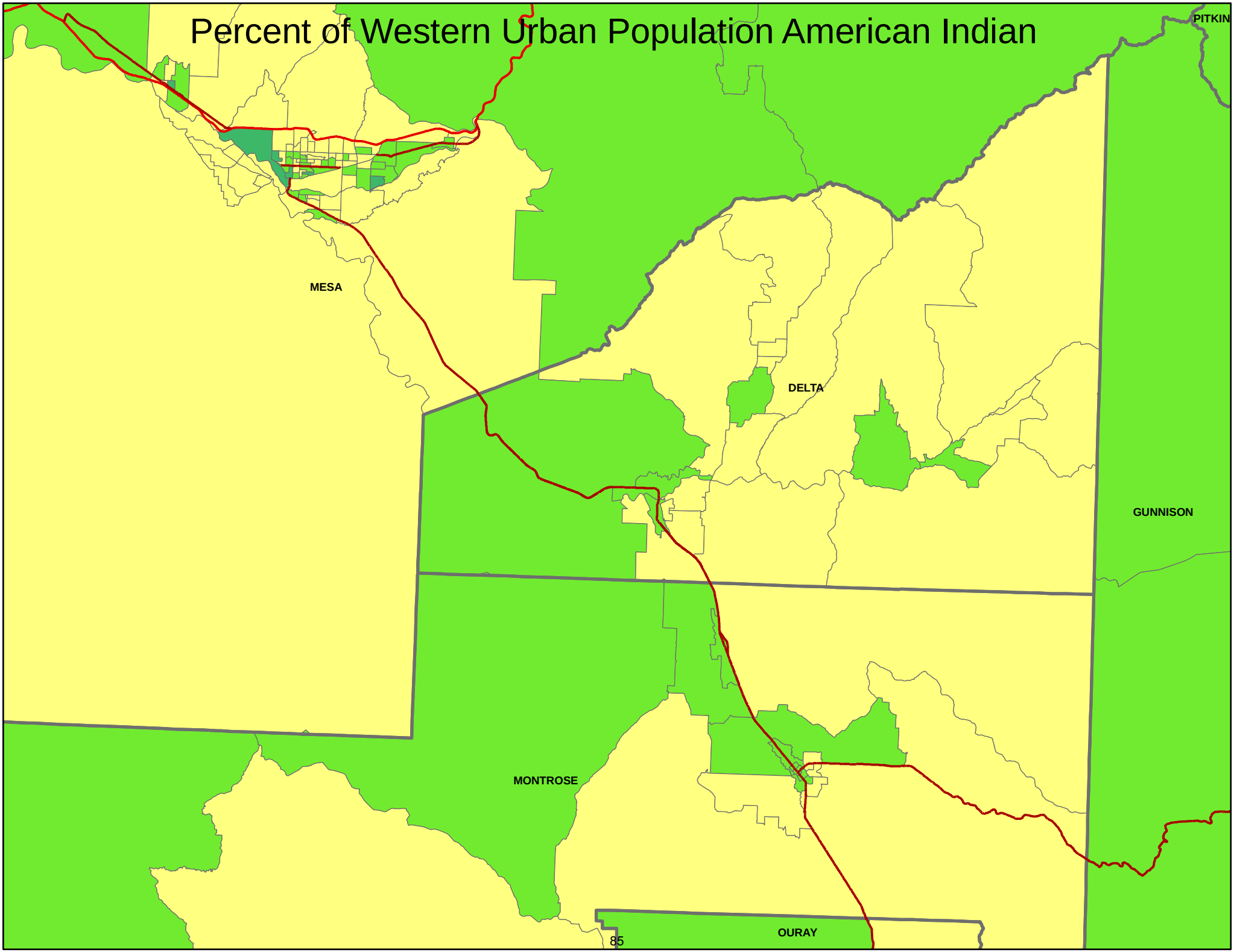

Percent of SouthernUrban Population Asian
ELBERT
PARK
TELLER
EL PASO
LINCOLN
FREMONT
PUEBLO
CROWLEY
CUSTER
81
OTERO

Colorado Population 2000 by Census Block Groups: Percent American Indian

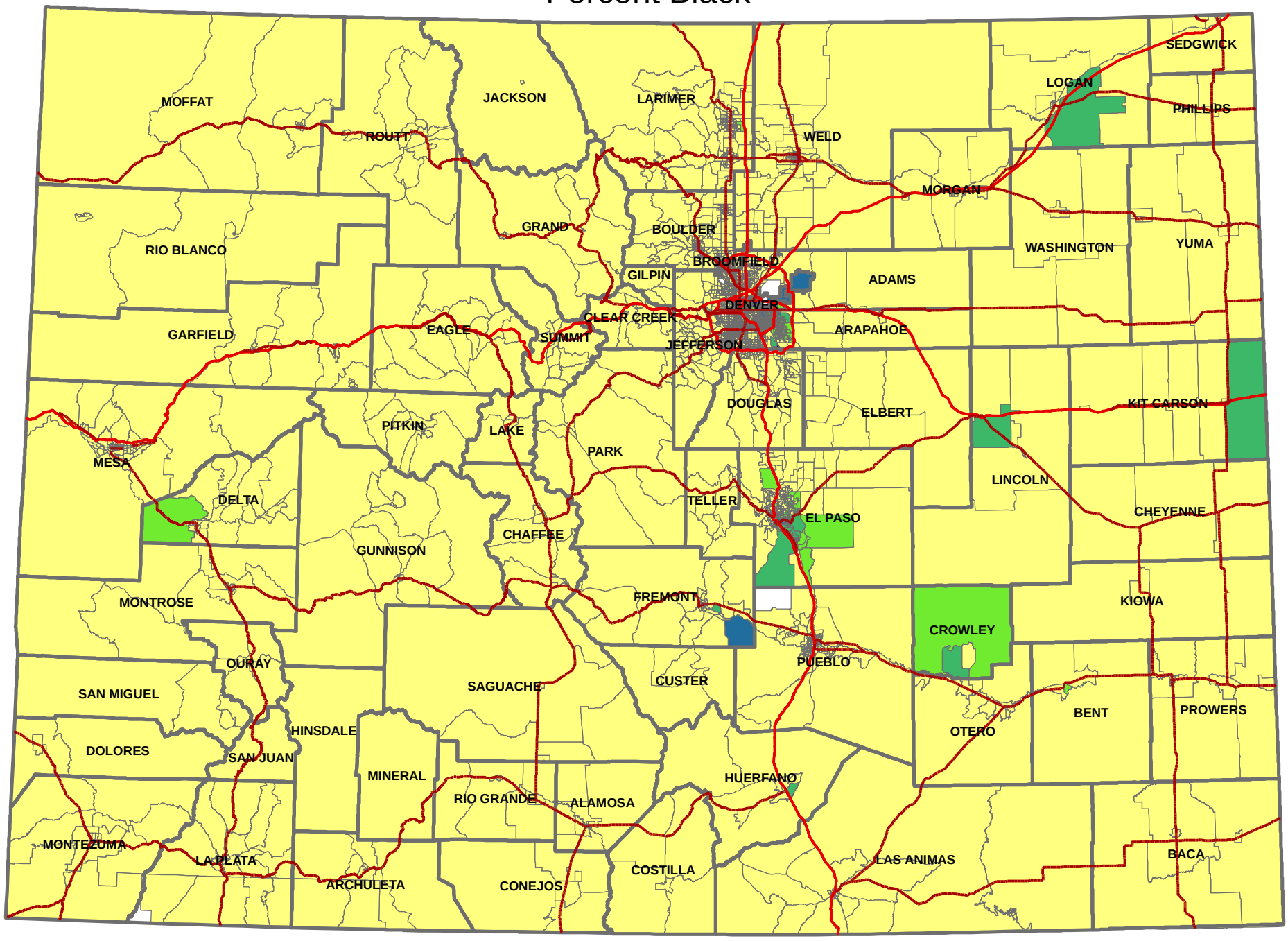


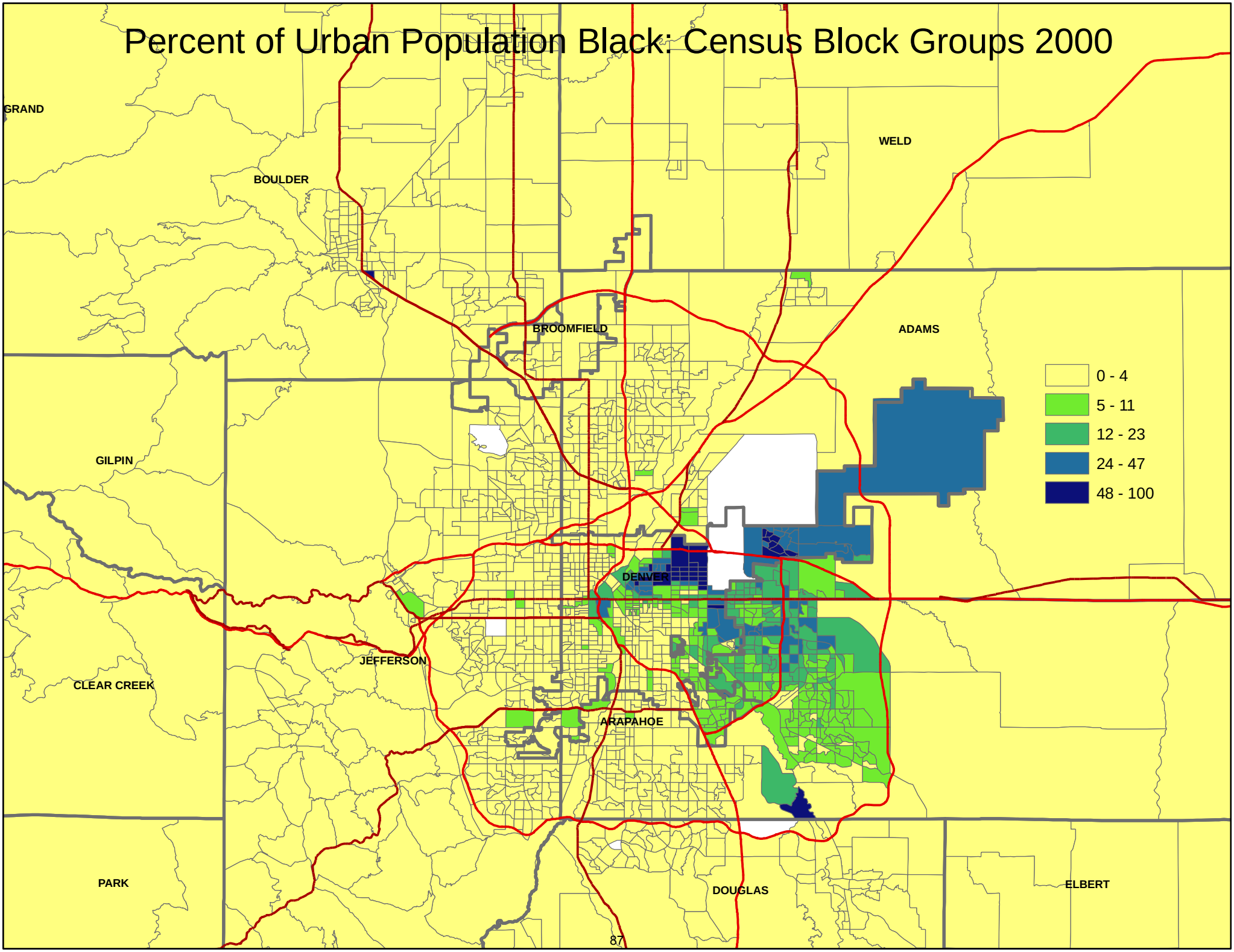

Percent of Urban Population American Indian: Census Block Groups 2000
GRAND
BOULDER
WELD
BROOMFIELD
ADAMS
GILPIN
DENVER
JEFFERSON
CLEAR CREEK
ARAPAHOE
PARK
DOUGLAS
ELBERT
0 - 1
2
3 - 7
8 - 20
21 - 95

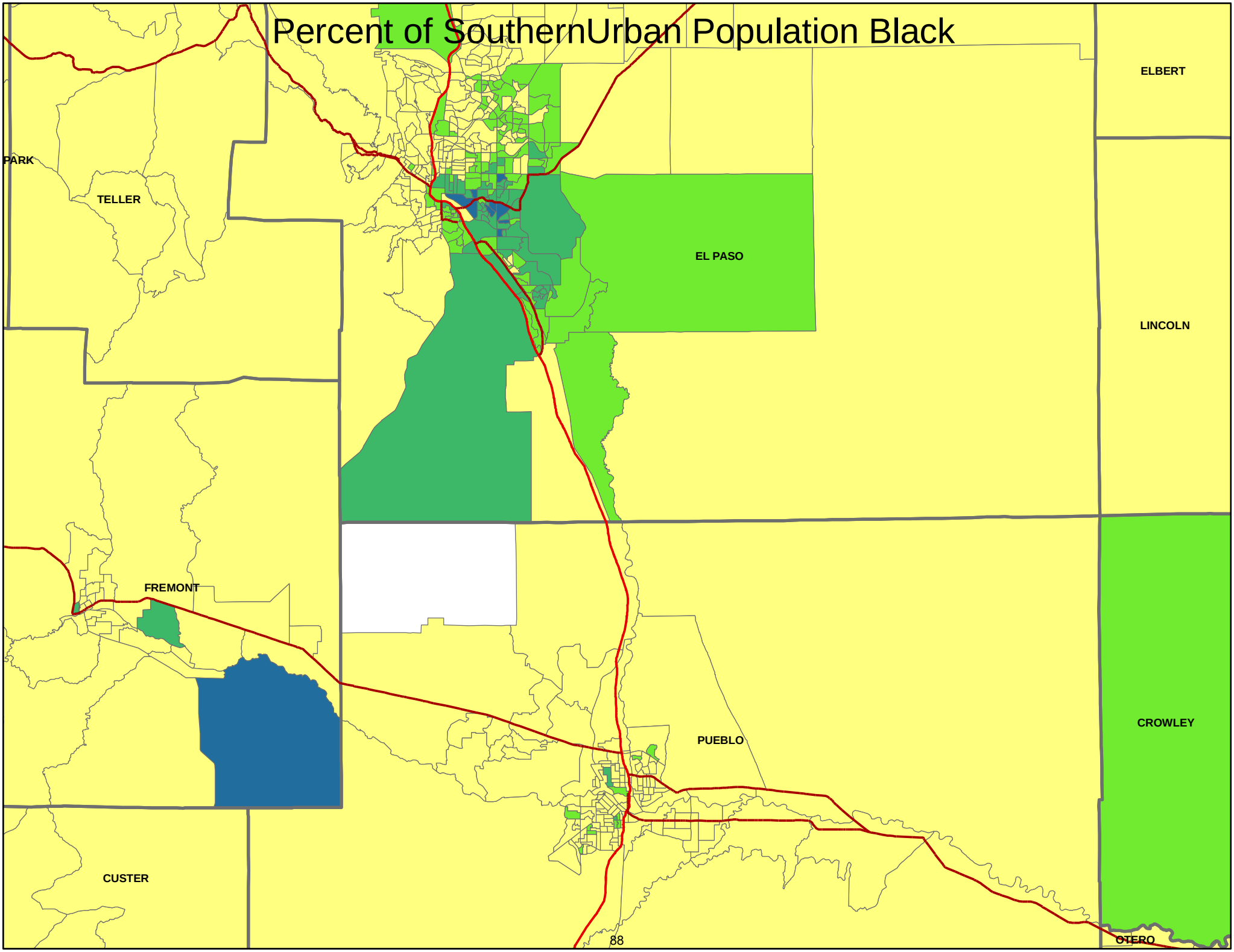

Percent of SouthernUrban Population American Indian
ELBERT
PARK
TELLER
EL PASO
LINCOLN
FREMONT
PUEBLO
CROWLEY
CUSTER
84
OTERO


Percent of Western Urban Population American Indian
PITKIN
MESA
DELTA
GUNNISON
MONTROSE
OURAY
85

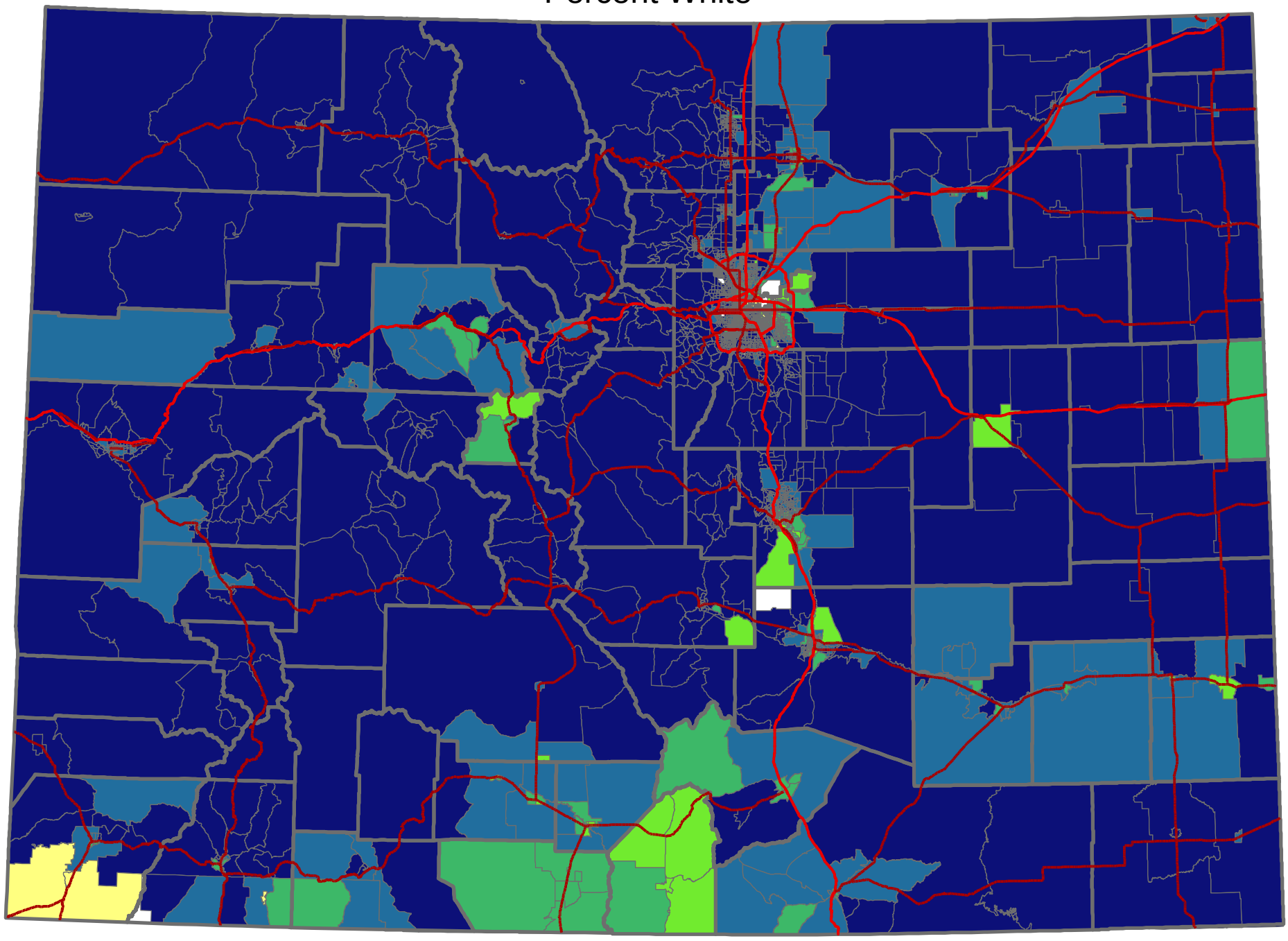
Colorado Population 2000 by Census Block Groups: Percent Black

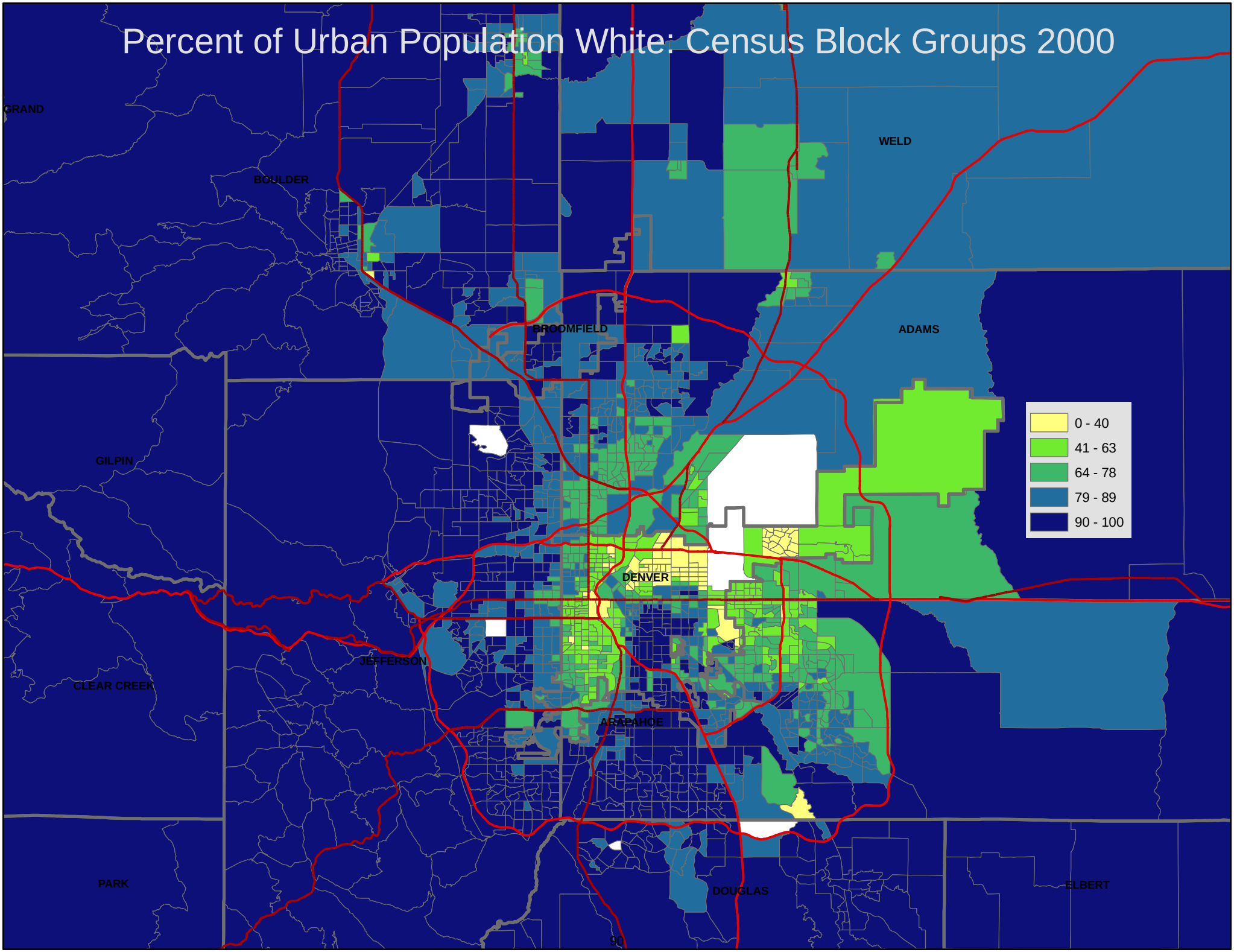



Percent of Urban Population Black: Census Block Groups 2000
GRAND
BOULDER
WELD
BROOMFIELD
ADAMS
GILPIN
DENVER
JEFFERSON
CLEAR CREEK
ARAPAHOE
PARK
DOUGLAS
ELBERT
0 - 4
5 - 11
12 - 23
24 - 47
48 - 100

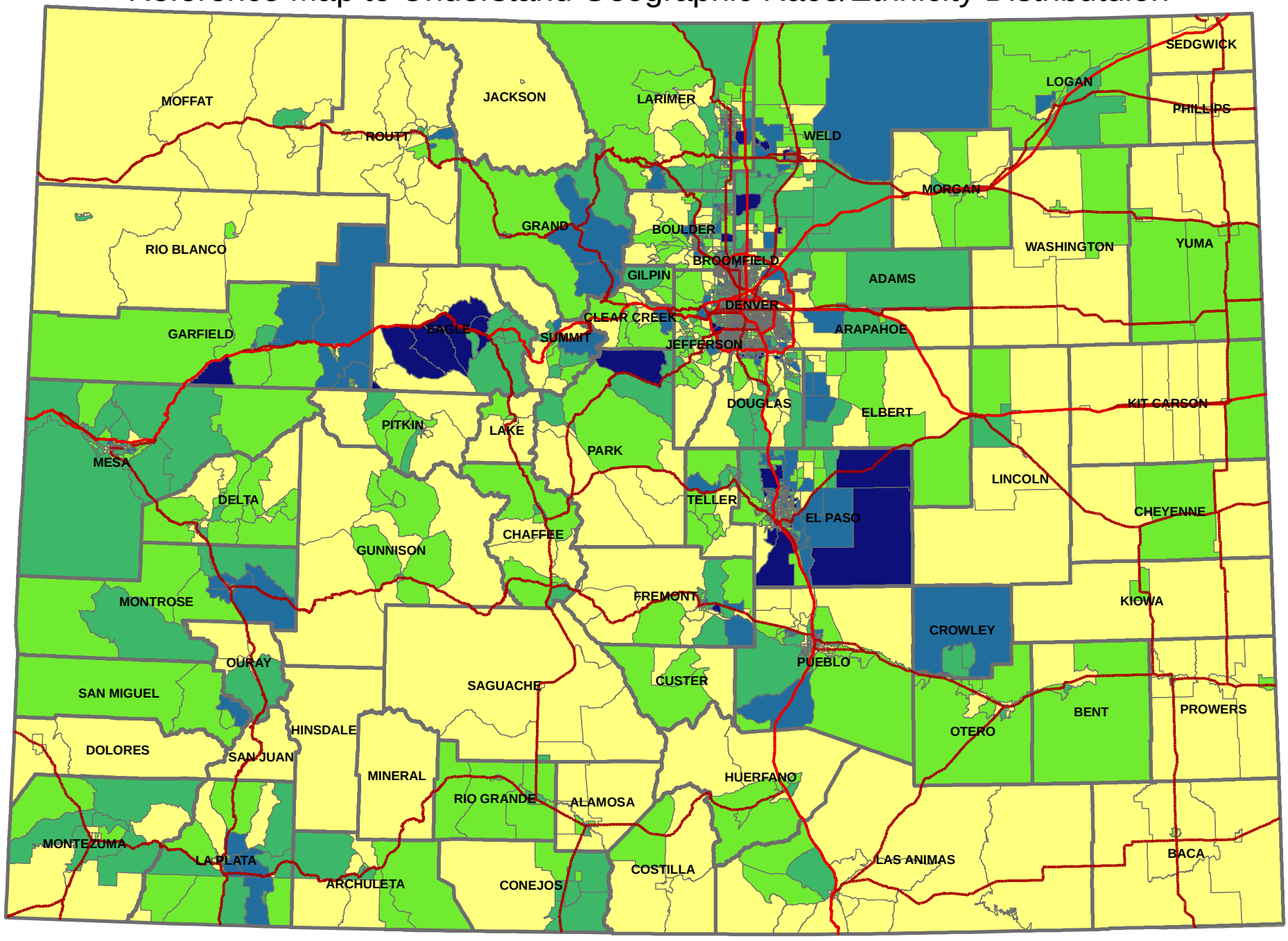

Percent of SouthernUrban Population Black
ELBERT
PARK
TELLER
EL PASO
LINCOLN
FREMONT
PUEBLO
CROWLEY
CUSTER
88
OTERO

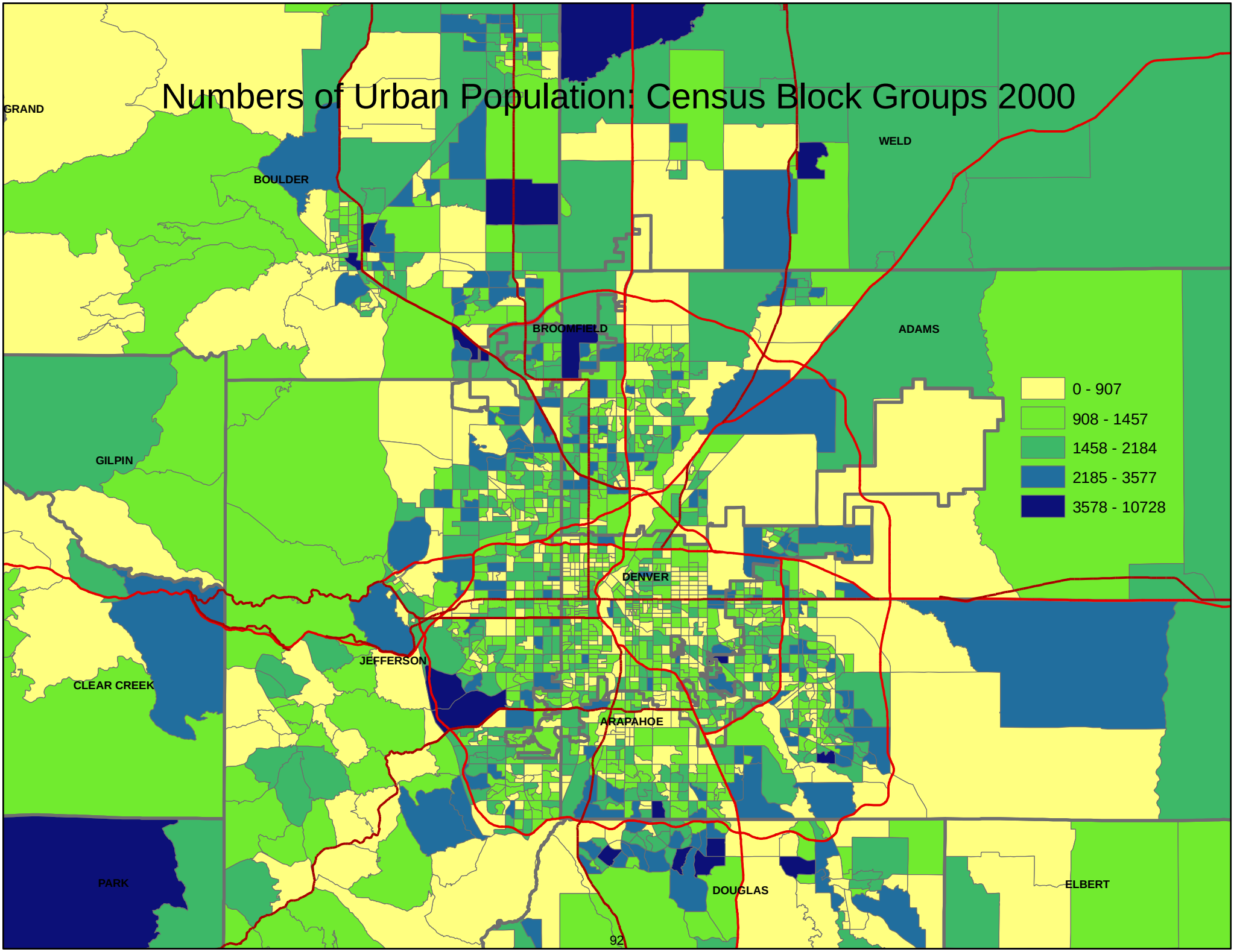
Colorado Population 2000 by Census Block Groups: Percent White

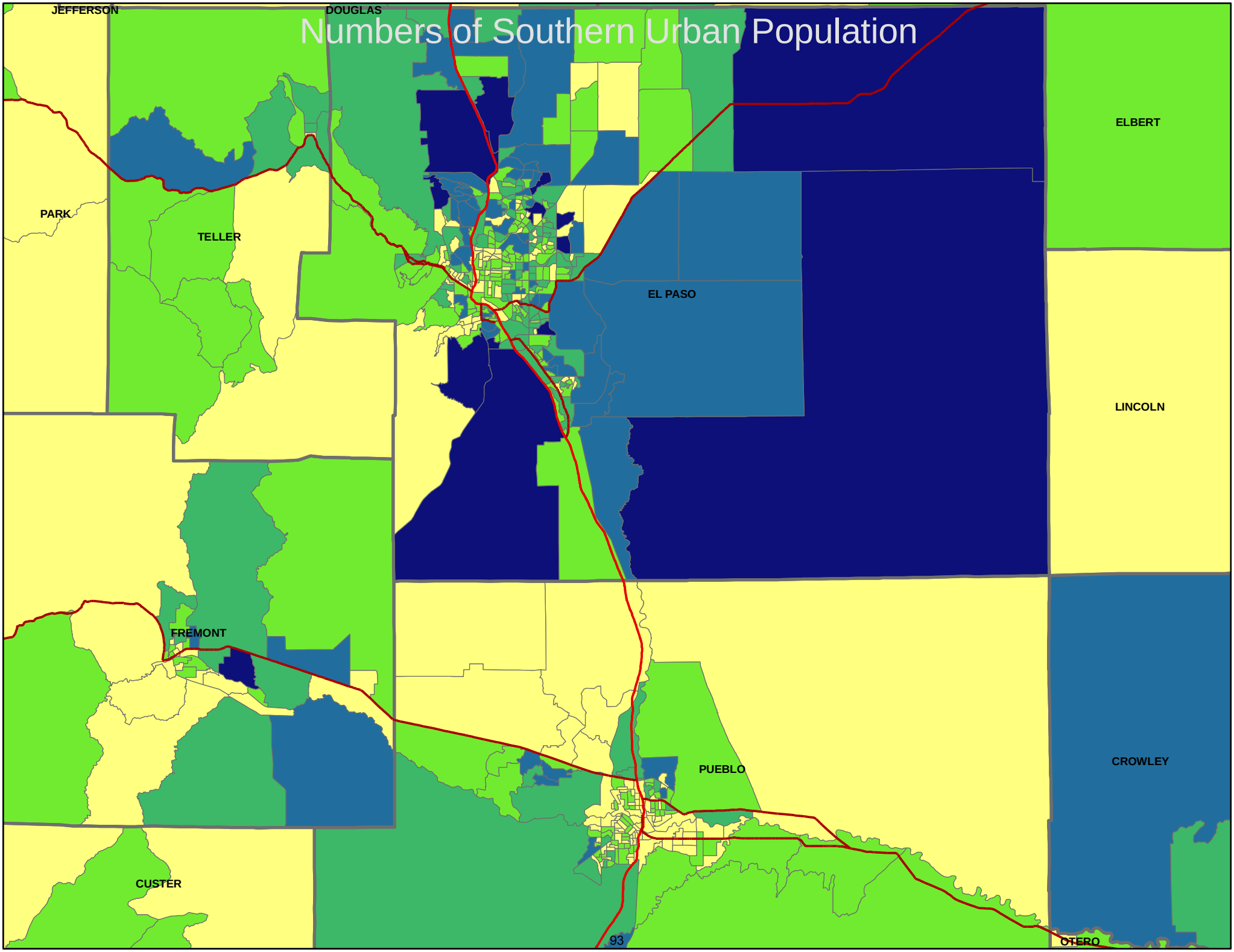


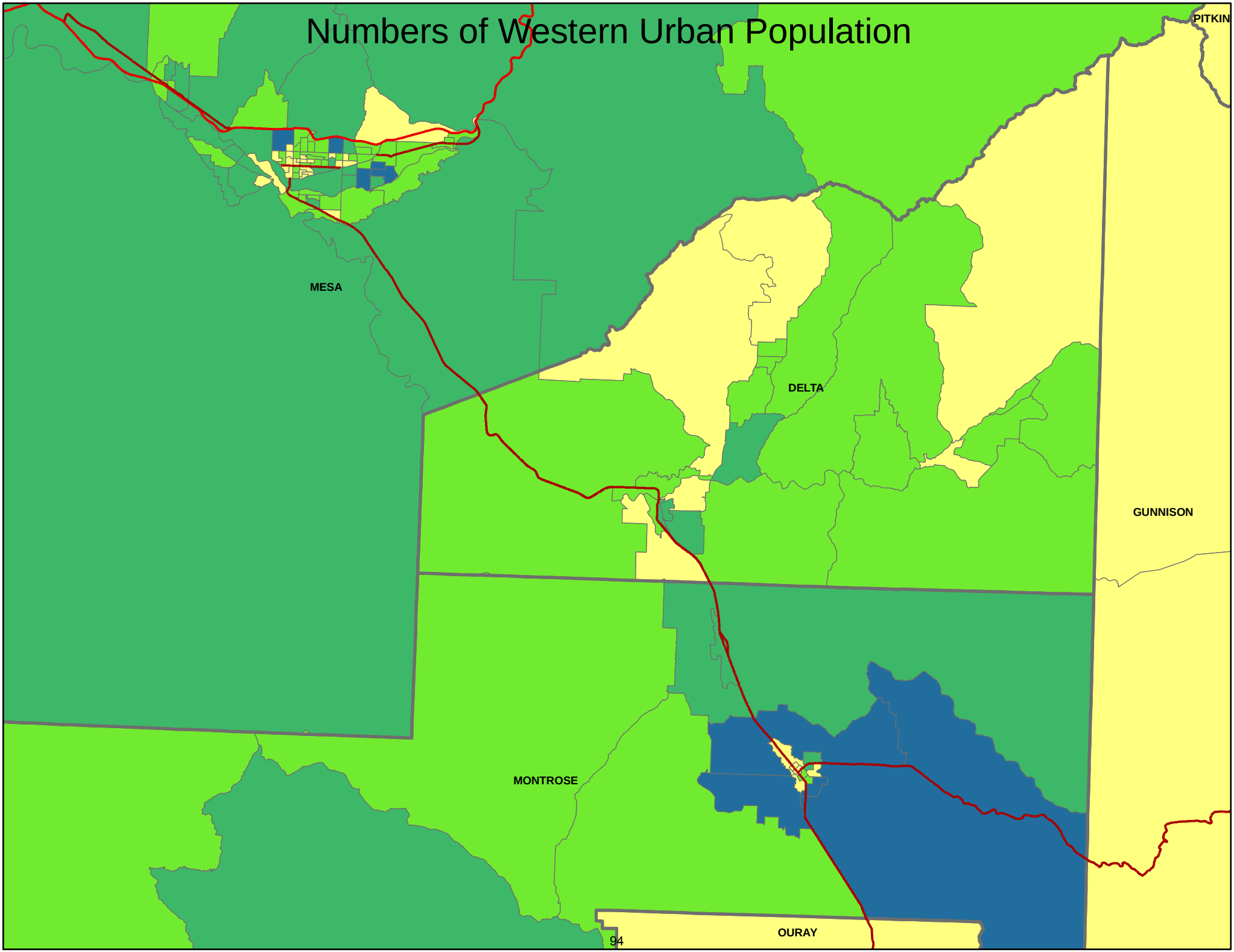

Percent of Urban Population White: Census Block Groups 2000
GRAND
BOULDER
WELD
BROOMFIELD
ADAMS
GILPIN
DENVER
JEFFERSON
CLEAR CREEK
ARAPAHOE
PARK
DOUGLAS
ELBERT
0 - 40
41 - 63
64 - 78
79 - 89
90 - 100
90

Colorado Population 2000 by Census Block Groups: Reference Map to Understand Geographic Race/Ethnicity Distributuion

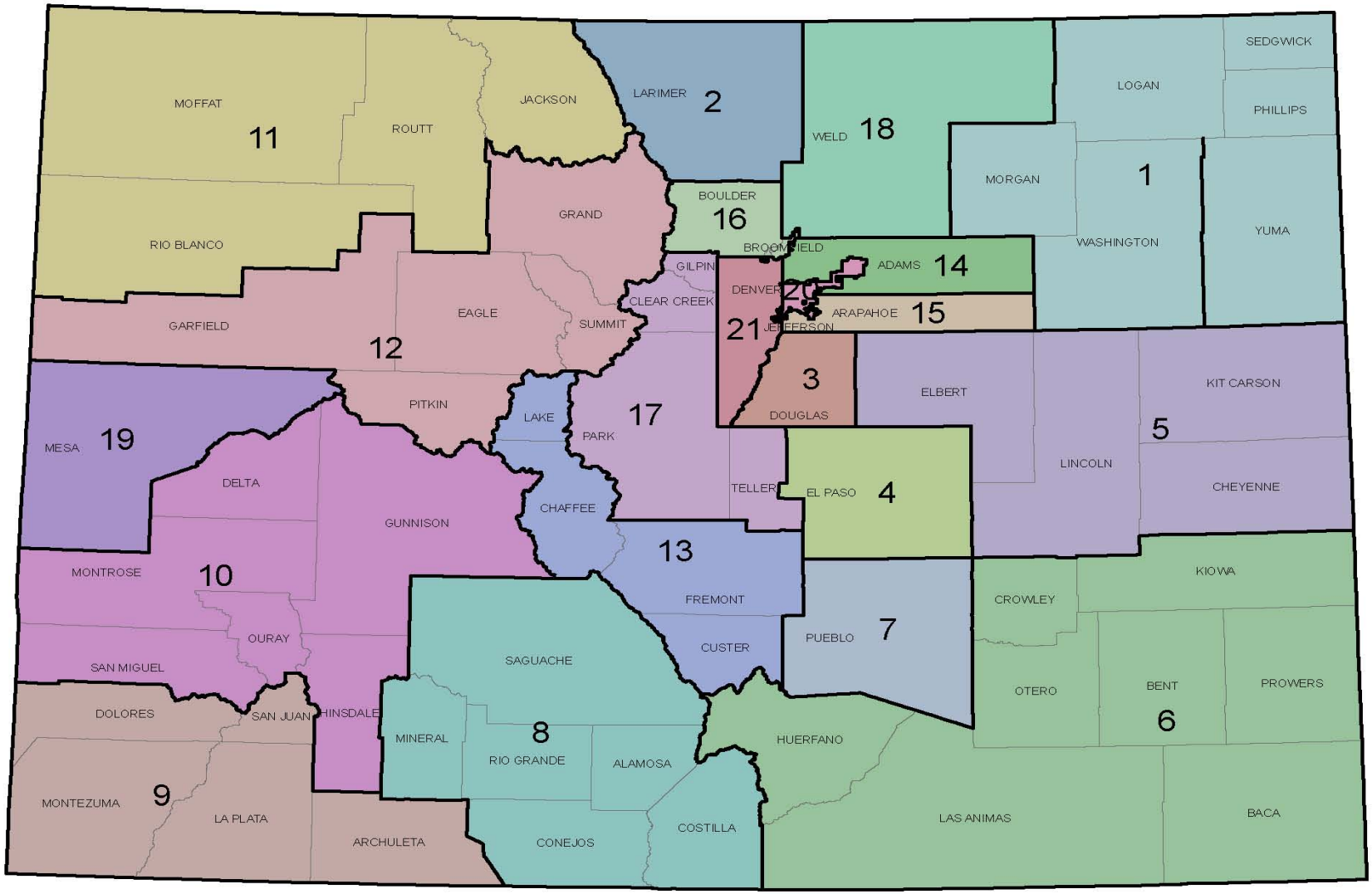



Numbers of Urban Population: Census Block Groups 2000
GRAND
BOULDER
WELD
BROOMFIELD
ADAMS
GILPIN
DENVER
JEFFERSON
CLEAR CREEK
ARAPAHOE
PARK
DOUGLAS
ELBERT
0 - 907
908 - 1457
1458 - 2184
2185 - 3577
3578 - 10728


Numbers of Southern Urban Population
JEFFERSON
DOUGLAS
ELBERT
PARK
TELLER
EL PASO
LINCOLN
FREMONT
PUEBLO
CROWLEY
CUSTER
OTERO


Numbers of Western Urban Population
PITKIN
MESA
DELTA
GUNNISON
MONTROSE
OURAY

Colorado Health Statistics Regions



*July 2008

Selection Process for DSME Focus Regions

Methods

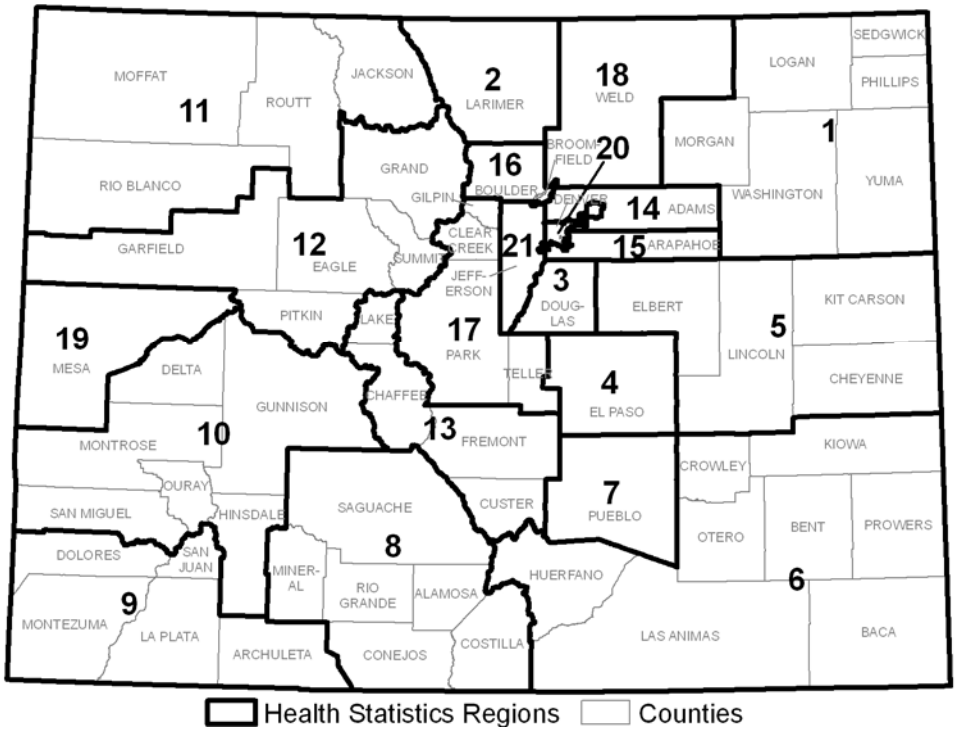
The work group commenced with an overview of the current state of diabetes and diabetes self-management education in Colorado as a whole. After determining the need to look at these data on a sub-state level (on a geographic scale smaller than the state unit), the work group investigated the availability of data for Colorado's 64 counties. The first type of data utilized was a map of the diabetes prevalence in each county produced by the Centers for Disease Control and Prevention (CDC). When looking for statistical differences, very few were found as many of Colorado's counties have small populations that made the confidence intervals quite wide. In addition to prevalence data, additional BRFSS data would be difficult to obtain at the county level due to small numbers of survey respondents with diabetes in many of the counties.

Because of these data limitations associated with county level data, the availability of regional data was considered. The Health Statistics Section at the Colorado Department of Public Health and Environment developed 21 Heath Statistics Regions. These regions were developed in part to overcome issues associated with small sample sizes in less populated counties. Data analysis using these regions is common with a variety of data sets housed in the Health Statistics Section. A comparison of the county level prevalence map with the regional level prevalence map showed consistency among areas with high and low prevalence of diabetes. This overlap confirmed the validity of using the Health Statistics Regions. Map X displays the 21 Health Statistics Regions and their respective counties.

Once the work group approved the use of the Health Statistics Regions as the unit of geographic analysis, additional regional data were requested and gathered from several sources. Below is a list of the population-based data that was collected from each source. (For a full description of each of the data sources contained in the Health Statistics Section, please refer to the glossary of this report.)

The Colorado Behavioral Risk Factor Surveillance System (BRFSS) was the source of the following data for each of the 21 Health Statistics Regions. Respondents to this statewide telephone survey are age 18 and older, so the results represent adults in Colorado.

Map 1: **Colorado Health Statistics Regions and Counties**



- Prevalence of diabetes (2005-2007)
- Estimated counts of persons with diabetes (2005-2007)
- Prevalence of diabetes self-management education (2006-2008)
- Each of the five standards of care and an aggregate of four standards of care (2006-2008)
- Prevalence of adult health care coverage (2005-2007)
- Prevalence of fair or poor health (2005-2007)
- Prevalence of no leisure time physical activity within the past 30 days (2005-2007)
- Prevalence of overweight (2005-2007)
- Prevalence of obesity (2005-2007)
- Prevalence of current smokers (2005-2007)
- Prevalence of consuming five or more fruit and vegetables per day (2005-2007)

Population estimates by age group and by race/ethnicity were obtained from the regional health profiles Web site (http://www.cdphe.state.co.us/hs/regionaldata/regionaldata.html). The State Demography Office at the Colorado Department of Local Affairs provided the 2007-based population estimates by age to Health Statistics Section for use in these regional profiles. The racial/ethnic population distributions in each region were obtained by the Health Statistics Section from the National Center for Health Statistics' 2007-based, bridged-race population estimates.

The regional profiles Web site also provided regional data on the percentage of the population ages 25 and older that had an associates degree or higher. The original data came from the United States Census Bureau, Summary File 3 sample data, 2000.

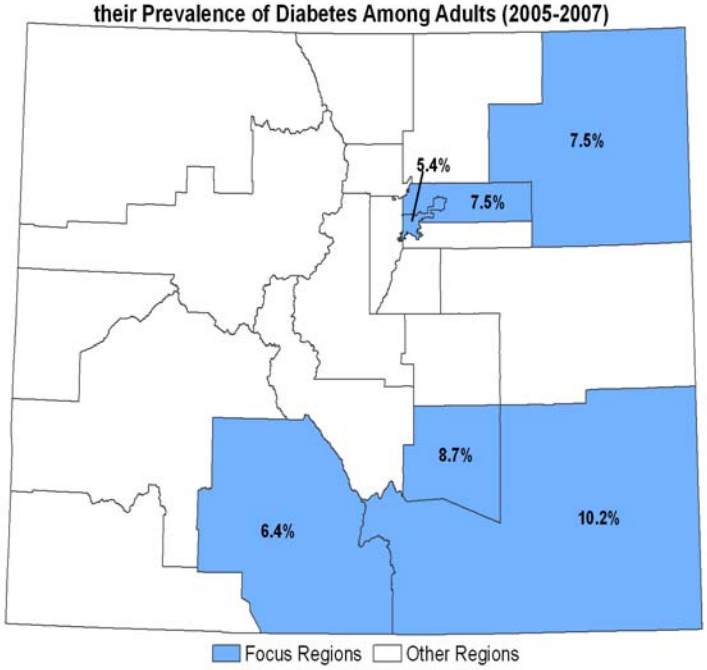
The age-adjusted mortality rates for diabetes (2005-2007) were obtained from the Colorado certificate of death data, which are housed in Vital Statistics Unit of the Health Statistics Section at CDPHE.

Selection of Focus Regions

The data were split into two categories to represent 1) secondary and tertiary prevention indicators and 2) primary prevention indicators. The indicators for secondary and tertiary prevention are shown in Table 4 and included prevalence of diabetes among adults, estimated counts of adults with diabetes, mortality rates for diabetes, prevalence of diabetes self-management education among adults with diabetes, and the prevalence of standards of care recommended for persons with diabetes. Table 5 presents the indicators for primary prevention, which included risk factors for diabetes such as physical inactivity, overweight, obesity, current smoking, lack of health insurance and nutrition assessed in the adult population. These primary and secondary/tertiary prevention indicators were available for each of the 21 Health Statistics Regions.

The top or lowest third (e.g. seven regions) for a given indicator based on desired prevalence were systematically colored or "flagged" on the secondary and tertiary prevention spreadsheet. For some indicators having a high prevalence is desirable (DSME) whereas for other indicators having a low prevalence (diabetes) is desirable. Selected GIS maps were consulted as needed for a visual picture of the data, and to display the location of current diabetes resources for diabetes self-management. The prevalence of diabetes was considered the most important indicator, followed by the prevalence of persons with diabetes who had received self-management education. Race/ethnicity (e.g. high proportion of minority groups) was not factored into the flagging since data on the prevalence of diabetes by each racial/ethnic group was not available for all regions.

Map 15 **Focus Colorado Health Statistics Regions and their Prevalence of Diabetes Among Adults (2005-2007)**



Source: Colorado Behavrioral Risk Factor Surveillance System

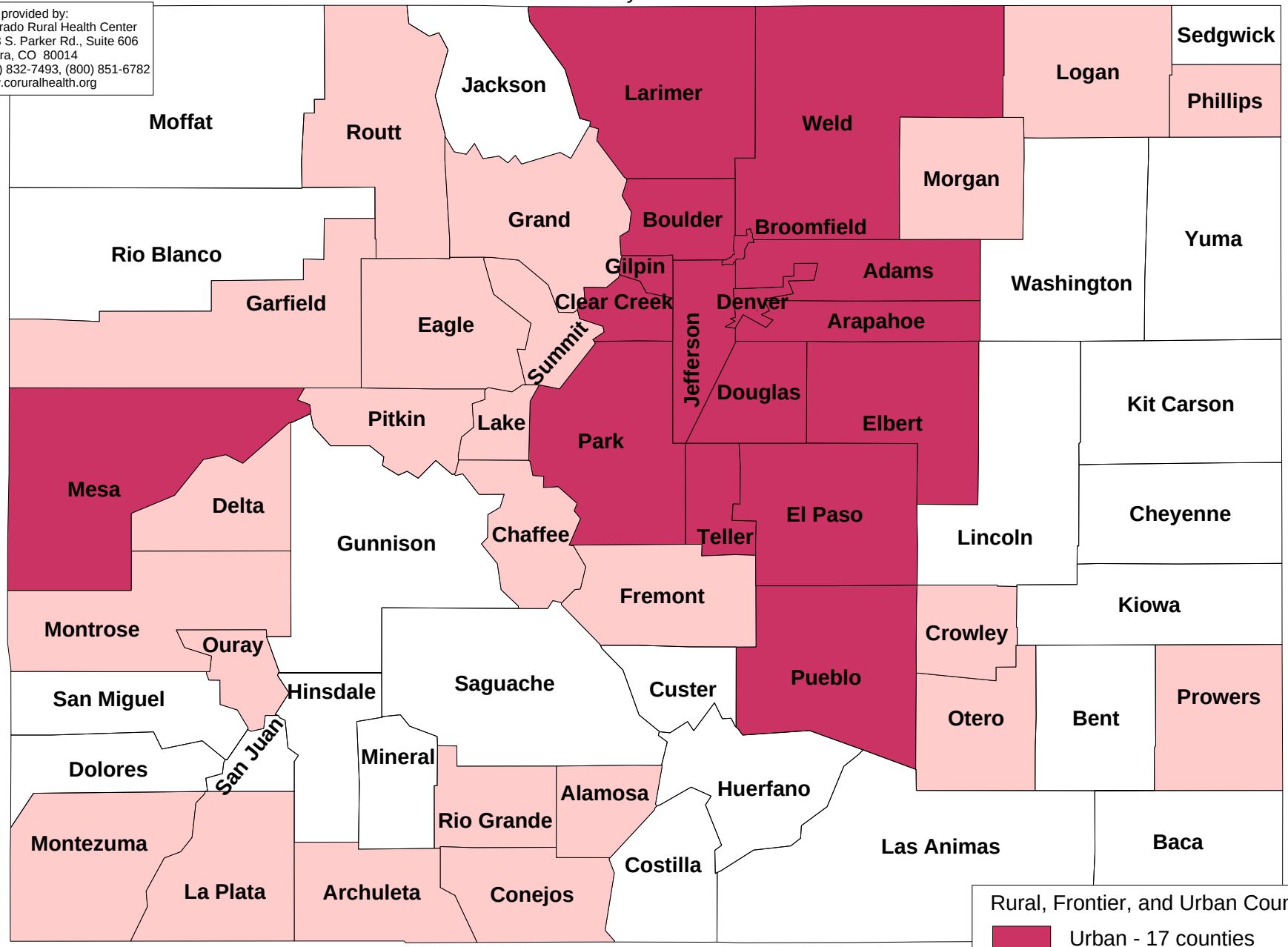
Once the secondary and tertiary indicators were gathered and systematically reviewed, the numbers of flags were summed to obtain a total for each region. Regions were then ranked in descending order according to the total number of flags. The work group selected the top six ranked regions as the focus regions. The six selected focus regions include: Northeast Colorado (region 1), Southeast Colorado (region 6), Pueblo County (region 7), San Luis Valley (region 8), Adams County (region 14) and Denver County (region 20). Map X shows the selected focus regions and their corresponding diabetes prevalence.

In order to confirm the selection of these six focus regions based on the secondary and tertiary prevention indicators, the flagging of the top seven or lowest seven regions for the primary prevention indicators was also completed. All six of the focus regions received a high number of flags on the primary prevention spreadsheet as well. Although indicators for certain regions needed to be suppressed for this written report due to sample size, it was consulted internally during the selection of the focus regions.

Colorado's Rural, Frontier, and Urban Counties

July 2009

Map provided by:
Colorado Rural Health Center
3033 S. Parker Rd., Suite 606
Aurora, CO 80014
(303) 832-7493, (800) 851-6782
www.coruralhealth.org



Please note that counties are technically designated as metropolitan or non-metropolitan; here, "urban" and "rural" serve as proxies for these designations. Frontier counties are a subset of rural counties.

ADA and AADE Program Survey Instrument

Colorado Diabetes Prevention and Control Program

Diabetes Self Management Education Needs Assessment

2010

1. Introduction

This survey is being sent to you by the Colorado Diabetes Prevention and Control Program (DPCP) to better assess Diabetes Self-Management Education (DSME) currently provided to Coloradans with diabetes throughout the state. Your responses will identify the diabetes self-management education and support that is currently available in Colorado. In addition, this survey will provide information to enable the DPCP to identify gaps and needs in communities with regard to DSME and Diabetes Self-Management support. Please complete the survey by Tuesday, September 15th.

As administrator for the diabetes education program, you have been identified as most informed to respond to these questions and participate in the DSME statewide assessment.

Please complete this 20-minute survey. Your information is essential in understanding potential opportunities and linkages for DSME services. If you get interrupted during the survey, you can resume at any time.

Definitions:

Diabetes education, also known as "diabetes self-management education" (DSME) or "diabetes self-management training" (DSMT) or is defined as a collaborative process through which people with or at risk for diabetes gain the knowledge and skills needed to modify behavior and successfully self-manage the disease and its related conditions. DSME/DSMT is an interactive, ongoing process involving the person with diabetes (and the caregiver or family) and a diabetes educator(s). The intervention aims to achieve optimal health status, better quality of life and reduce the need for costly health care.

Diabetes self-management support is the systematic use of education and supportive strategies to increase patients' skills and confidence in managing their diabetes and the problems or comorbid conditions that may arise. It also refers to the organizational structure health care settings can implement to facilitate improved patient self-management.

2. Capacity

The first set of questions asks about your program's capacity to provide DSME/DSMT. Your responses will help us understand the amount and type of DSME that is available and accessed across the State of Colorado.

As of today, how many years has your program existed? Round to the nearest 6 months (e.g. 1, 1.5, 2, etc).

How well-known is your program by other community organizations?

- ◯ Very well-known
- ◯ Moderately well-known
- ◯ Not well-known

How many individuals does your program serve in a typical month? (Count each patient only once regardless of how many times they are seen in a month.)

What percentage of your patient population receives diabetes self-management education (DSME) in group and individual settings? (It is okay to count a patient more than once if they receive education in both group and individual settings.)

Individual Sessions

Group classes

Without an increase in staff, estimate how many more patients your program could serve in a typical month.

- ◯ None, we are at capacity.
- ◯ 1-10
- ◯ 11-20
- ◯ 21-30
- ◯ 31-40
- ◯ 41-50
- ◯ More than 50

3. Staffing

The next set of questions asks about your program's current staffing structure and needs.

Please indicate the number of full-time equivalents (FTEs) your program employs in each of the following categories:

Administrative

Program Management

Registered Dietitian (R.D.)

Registered Nurse (R.N.)

Pharmacist

Medical Doctor (M.D.)

Nurse Practitioner (N.P.) or Physician's Assistant (P.A.)

Social Worker

Other

If you chose "other", please specify.

Please indicate the number of FTEs that are also Certified Diabetes Educators?

How many FTEs in your program provide the following types of education?

In-patient education

Out-patient education

How many FTEs in your program READ Spanish with at least moderate accuracy?

How many FTEs in your program SPEAK Spanish with at least moderate fluency?

For patients who require DSME services in Spanish, please estimate the following:

Percentage of the time your staff is able to provide these services:

Percentage of the time your staff needed to obtain external interpretation services:

Cultural competence refers to an ability to understand, communicate with, and interact effectively with patients of different cultures that includes the language, thoughts, communications, actions, customs, beliefs, values, and institutions of racial, ethnic, religious or social groups.

What assistance or resources, if any, does your staff need to assure meaningful access to culturally and linguistically appropriate services to diverse groups?

White/non-Hispanic	
Black or African-American	
Hispanic	
American Indian/Alaskan Native	
Asian Pacific Islander	
Other/non-Hispanic or Multi-racial	

4. Programming

The next set of questions asks about the manner in which your program provides DSME/DSMT and ongoing Diabetes Self-Management.

5. Comorbidity

How often do you believe that the program staff address the following co-morbid conditions and risk factors during your educational sessions?

	Never	Seldom	Sometimes	Often	Always
Cardiovascular disease	◯	◯	◯	◯	◯
Depression	◯	◯	◯	◯	◯
Hyperlipidemia	◯	◯	◯	◯	◯
Hypertension	◯	◯	◯	◯	◯
Obesity	◯	◯	◯	◯	◯
Physical activity	◯	◯	◯	◯	◯
Tobacco use	◯	◯	◯	◯	◯

6. Programming 2

Is your program currently recognized by the American Diabetes Association (ADA) or certified by the American Association of Diabetes Education (AADE)?

- ◯ ADA recognized
- ◯ AADE certified
- ◯ Neither

7. Follow-up 1

Are you considering AADE certification in the future?

- ◯ Yes
- ◯ No

Why or why not?

8. Programming 3

What percentage of your billable outpatient educational services is provided at each of the following locations?

Private clinic	
Primary care office	
Inpatient hospital-based clinic	
Outpatient hospital-based clinic	
Community health center	
Community-based organization (i.e., faith-based organization, recreation center, etc.)	
Other	

If you chose "other", please specify.

9. Program Funding

The next set of questions seeks to understand how your program is funded.

Does your program bill for inpatient education?

- ◯ Yes
- ◯ No

Estimate the percentage of your total funding that comes from the following sources (please make sure numbers add to 100):

Self-pay	
Private insurance	
Medicare	
Medicaid	
Sliding scale	
Other	

If you selected other, please describe the funding source:

Does your organization ever provide DSME/DSMT services, ongoing Diabetes Self-Management Support, or community services free of charge to patients for which you receive no payment (either from the patient or a third-party payor)?

- ◯ Yes
- ◯ No

10. yes provide free services

Please estimate the number of hours spent per month providing these free services.

11. Self-Management Support

Diabetes Self-Management Support is ongoing systematic supportive strategies to increase patients' skills and confidence in managing their diabetes and the problems or comorbid conditions that may arise, in addition to the use of education. It also refers to the organizational structure health care settings can implement to facilitate improved patient self-management. Effective diabetes self-management support, in conjunction with initial education, can help patients and families cope with the challenges of living with diabetes to ultimately reduce complications and symptoms. The next six questions ask you about the extent to which your education program includes various components of self-management support.

Assessment and Documentation

Please select the category that best describes the extent to which the staff assesses and documents patients' ongoing self-management needs and activities.

- ◯ Assessment and documentation are not done.
- ◯ Assessment and documentation are expected.
- ◯ Assessment and documentation are completed in a standardized manner.
- ◯ Assessment and documentation are regularly assessed and recorded in standardized form linked to a treatment plan available to practice and patients.

Please describe your assessment and documentation in more detail.

Service Provision

Please select the category that best describes the extent to which the staff provides ongoing self-management support for patients.

- ◯ Support is limited to the distribution of information (pamphlets, booklets, etc.).
- ◯ Support is available by referral to self-management classes or educators.
- ◯ Support is provided by trained clinical educators who are designated to do self-management support and see patients on referral.
- ◯ Support is provided by clinical educators who are trained in patient empowerment and problem-solving methodologies.

Please describe your self-management support in more detail.

Addressing Concerns of Patients and Families

Please select the category that best describes the extent to which the staff address specific concerns of the patients and families they serve.

- ◯ Concerns are not addressed consistently.
- ◯ Concerns are addressed for some patients and families through referral.
- ◯ Addressing concerns is encouraged, and peer support groups and mentoring programs are available.
- ◯ Addressing concerns is an integral part of our program and includes systematic assessment and routine involvement in peer support groups or mentoring programs.

Please describe in more detail how patient and family concerns are addressed.

Behavior Change Strategies and Peer Support

Please select the category that best describes the extent to which behavior change strategies and peer support are available to patients educated through your program.

- ◯ These resources are not available.
- ◯ These resources are limited to the distribution of pamphlets, booklets, or other written information.
- ◯ These resources are available only by referral to specialized centers staffed by trained personnel.
- ◯ These resources are readily available and an integral part of routine care.

Please describe any strategies or peer support available to your patients in more detail.

Does your program provide ongoing support to patients with Limited English Proficiency (i.e., support group, newsletter, programs, services, etc.)?

- ◯ Yes
- ◯ No

12. Support Follow-up

Please explain how ongoing support is provided to patients with Limited English Proficiency.

13. Referrals

The next set of questions asks about various organizations you may or may not recommend to patients for ongoing Diabetes Self-Management Support. When answering these questions, do not think of recommendations you make for specific medical appointments, but rather for ongoing Diabetes Self-Management Support.

14. Physical Therapists

Do program staff recommend that diabetes patients contact a physical therapist for ongoing Diabetes Self-Management Support?

- ◯ Yes
- ◯ No

15. yes to PT

Please describe:

16. Physical Therapists Follow-up

Why not? (check all that apply.)

- [ ] We don't know of any physical therapists in my community.
- [ ] We hadn't thought of it.
- [ ] We don't believe that physical therapists are qualified to provide diabetes support services.
- [ ] We would, but the cost is prohibitive for the patient.

Other (please specify)

17. Oral Health

Do program staff recommend that patients contact an oral health professional for ongoing Diabetes Self-Management Support?

- ◯ Yes
- ◯ No

18. yes oral health

Please describe:

19. Oral Health Follow-up

Why not? (check all that apply.)

- [ ] We don't know of any oral health professionals in my community.
- [ ] We hadn't thought of it.
- [ ] We don't believe that oral health professionals are qualified to provide diabetes support services.
- [ ] We would, but the cost is prohibitive for the patient.

Other (please specify)

20. Pharmacists

Do program staff recommend that patients discuss Diabetes Self-Management Support with a pharmacist?

- ◯ Yes
- ◯ No

21. yes pharmacists

Please describe:

22. Pharmacists Follow-up

Why not? (check all that apply.)

- [ ] We don't know of any pharmacists in my community.
- [ ] We hadn't thought of it.
- [ ] We don't believe that pharmacists are qualified to provide diabetes support services.
- [ ] We would, but the cost is prohibitive for the patient.

Other (please specify)

23. Community based organizations

Do you refer patients to any of the following community-based organizations for diabetes self-management support?

	Yes	No
Center for African American Health	◯	◯
Por tu Familia	◯	◯
Healthier Living-Colorado	◯	◯
Healthier Living-Colorado-Diabetes	◯	◯
Tomando Control de Su Salud	◯	◯
Tomando Control de Su Salud-Diabetes	◯	◯
YMCA or other recreation center	◯	◯

Please list any other community based organizations where you commonly refer patients to help them manage their diabetes.

Are there diabetes education services in your geographic area, not including your program, that serve people who are uninsured?

- ◯ Yes
- ◯ No
- ◯ I don't know

24. Uninsured Follow-up

Please provide the name of the organization so that we may better understand the statewide resources potentially available for persons who are uninsured.

25. Community Linkages

Community linkages are partnerships with community-based organizations that can assist with diabetes self-management support. The next three questions ask about the extent you link with or recommend other programs or resources.

Linking Patients to Outside Resources

Please select the category that best describes the extent to which you link patients to outside resources.

- ◯ Linkages are not made systematically.
- ◯ Linkages are limited to providing a printed list of identified community resources in an accessible format.
- ◯ Linkages are accomplished by a designated staff person or agency.
- ◯ Linkages are accomplished through active coordination between the program and various community service agencies.

Please describe your linkages in more detail.

Partnerships with Community Organizations

Please select the category that best describes the extent to which you partner or work in conjunction with community organizations to ensure that the needs of the patient are met.

- ◯ Partnerships do not exist.
- ◯ Partnerships are being considered but have not yet been implemented.
- ◯ Partnerships are formed to develop supportive programs and policies.
- ◯ Partnerships are actively sought to develop formal supportive programs and policies across the entire system.

Please describe your partnerships in more detail.

Describe how you or your staff are involved in diabetes activities within the community (i.e., participation on a diabetes coalition, diabetes Expo, etc.)

26. Patient Demographics

The last set of questions asks about the demographics of your patient population. Please estimate the percentages. Your responses will help us understand the population you currently serve.

What percentage of the patient population in your program has the following types of diabetes?

Type 1

Type 2

Gestational Diabetes Mellitus (GDM)

What percentage of the patient population in your program is from the following racial/ethnic groups?

White/non-Hispanic

Black or African-American

Hispanic

American Indian/Alaskan Native

Asian Pacific Islander

Other/non-Hispanic or Multi-racial

What percentage of the patient population in your program requires DSME services in Spanish?

What percentage of the patient population in your program requires DSME services in a language other than English OR Spanish?

What percentage of the patient population in your program requires EXTERNAL translation services to receive education in a language other than English?

What are the percentages of male and female in the patient population for your program?

Male

Female

Please record the percentage of the patient population in your program for each of the following age groups.

Under 19	
19-44	
45-64	
65 or older	

What percentage of the patient population in your program falls into the following health coverage categories? (It is okay to include an individual twice if appropriate.)

Uninsured	
Privately insured	
Medicare	
Medicaid	
Don't know	

Please list up to 10 ZIP codes that best represent where the majority of your patients reside.

27. Changes

Please share anything about your program that may help the Colorado Diabetes Prevention and Control Program understand the nature and availability of DSME/DSMT and ongoing Diabetes Self-Management Support in your community.

Diabetes Self Management Training
(AKA Diabetes Self Management Education)
Steps to Provider Reimbursement for Colorado DSMT Programs
Version 2.0 • April, 2009
Prepared by: Dawn James, MSN, APRN, CNS

Introduction

Note: Diabetes Self Management Training (DSMT) and Diabetes Self Management Education (DSME) are synonymous and will be referred to as DSMT from this point forward.

Obtaining reimbursement for diabetes self management training (DSMT) in a non-traditional setting such as in a public health agency can be challenging and may even prevent some individuals and agencies from providing DSMT where there is an identified need. This Guide was developed to assist those agencies and individuals (including those situated in a hospital or traditional acute care setting) who are interested in becoming a recognized site that provides DSMT and would like to become eligible to bill for those services.
There are several steps in the process:

Step #1: Obtain "Program Recognition"
Step #2: Have agency and providers obtain "Provider" status from the Centers for Medicare/Medicaid Services (CMS) to bill
Step #3: Determine fee-for-service and develop a "super bill" for billing third-party payers
Step #4: Obtain a data base system that will track all of the American Diabetes Association (ADA), American Association of Diabetes Educators (AADE), or Indian Health Services (IHS) required information to maintain "Recognition" status.

Step #1:
Obtain Program Recognition

There are currently three entities that agencies/providers can obtain program recognition from. They include: The American Diabetes Association (ADA), the Indian Health Service (IHS), and the American Association of Diabetes Educators (AADE).

The first step towards reimbursement is to have the agency become a "recognized program." Program recognition imparts the privilege of receiving Medicare and other third-party reimbursement.

A. American Diabetes Association Recognition:

ADA's Diabetes Education Accreditation program is based on the National Standards for Diabetes Self-Management Education which is released annually in January as Supplement 1, American Diabetes Association Clinical Practice Recommendations to "Diabetes Care".

The application fee for ADA Recognition is $1100.00 and is ***non-refundable***, so it is important to have all of the requirements completed prior to applying for program recognition. Items needed to complete the application include the following (per the 7th Edition Application):

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- The following education process must be established for all participants (clients or patients) of a program seeking Recognition and maintained for the full 3-year recognition period. (Note: ADA, AADE and IHS give program "recognition" for 3 year periods of time. Renewal of "recognition" must be applied for every three years.)
    - Identification of a primary care provider for the participant (referring provider)
    - Participant assessment to establish her/his Diabetes education need(s)
    - Formulation of an education plan (including behavior goal setting), involving the participant and based on her/his assessed need(s)
    - Education of the participant in the areas of assessed need
    - Evaluation of the educational intervention, including follow-up with assessment of behavior and other goal achievement
    - Development of Diabetes Self Management Support (DSMS) Plan
    - Communication to the identified primary care provider, including summary of process and DSMS plan
    - Maintenance of an education record for the participant which documents all of these elements.

- The following structural support must be established and be in place at all times during the 3 year recognition period:
    - One sponsoring organization
    - An advisory group consisting of at least a health professional, a community member and a person affected by diabetes.
    - An identified target population or service area focus for the program
    - A designated program coordinator responsible for planning, implementing and evaluating the DSMT.
    - Qualified personnel responsible for the delivery of education (instructional staff).

- In support of the process and as a main tool for guiding education, the program must have a reference curriculum with the following elements:
    - Content Outline
    - Participant learning objectives
    - Identified methods of delivery
    - Identified strategies for evaluation of learning

- There must be an identified process in place for program performance improvement (CQI).

- At least 2 outcomes must be tracked as a measure of program success:
    - Patient defined goals and measure of goal attainment
    - Other outcome (metabolic, clinical, quality of life, process) with measure of attainment

- Other requirements for the application are:
    - A specified data collection period (3 months)
    - A minimum of 10 patients seen in the specified data period at each site (except at an expansion site).
    - Submission of a 'Support Documentation Package' including randomly assigned paper audit item. Supporting Documentation Package includes:

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- Copies of current licenses, or Commission on Dietetic Registration cards for dietitians
- Copies of current CDE or BC-ADM certificates
- Copies of official verification documentation of Continuing Education for non-CDE/BC-ADM program staff
- Evidence of Administrative support (letter from the agency supporting the program)

Note: Programs should allow three to six months to prepare for application submission. This is necessary in order to develop (or adopt) the curriculum, track and record the data needed, identification and seating of the Advisory Group members and to submit the application.

To find out more details and to obtain the application to become an ADA recognized program, go to: http://professional.diabetes.org/recognition.aspx?cid=57995 or www.diabetes.org/erp.

B. American Association of Diabetes Educators Recognition

AADE's Diabetes Education Accreditation Program was established in the fall of 2008 and is based on the National Standards for Diabetes Self-Management Education. The Centers for Medicare and Medicaid Services (CMS) approved AADE as an accrediting body for diabetes self-management training programs located in non-acute care settings, as well as traditional hospital-based and hospital-affiliated sites. There is no pre-application data collection period. An on-line application is not yet available. Initial application fees:

Important Note: The fee for the AADE application is ***non-refundable***.

- For programs with up to 10 settings where services are provided: $ 800.00
- For programs with 11-20 settings where services are provided: 1,200.00

The application process is comprised of three components: 1) Submission of the application; 2) Submission of "supporting documents" and 3) Telephone interview.

Supporting Documentation:
Supporting documentation must be sent within two weeks from the date of submission of the application form. Supporting documents include the following:

- Program description: May include the following information: A brief description of the program's history, funding resources, mission, vision, innovative initiatives, etc.
- Job description for each of the positions within the entity's organization
- Resumes of program coordinator and instructors.
- Proof of licenses and/or certification, and continuing education for the coordinator and all instructors
- Performance measurement plan
- Copy of one de-identified participant chart
- Copy of one complete section from the written curriculum
- Documentation of continuous quality improvement (CQI) performance process/model

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- Advisory group composition
- Sample education materials (English and on-English as appropriate)

For complete details and application, go to:
http://www.diabeteseducator.org/ProfessionalResources/accred/

C. Indian Health Services Recognition

The Indian Health Service (IHS) Division of Diabetes administers the IHS Integrated Diabetes Education Recognition Program (IDERP). This program accredits DSMT programs at IHS, Tribal, and Urban Indian health care facilities. Applications for recognition are accepted twice a year.

Step	Activity	Deadlines
1	Submit a Letter of Intent and "Level 1 Developmental Checklist"	Must be received by **February 15** (5pm MST) – for the March 1-15 application cycle **August 15 (**5pm MDT) – for the September 1-15 application cycle
2	Prepare and submit application and supporting documentation	Must be received by: **March 15** (5pm MST) – for the March 1-15 application cycle **September 15** (5pm MDT) – for the September 1-15 Application cycle
3	Notification of review outcome	Within 12 weeks of application deadline

Because the IHS process for recognition is somewhat unique and different from the ADA and AADE Recognition process, please refer directly to the Indian Health Services website for detailed information, fees for application, etc. at: http://www.ihs.gov/MedicalPrograms/Diabetes and click on the IDERP Link on the left side.

Special Note: There are a tremendous amount of resources and support available from all three of the Recognition Programs listed above. It is highly encouraged that interested agencies enter into an early relationship with the Recognition staff (program of your choice) to draw from their expertise and benefit from the guidance they have to offer. You can find their contact information at the links provided for each Recognition Program.

Step 2: Obtaining Provider Status (important for all third party payer reimbursement):

A. First, the agency and the providers need to obtain National Provider Identifier (NPI) numbers. Individuals and organizations qualified to receive an NPI number include: physicians and other practitioners (including Nurse Practitioners, Clinical Nurse Specialists, and Registered Dietitians), physician/practitioner groups, institutions such as hospitals, laboratories, nursing homes, public health agencies, organizations such as health maintenance organizations, and suppliers such as pharmacies and medical supply companies (http://aspe.hhs.gov).

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B. Second, the agency may consider becoming a Medicare/Medicaid Provider agency. The contractor for Medicare/Medicaid services in Colorado is TrailBlazer Health Enterprises, LLC. TrailBlazer can be accessed at www.trailblazerhealth.com. You will be able to access all of the forms and resources you will need to become a Medicare Provider at this site. When you enter the site, click on the "CMS Resources" link. There you will find the packet of forms that you will need.

For detailed information regarding becoming a Medicare Provider and other information regarding billing for DSME, go to www.trailblazerhealth.com. To speak to a TrailBlazer consultant, call 866-539-5596.

Detailed Medicare regulations can be found at www.cms.gov, and http://www.cms.hhs.gov/MLNMattersArticles/downloads/MM3185.pdf

Note: Registered Dietitians are eligible to bill Medicare on behalf of an entire DSMT program on or after January 1, 2002, as long as the provider has obtained a Medicare provider number. A dietitian may NOT be the sole provider of the DSMT service (Medicare Benefit Policy Manual, Chapter 15 – Covered Medical and Other Health Services 300.5). RDs and nutrition professionals must accept assignment. Payment will be made under the physician fee schedule for dates of service on or after January 1, 2002, to an RD or nutrition professional who meets the requirements (CMS December, 2008).

IMPORTANT: *DSMT is not a separately recognized provider type like a physician or nurse practitioner.* ***A person or entity cannot enroll in Medicare for the sole purpose of performing DSMT****. DSMT is an extra service that a currently-enrolled provider or supplier can bill for, assuming the provider or supplier meets all the necessary DSMT requirements.*

The statute indicates that a "certified provider" is a physician or other individual or entity designated by the Secretary that, in addition to providing outpatient self-management training services, provides other items and services for which payment ***may be made*** *under Title XVIII and meets certain quality standards. The CMS is designating all providers and suppliers who bill Medicare for other individual services such as hospital outpatient departments, renal dialysis facilities, physicians and durable medical equipment suppliers, as certified. All suppliers/providers* ***who may bill*** *for other Medicare services or items and who represent a DSMT program that is accredited as meeting quality standards can bill and receive payment for the entire DSMT Program (CMS 12/08).*

To be a covered Medicare service provider, the following conditions must be met:

- The general conditions of coverage must be met
- The beneficiary must be eligible to receive the service
- The provider/supplier billing for the service ***must be eligible*** to provide other individual Medicare services.
- The diabetes self-management training program must be accredited as meeting approved quality standards.

The following Medicare Fee schedule helps you with budgeting for providing DSMT and/or Medical Nutrition Therapy (MNT). Most third-party payers follow Medicare reimbursement guidelines (although some may pay at a higher rate). Note: Each state has a different Fee Schedule.

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Colorado Medicare Fee Schedule and Procedure Codes for DSMT/DSME and Medical Nutrition Therapy (MNT) (effective January 1, 2009)**:**

Procedure Code	Service	Fee per unit of time	Units of Time
G0108	Diabetes outpatient self-management training services, INDIVIDUAL	$22.77 (participating) 21.63 (non-participating) 24.87 (limiting charge amt)	30 minutes
G0109	Diabetes outpatient self-management training services, GROUP session (2 or more people)	$12.75 (participating) 12.11 (non-participating) 13.92 (limiting charge amt)	30 minutes
G0270 – G0271 MNT Registered Dietitians Only	Medical nutrition therapy. These codes are to be used when additional hours of MNT services are performed beyond the number of hours typically covered when a change in diet is necessary.	**G0270 (Individual)** $22.52 (participating) 21.39 (non-participating) 24.60 (limiting charge amt) **G0271 (Group)** $ 12.83 (participating) 12.19 (non-participating) 14.02 (limiting charge amt)	G0270 = 15 minutes G0271 = 30 minutes
97802 MNT Registered Dietitians Only	Medical nutrition therapy; initial assessment and intervention, individual face-to-face with the patient. (Used with INITIAL visit only	$29.01 (participating) 27.56 (non-participating) 31.69 (limiting charge amt)	15 minutes
97803 MNT Registered Dietitians Only	Medical nutrition therapy: All interventions after the initial visit.	$ 25.41 (participating) 24.14 (non-participating) 27.76 (limiting charge amt)	15 minutes
97804 MNT Registered Dietitians Only	Medical nutrition therapy: All group visits, initial and subsequent.	$ 12.83 (participating) 12.19 (non-participating) 14.02 (limiting charge amt)	30 minutes
	DSMT and MNT may not be provided on the same day to the same beneficiary!		

Note: Refer to Trailblazer on an annual basis to obtain that Fiscal Year's Fee Schedule.

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Terms Used in the Fee Schedule:

- **Participating**
  - A participating provider agrees to accept assignment, which means he or she agrees to accept the Medicare-approved amount as payment in full for Part B services and supplies.
- **Non-Participating**
  - A non-participating provider is a provider that does not accept assignment. His or her charges are often higher, which means the patient will pay more. In many cases, the patient is required to pay the entire amount at the time of service. Medicare then sends the patient a check for the Medicare-approved amount.
- **Limiting Charge Amount**
  - Non-participating providers are subject to a "limiting charge", which means they cannot charge more than 115% of the Medicare-approved amount. The limiting charge is the highest amount a patient can be charged for a covered service by doctors and other health care providers who don't accept assignment.

- **Units of Time**
  - DSMT is billed in "units of time". Example: You provide 1 hour of counseling to a patient using Procedure Code G0108. This would be billed as 2 units of time because each unit of time is 30 minutes. For a participating provider, you would bill $45.54 for that one-hour session.

Initial Training:

The initial year for DSMT is the 12-month period following the initial date (date first educational session is provided), and Medicare will cover initial training that meets the following conditions:

- DSMT is furnished to a beneficiary who has not previously received initial or follow-up training under Healthcare Common Procedure Coding System (HCPCS) code G0108 or G0109;
- DSMT is furnished within a continuous 12-month period;
- DSMT does not exceed a total of **10 hours** (the 10 hours of training can be done in any combination of one-half hour increments);
- With the exception of one hour of individual training, the DSMT training is usually furnished in a group setting with the group consisting of individuals who need not all be Medicare beneficiaries; and
- The one hour of individual training may be used for any part of the training including insulin training.

Follow-up Training:

Medicare covers follow-up training under the following conditions:

- **No more than two hours** individual or group training is provided per beneficiary per year (the 'beneficiary year' is tracked by CMS);
- Group training consists of 2 to 20 individuals who need not all be Medicare beneficiaries;
- Follow-up training for subsequent years is based on a 12-month calendar (as determined by CMS on a client-by-client basis) after completion of the full 10 hours of initial training;
- Follow-up training is furnished in increments of no less than one-half hour; and

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- The physician (or qualified non-physician practitioner) treating the beneficiary (patient/client) must document in the beneficiary's medical record that the beneficiary has a diagnosis of diabetes.

Individual DSMT Training

Medicare covers training on an individual basis for a Medicare beneficiary under any of the following conditions:

- No group session is available within 2 months of the date the training is ordered
- The beneficiary's physician or qualified non-physician practitioner documents in the beneficiary's medical record that the beneficiary has special needs resulting from conditions, such as severe vision, hearing, or language limitations, or other such special conditions as identified by the treating physician or qualified non-physician practitioner, that will hinder effective participation in a group training session.
- The physician orders additional insulin training.
- The need for individual training must be identified by the physician or qualified non-physician practitioner in the referral.

Note: The beneficiary is liable for services denied over the limited number of hours with referrals for DSMT.

Medicaid Reimbursement:
Colorado Medicaid does not pay for Diabetes Self Management Education "G" codes including G0108 and G0109 as of FY 2003. The Comprehensive Primary and Preventive Care Grant Program provide augmented primary care and prevention services to populations who are uninsured and in a designated medically underserved area of the State. For more information about how to apply for the CPPCG grant, go to: http://www.colorado.gov/hcpf. Click on the Program Rules link and scroll down to section 8.900-8.999.

For more information regarding Medicaid benefits for people with diabetes call the Helpline 1-800-237-0757. The Healthcare Policy and Finance (HCPF) website can be accessed at: http://www.colorado.gov/hcpf.

Step 3: Determine fee-for-service and develop a "super bill" for billing third-party payers

Though it may be decided by an agency not to bill private insurance companies directly for DSMT, "super bills" can be developed that will allow clients to *bill their own insurance* for DSMT. (Clients/patients would want to do this if they want to be reimbursed for their out-of-pocket expense for DSMT.) The same codes used for Medicare billing apply to the codes that would be used on a "super bill". Additional CPT Codes (not allowed by Medicare/Medicaid) are also good to include on the super bill. Setting the fee-for-service requires understanding the customary fees approved by Medicare (which may reflect the amount that private insurers will reimburse). These fees vary from state-to-state. The Agency must be a "Recognized Diabetes Program" even if the patient will be billing their own insurance company for DSMT.

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As of January 2009, 46 states and the District of Columbia have some law that requires health insurance policy coverage for diabetes treatment (National Conference of State Legislatures, 2009).

Note: To read the entire report, go to http://www.ncsl.org/programs/health/diabetes.htm.

COLORADO Health Insurance Policy Coverage for Diabetes Treatment

State laws and regulations	C.R.S. 10-16-104 (subsection 13): Mandatory coverage Provisions; CRS 10-16-105: Small group sickness and accident insurance, guaranteed issue, mandated provisions for basic health benefit plans, rules, benefit design advisory committee. Date enacted: 1998
Insurance policies required to provide coverage	Any health benefit plan except supplemental policies that cover a specified disease or other limited benefit, that provides hospital or medical expense insurance shall provide coverage for diabetes.
People covered by insurance mandate	"Patient with diabetes" means a person with elevated blood glucose levels who has been diagnosed as having diabetes by an appropriately licensed healthcare professional.

Benefit Required		**Specified in Statute**
Medication	N/A	Not Mentioned
Equipment	Yes	Not Specified
Supplies	Yes	Not Specified
Education	Yes	Medical nutrition therapy included
Services	Yes	Outpatient self-management training
Colorado Medicaid does not reimburse "G" Codes		

Private Insurance Carriers will require proof that the billing agency is a Recognized Program. This needs to be reflected on the Super Bill. It is also required that all DSMT and/or MNT be prescribed by a recognized provider.

SAMPLE Super Bill for Diabetes Education, Medical Nutrition Therapy, Diabetes Screenings

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Anytown USA Diabetes Education Program
719-123-4567 • 719-123-8910 (FAX) • e-mail address
ADA Program Recognition Number 000000

Date of Service _____ Client Name _____
Age _____ Date of Birth: _____ Address: _____
Telephone Number _____ _____
Ethnicity: [] White [] Hispanic [] Black [] Asian/Pacific ISL [] Native American/Eskimo [] Other

Primary Care Provider: _____ Prescription for DSMT Attached [] Yes [] No
Social Security Number _____ Medicare/Medicaid [] Yes [] No _____
Other Insurance Carrier Name: _____ Group # _____ Policy # _____
Company Address: _____ Policy Holder's Name _____
_____ Policy Holder's Employer _____

SERVICE	HCPC Code	CPT Code	Fee per Unit of Time	Units of Time	Charge
Diabetes outpatient self-management training services individual. (Each 30 Minutes)	G0108	98960	**$24.87 Per 30 min**		
Diabetes outpatient self-management training services, group session (two persons or more) (Each 30 Minutes)	G0109	98961	**$13.92 Per 30 min**		
MNT, 2nd referral, same year, individual, face-to-face reassessment and subsequent intervention(s) (Each 15 Minutes)	G0270	97802 97803	**$24.60 Per 15 min**		
MNT, 2nd referral, same year, group, reassessment and subsequent intervention(s). (Each 30 Minutes)	G0271	97804	**$14.20 Per 30 min**		
HemoCue Glucose 201 with Plasma Conversion	-NA-	82947QW	**$15.00**	-NA-	
Microalbuminaria/Urine	-NA-	83518QW	**$10.00**	-NA-	
A1C/Fingerstick	-NA-	83036QW	**$15.00**	-NA-	
Lipid Panel/Cholestec Fasting/Fingerstick	-NA-	82465QW	**$20.00**	-NA-	

TOTAL CHARGES	
Amount Received	
Cash [] Check [] **Check #_____**	**Received by:**

Client Signature	**Provider Signature**
Date	**Date**

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Step 4: Obtain a data base system that will track all of the ADA, AADE, or IHS required information needed to maintain Recognition status.

There are a few choices for data tracking programs. It is important to find one that will suit your program's size, scope and budget. Programs specific to ADA, AADE, or IHS Recognized Programs include all of the reporting and CQI requirements to maintain Recognition status.

Here is a sample list of Data Base Systems and their cost. There are others available and this list is not intended to endorse any individual product or company. These cost amounts were obtained in 2009 and are subject to change at any time.

Name of System	Size and Scope of DSMT Program	Where to Get More Information	Cost
AADE7	Appropriate for all DSMT/MNT Programs.	www.aade.org	$95.00 for software.
TIARA	Appropriate for small, low patient volume programs.	Peter Burch 858-453-2777 www.tiara-mas.com	$400.00 for software Installation and $4.00 Per client after initial upload.
DiaMed	Appropriate for large, higher patient volume programs.	Melanie Smith 866-855-9330 www.chirondata.com	$1500.00 per year (includes software installation and support). No additional charge per client entered.

Final Note:

It is hoped that this guide will assist individuals and agencies in establishing a Diabetes Self Management Education Program. This resource is intended to decrease the amount of time that it will take to get all of the steps to "Accreditation and Certification" accomplished. Additional information regarding Reimbursement and other tips can be found at the American Association of Diabetes Educators web page: http://www.diabeteseducator.org/ProfessionalResources/products/. Select *Online Resources*.

Best of luck to you as you proceed with your program!

Resources and Web Links

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American Association of Diabetes Educators. http://www.diabeteseducator.org/ProfessionalResources/accred/

American Association of Diabetes Educators. Products.
http://www.diabeteseducator.org/ProfessionalResources/products/

American Diabetes Association. http://professional.diabetes.org/recognition.aspx?cid=57995

American Diabetes Association. Application Page. www.diabetes.org/erp

Centers for Medicare and Medicaid Services. www.cms.gov

Centers for Medicare and Medicaid Services/Medicare learning Network (MLN).
http://www.cms.hhs.gov/MLNMattersArticles/downloads/MM3185.pdf

Colorado Department of Health Care Policy and Financing. http://www.colorado.gov/hcpf

Indian Health Service Division of Diabetes Treatment and Prevention.
http://www.ihs.gov/MedicalPrograms/Diabetes

National Conference of State Legislatures. http://www.ncsl.org/programs/health/diabetes.htm

Trailblazer Health Enterprises, LLC. www.trailblazerhealth.com

United States Department of Health and Human Services. http://aspe.hhs.gov

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DSME/T Reimbursement Advice
Colorado Medicaid
September 24, 2009
Prepared by: Dawn James, MSN, APRN, CNS

Colorado Medicaid does not recognize the "G" codes used to obtain reimbursement for DSME/T and MNT. These codes include G0108, G0109; G0270, G0271. Acute care facilities and physician-based health care clinics can receive reimbursement for services rendered utilizing "incident to" billing for "Evaluation and Management" of diabetes patients. Non-physician practitioners (NPP) such as clinical nurse specialists, nurse practitioners, and physician assistants can bill "incident to" and be reimbursed at up to 85% of the physician fee schedule. To bill "incident to", the following criteria need to be met:

(Note: Keep in mind; this is not specifically categorized as DSME/T.)

1. The physician sees the patient (at a previous visit) and initiates the plan of care that the NPP is carrying out. For example, the physician sees a patient with diabetes and asks the patient to follow up with the NPP.

2. The physician remains involved in the patient's care and documents this involvement in the patient's chart. For example, the physician's review of the NPP's note or discussions between the NPP and the physician may be documented, as well as periodic face-to-face time between the physician and the patient.

3. The NPP must be an expense to the practice for the practice to bill the service as an incident-to service. The NPP may be a leased or contracted worker or an employee of the physician or the group.

4. The patient's physician (or another employed physician) must be in the office and immediately available. Telephone availability is not sufficient.

5. The service must be provided in the office. Incident-to services may not be billed in the emergency department, hospital, public health office or nursing home. Incident-to services are meant to cover usual and typical services provided in the office.

6. Unless the provider is a nurse practitioner, physician assistant, or clinical nurse specialist, the service can only be billed as 99211.

CPT Codes being used for billing "Incident to" include:

(Reimbursement rates are per the Medicaid Reimbursement Survey, 2007/2008)

99205 Office or other outpatient visit for the evaluation and management of a new patient, which requires these 3 key components: A comprehensive history; a comprehensive examination; Medical decision making of high complexity. Counseling and/or coordination of care with other providers or agencies are provided consistent with the nature of the problem(s) and the patient's and/or family's needs. Usually, the presenting problem(s) are of moderate to high severity. Physicians typically spend 60 minutes face-to-face with the patient and/or family.
Colorado Medicaid Reimbursement: **$124.54**

99211 Office or other outpatient visit for the evaluation and management of an established patient that may not require the presence of a physician. Usually, the presenting problem(s) are minimal. Typically, 5 minutes are spent performing or supervising these services.
Colorado Medicaid Reimbursement: **$12.18**

99212 Office or other outpatient visit for the evaluation and management of an established patient, which requires at least 2 of these 3 components: A problem focused history; A problem focused examination; Straightforward medical decision making. Counseling and/or coordination of care with other providers or agencies are provided consistent with the nature of the problem(s) and the patient's and/or family's needs. Usually, the presenting problem(s) are self limited or minor. Physicians typically spend 10 minutes face-to-face with the patient and/or family.
Colorado Medicaid Reimbursement: **$32.82**

99213 Office or other outpatient visit for the evaluation and management of an established patient, which requires at least 2 of these 3 key components: An expanded problem focused history; An expanded problem focused examination; Medical decision making of low complexity. Counseling and coordination of care with other providers or agencies are provided consistent with the nature of the problem(s) and the patient's and/or family's needs. Usually, the presenting problem(s) are of low to moderate severity. Physicians typically spend 15 minutes face-to-face with the patient and/or family.
Colorado Medicaid Reimbursement: **$45.75**

99214 Office or other outpatient visit for the evaluation and management of an established patient, which requires at least 2 of these 3 key components: A detailed history; a detailed examination; Medical decision making of moderate complexity. Counseling and/or coordination of care with other providers or agencies are provided consistent with the nature of the problem(s) and the patient's and/or family's needs. Usually, the presenting problem(s) are of moderate to high severity. Physicians typically spend 25 minutes face-to-face with the patient and/or family.
Colorado Medicaid Reimbursement: **$71.46**

99215 Office or other outpatient visit for the evaluation and management of an established patient, which requires at least 2 of these 3 key components: A comprehensive history; A comprehensive examination; Medical decision making of high complexity. Counseling and/or coordination of care with other providers or agencies are provided consistent with the nature of the problem(s) and the patient's and/or family's needs. Usually, the presenting problem(s) are of moderate to high severity. Physicians typically spend 40 minutes face-to-face with the patient and/or family.
Colorado Medicaid Reimbursement: **$103.60**

Of special note, CPT Codes for DSME/T and MNT: 98960, 98961, 97802, 97803, 97804 are not reimbursed by Colorado Medicaid at the time of this writing. These codes can be used to bill private insurance companies and are intended to be utilized when performing patient education. They were added to the CPT Codebook in 2006.

98960: Education and training for patient self-management by a qualified, non-physician health care professional using a standardized curriculum, face-to-face with the patient (could include caregiver/family) each 30 minutes, individual patient.

98961: 2-4 patients
98962: 5-8 patients

The purpose of these codes is to teach self-management of a patient's illness or disease, or delay disease co-morbidity. The curriculum used in patient education must be recognized by a physician society or by a non-physician healthcare professional society/association such as the ADA, AADE.

References:

American Academy of Pediatrics. 2008. Medicaid Reimbursement Survey, 2007/2008.
American Medical Association. 2009. AMABookstore.com. Accessed 9/24/09.
Nicoletti, B. 2006. How to Bill for Services Performed by Non-physician Practitioners. Family Practice Management Vol. 13, 5:14.
Healthcare Policy and Finance. Colorado.gov/hcpf. 2009 HCPCS Procedure Code Updates for 2009. Accessed 9/24/09.

DIABETES SELF-MANAGEMENT EDUCATION (DSME)

Establishing a Community-Based DSME Program for Adults with Type 2 Diabetes to Improve Glycemic Control

AN ACTION GUIDE

Partnership for Prevention®

Shaping Policies • Improving Health

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DIABETES MANAGEMENT

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Centers for Disease Control and Prevention
National Center for Chronic Disease Prevention and Health Promotion
Division of Adult and Community Health
Steps Program
4770 Buford Highway, NE, Mailstop K-93
Atlanta, GA 30341
PHONE: 770.488.6452 FAX: 770.488.8488 E-MAIL: nccdodsteps@cdc.gov
http://www.cdc.gov/steps

This publication and the other titles in *The Community Health Promotion Handbook* are available on the Internet to download or order at http://www.prevent.org/actionguides.

Diabetes Management

- *Diabetes Self-Management Education (DSME): Establishing a Community-Based DSME Program for Adults with Type 2 Diabetes to Improve Glycemic Control—An Action Guide*

Physical Activity

- *Places for Physical Activity: Facilitating Development of a Community Trail and Promoting Its Use to Increase Physical Activity Among Youth and Adults—An Action Guide*
- *School-Based Physical Education: Working with Schools to Increase Physical Activity Among Children and Adolescents in Physical Education Classes—An Action Guide*
- *Social Support for Physical Activity: Establishing a Community-Based Walking Group Program to Increase Physical Activity Among Youth and Adults—An Action Guide*

Tobacco-Use Treatment

- *Healthcare Provider Reminder Systems, Provider Education, and Patient Education: Working with Healthcare Delivery Systems to Improve the Delivery of Tobacco-Use Treatment to Patients—An Action Guide*

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April 2008
(Updated April 2009)

DIABETES SELF-MANAGEMENT EDUCATION (DSME)

Establishing a Community-Based DSME Program for Adults with Type 2 Diabetes to Improve Glycemic Control

AN ACTION GUIDE

Partnership for Prevention® is a nonprofit organization dedicated to preventing illness and injury and promoting health. Partnership's programs reach policy makers, a wide range of public health and healthcare professionals, businesses, and others who can emphasize prevention.

Partnership for Prevention®
1015 18th Street, NW, Suite 300
Washington, DC 20036
PHONE: 202.833.0009 FAX: 202.833.0113
http://www.prevent.org

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Project Advisory Committee

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Georges C. Benjamin, MD, FACP, *Chair*
Executive Director
American Public Health Association

The Honorable Roderick L. Bremby
Secretary
Kansas Department of Health and Environment

Ned Calonge, MD, MPH
Chief Medical Officer
Colorado Department of Public Health and Environment

Larry Cohen, MSW
Executive Director
Prevention Institute

Jonathan E. Fielding, MD, MPH, MBA
Director and Health Officer
Los Angeles County Department of Public Health

Paul K. Halverson, DrPH, MHSA
Director and State Health Officer
Arkansas Department of Health

Tom Kean, MPH
Executive Director
C-Change

Michelle Kegler, DrPH, MPH
Deputy Director
Emory Prevention Research Center
Associate Professor
Rollins School of Public Health
Emory University

Amy Friedman Milanovich, MPH
Deputy Director
Allies Against Asthma
Center for Managing Chronic Disease
University of Michigan

Marcus Plescia, MD, MPH
Chief
Chronic Disease and Injury Section
North Carolina Division of Public Health

Stephanie Zaza, MD, MPH
Captain, U.S. Public Health Service
Strategy and Innovation Officer
Coordinating Center for Terrorism Preparedness and Emergency Response
Steps Program Director (2003–2006)
National Center for Chronic Disease Prevention and Health Promotion
Centers for Disease Control and Prevention

Contributors

Partnership for Prevention recognizes the following individuals who contributed extensive knowledge and expertise as key informants and reviewers of *Diabetes Self-Management Education (DSME): Establishing a Community-Based DSME Program for Adults with Type 2 Diabetes to Improve Glycemic Control—An Action Guide*, one of five Action Guides that make up *The Community Health Promotion Handbook*.

Lawrence Barker, PhD
Associate Director for Science
Division of Diabetes Translation
National Center for Chronic Disease Prevention and Health Promotion
Centers for Disease Control and Prevention

Erica Barrett, MOT, MBA
The Ginn Group
Steps Program
Division of Adult and Community Health
National Center for Chronic Disease Prevention and Health Promotion
Centers for Disease Control and Prevention

Sharon A. Brown, PhD, RN, FAAN
James R. Dougherty, Jr. Centennial Professor of Nursing
The University of Texas at Austin

Carol A. Brownson, MSPH
Deputy Director
National Program Office
Robert Wood Johnson Foundation Diabetes Initiative
Washington University School of Medicine in St. Louis

Carl J. Caspersen, PhD, MPH
Associate Director for Science (1998–2006)
Division of Diabetes Translation
National Center for Chronic Disease Prevention and Health Promotion
Centers for Disease Control and Prevention

Alyssa Easton, PhD, MPH
Steps Program Director
Division of Adult and Community Health
National Center for Chronic Disease Prevention and Health Promotion
Centers for Disease Control and Prevention

Edwin B. Fisher, PhD
National Program Director
Robert Wood Johnson Foundation Diabetes Initiative
Professor and Chair
Department of Health Behavior and Health Education
University of North Carolina at Chapel Hill

Martha M. Funnell, MS, RN, CDE
Michigan Diabetes Research and Training Center
Department of Medical Education
University of Michigan Medical School

Russell Glasgow, PhD
Senior Scientist
Institute for Health Research
Kaiser Permanente Colorado

Tracy Ingraham
Northrop Grumman Corporation
Steps Program
Division of Adult and Community Health
National Center for Chronic Disease Prevention and Health Promotion
Centers for Disease Control and Prevention

Jan Norman, RD, CDE
Director
Chronic Disease Prevention Unit
Washington State Department of Health

Susan L. Norris, MD, MPH
Assistant Professor
Department of Medical Informatics and Clinical Epidemiology
Oregon Health and Sciences University

Mary L. O'Toole, PhD
Deputy Director
National Program Office
Robert Wood Johnson Foundation Diabetes Initiative
Washington University School of Medicine in St. Louis

Dawn W. Satterfield, RN, PhD
Native Diabetes Wellness Program
Division of Diabetes Translation
National Center for Chronic Disease Prevention and Health Promotion
Centers for Disease Control and Prevention

Darlene Thomas
Deputy Associate Director for Science
Division of Diabetes Translation
National Center for Chronic Disease Prevention and Health Promotion
Centers for Disease Control and Prevention

Chen-Yen Wang, PhD, CDE, ANP-BC
Associate Professor
School of Nursing
University of Hawaii at Manoa

Acknowledgments

Principal authors from Partnership for Prevention are Mamta Gakhar, MPH; Alyson Hazen, MPH; Hema Khanchandani, MPH, MA; and Amy Stitcher, MPH. Nancy Maddox, MPH, Consultant, served as contributing writer to this Action Guide.

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Table of Contents

Introduction

The Community Health Promotion Handbook: Action Guides to Improve Community Health is an important tool, composed of five Action Guides, that translates evidence-based recommendations into the necessary "how to" guidance for implementation of effective community-level health promotion strategies. Although *The Community Health Promotion Handbook* is designed primarily to assist public health practitioners in implementing evidence-based practices, additional audiences who may benefit from using this resource include local planners, advocates, policy makers, community and business leaders, community-based organizations, educators, healthcare providers, and others interested in improving health in their communities.

The Community Health Promotion Handbook was developed through a collaborative effort between Partnership for Prevention®—a national membership organization dedicated to building evidence of sound disease prevention and health promotion policies and practices and advocating their adoption by public and private sectors—and the Centers for Disease Control and Prevention (CDC). These implementation guidelines have emerged from the experiences of the 40 communities supported by CDC's Steps Program, which is creating models for how local communities can act to address chronic diseases. The Steps Program's current focus areas are obesity, diabetes, and asthma, as well as the related risk factors of physical inactivity, poor nutrition, and tobacco use.

All five Action Guides are based on specific health promotion recommendations from *The Guide to Community Preventive Services* (*Community Guide*), which is published by the Task Force on Community Preventive Services. This independent decision-making body makes recommendations for the use of various public health interventions on the basis of the evidence of effectiveness gathered in the rigorous and systematic scientific reviews of published studies. Although these recommendations advise on "what to do," they do not provide the guidance needed to successfully take the interventions "from the page to the field." Partnership for Prevention and CDC have worked together to bridge this gap between research and practice by developing *The Community Health Promotion Handbook*.

This Action Guide focuses on a specific approach for implementation of its related *Community Guide* recommendation. When selecting among effective interventions to improve health outcomes, you should first assess your resources and health priorities. After this up-front analysis is completed and this approach is deemed appropriate and viable for your community's needs, this Action Guide can be used to facilitate your activities.

The information within this Action Guide is intended to be generalizable to a range of communities, but you will need to determine what modifications may be necessary to meet your local health objectives. Rather than a prescriptive list of required actions, general steps and suggestions are provided in this guide to accommodate the unique aspects of communities and their resources. This Action Guide should be used along with technical assistance offered by experienced organizations, local or state health experts, public health program managers, researchers, or others with relevant expertise.

Introduction

Information in this Action Guide is organized under the following sections and appendixes:

- **Section 1: Overview of the Approach**
  This section provides information on the *Community Guide*'s recommendation and the supporting evidence, presents the specific approach used in this Action Guide, describes expected outcomes from implementing the approach, and suggests a role for the reader that both is feasible and maximizes the ability to effect change.

- **Section 2: Implementing the Approach**
  This section of the Action Guide provides the bulk of implementation guidance by addressing the "who," "what," "when," "where," and "how" of the activities. Key stakeholders you may want to engage are listed within this section, as well as their related interests and potential roles as partners. Action steps are laid out to follow a general progression, from *Getting Started* to *Moving Forward* to *Looking Beyond.* Although the action steps are numbered to suggest an order of activity you might consider, in practice, many steps will likely occur simultaneously or may occur in a sequence different from what appears in this Action Guide.

- **Appendix A: Determining Your Resource Needs**
  Personnel, material, and financial resources that may be needed to successfully plan, implement, and sustain the approach are suggested here. You must determine what resources are necessary, ways to obtain those resources, and their costs. In the personnel resources subsection, a table presents a summary of tasks to allocate or assign among the main individuals and groups involved. The material and financial resources subsections each contain a list of items to consider based on the activities described in this Action Guide.

- **Appendix B: Evaluating Your Activities**
  Evaluation is a crucial component of public health practice and should begin to be addressed during the planning stage. Although it is outside the scope of this Action Guide to provide specific guidance on how to conduct an evaluation, this appendix does provide questions to help you collect data for process and outcome evaluations. Potential sources of data relevant to the approach are also included.

- **Appendix C: References and Resources**
  Here you will find a list—by topic—of references used in the development of this Action Guide and resources that provide information on similar approaches; tools for planning, implementation, and evaluation; and general guidance.

- **Appendix D: Glossary of Selected Terms**
  Words that are listed in this appendix are *italicized* in the guide's text whenever they are used in order to alert you that a definition is provided.

Section 1
Overview of the Approach

The Evidence

Research has shown that community-based diabetes self-management education (DSME) is an effective intervention for improving *glycemic control* among adults of various racial and ethnic backgrounds with *type 2 diabetes.* The goals of DSME are to improve metabolic control and quality of life, to reduce *diabetes-related complications,* and to minimize healthcare costs. Community-based DSME—offered in settings outside the home, clinic, school, or worksite—can include such diverse community gathering places as community centers, libraries, private facilities, and faith-based institutions. It is typically delivered by health professionals and public health practitioners and should include coordination with an individual's primary care provider and any diabetes education received in a clinical setting.

Diabetes self-management education is an interactive, collaborative process that can equip adults with basic knowledge to manage their *type 2 diabetes* while focusing on their self-identified problems and goals. It emphasizes problem solving and decision making as they relate to core diabetes self-care skills such as healthy eating, physical activity, proper dental care, and monitoring *blood glucose level*. Community-based DSME—with its emphasis on convenient locations, community support, and cultural relevance to participants—is especially important for reaching people who have limited access to formal healthcare, do not speak English, or may not have the option of home-, clinic-, school-, or worksite-based diabetes education.

The Task Force on Community Preventive Services (TFCPS) recommends that DSME be offered in community gathering places to help adults with *type 2 diabetes* manage their disease and improve their *glycemic control.* This recommendation is based on sufficient evidence of effectiveness found through a systematic review of published studies conducted by a team of experts on behalf of the TFCPS. Information on their recommendation, published in *The Guide to Community Preventive Services: What Works to Promote Health?* (*Community Guide*), is presented in Table 1 on page 5. Related publications by the TFCPS and reviews by other organizations are listed under "Evidence-Based Reviews of DSME in Community Gathering Places" in Appendix C: References and Resources.

Information presented in this Action Guide also incorporates the latest recommendations of the task force charged with reviewing and revising the National Standards for DSME. The task force was jointly convened by the American Association of Diabetes Educators and the American Diabetes Association, with additional representation from other key organizations and federal agencies within the diabetes education community. According to the updated National Standards for DSME, published in June 2007 (http://care.diabetesjournals.org/cgi/content/full/30/6/1630), "DSME is a critical element of care for all people with diabetes and is necessary in order to improve patient outcomes. The National Standards for DSME are designed to define quality diabetes self-management education and to assist diabetes educators in a variety of settings to provide evidence-based education." The following principles were used to guide the review and revision of the national standards: "1) Diabetes education is effective for improving clinical outcomes and quality of life, at least in the short-term. 2) DSME has evolved from primarily didactic presentations to more theoretically-based empowerment models. 3) There is no one 'best' education program or approach; however, programs incorporating behavioral and psychosocial strategies demonstrate improved outcomes. Additional studies show that culturally- and age-appropriate programs improve outcomes and that group education is effective. 4) Ongoing support is critical to sustain progress made by participants during the DSME program. 5) Behavioral goal-setting is an effective strategy to support self-management behaviors."

Section 1—Overview of the Approach

The Approach

This Action Guide focuses on assisting local public health practitioners in improving *glycemic control* of adults with *type 2 diabetes* through the following approach: **establishing a community-based DSME program.** On the basis of an assessment of their resources and community's needs, public health practitioners committed to helping adults in their community better manage their diabetes may find this approach to be appropriate and viable.

Expected Outcomes

Communities that successfully establish one or more community-based DSME programs targeting adults with *type 2 diabetes* can expect to see the following results:

- These programs will help adults of various ages and racial or ethnic backgrounds develop appropriate diabetes management knowledge and skills.
- Among participants, *glycemic control* will improve, potentially leading to a decrease in *diabetes-related complications* and premature death.

Implementing this approach can be useful in addressing diabetes objectives of the national Healthy People 2010 initiative, such as increasing the proportion of adults with diabetes 1) who receive formal diabetes education and 2) who perform *blood glucose level* self-monitoring at least once daily.

Your Role

As a public health practitioner, your role in providing DSME will depend on the needs of your community and the resources and capacity you have to establish a community-based DSME program. An effective DSME program requires thorough planning and organization; therefore, one option for you to consider is to oversee the planning, implementation, and evaluation of the DSME program if, as recommended in the 2007 National Standards for DSME, you have academic or experiential preparation in chronic disease care and education and in program management. **The role of program coordinator is the focus of this Action Guide.**

Table 1: Highlights of *Community Guide*'s Recommendation

Recommendation

Diabetes Self-Management Education in Community Gathering Places for Adults with *Type 2 Diabetes*—Sufficient Evidence of Effectiveness

Findings

Diabetes self-management education for people 18 years of age or older can be provided in such community gathering places as community centers, libraries, private facilities (e.g., cardiovascular risk reduction centers), and faith-based institutions. Although recommended for improving *glycemic control*, the interventions reviewed were rarely coordinated with the individual's clinical care provider, and the nature and extent of care in the clinical setting was unclear. These interventions should be coordinated with the individual's primary care provider and are not meant to replace education delivered in the clinical setting.

Effectiveness

- Diabetes self-management education in community gathering places is effective in decreasing *glycohemoglobin* (GHb) by approximately 2 percentage points.

Applicability

- These findings should be applicable to adults with *type 2 diabetes*, with a range of racial and ethnic backgrounds, in a variety of settings.
- Applicability may be limited, however, because study populations were self-selected, had high attrition rates, and had high baseline *glycohemoglobin* (GHb) levels.

Additional Considerations

- TFCPS reviewed DSME interventions in which people aged 18 or older were educated in settings outside the home, clinic, school, or worksite because clinic settings may not be ideal for DSME, the home setting is conducive only to individual and family teaching, and the worksite is available only to people who work outside the home. Thus, DSME in community gathering places may reach people who would not normally receive this education. Community interventions often offer the benefit of cultural relevance, possibly because the diverse learning styles of different cultures are better addressed in the community setting. The increased cultural relevance may increase acceptance of diabetes education. Interventions in community gathering places also may be more convenient, especially for those in rural areas, and may thus promote attendance.
- TFCPS identified potential barriers to implementing these interventions. In community settings, it may be difficult to find people who should receive DSME training. Participants are generally self-selected, and more general recruitment may be difficult. Another issue may be coordinating these interventions with the patient's primary care team.

Source

Excerpts taken from Task Force on Community Preventive Services. *The Guide to Community Preventive Services: What Works to Promote Health?* New York, NY: Oxford University Press; 2005:201–203. Available at: http://www.thecommunityguide.org/library/book (Chapter 5: Diabetes).

Section 2
Implementing the Approach

Table 2 summarizes the action steps that are recommended for successfully establishing a diabetes self-management education (DSME) program in your community. The numbering of action steps is meant only to suggest an order of activity you might consider; in practice, there is no exact order to the steps—many steps will likely occur simultaneously or may occur in a sequence different from what appears in this Action Guide. In addition, the timeline for completing each step is highly dependent on a community's particular circumstances. Use this Action Guide to inform and direct your activities, making sure to seek additional technical assistance with your efforts and realizing that you will need to determine how these steps best fit your community.

Table 2: Action Steps for Establishing a Community-Based DSME Program for Adults with Type 2 Diabetes to Improve Glycemic Control

Getting Started

- Action Step 1— Conduct a comprehensive community assessment to learn about existing diabetes education resources in your area, gaps in those resources, and the self-perceived needs of your target audience.
- Action Step 2— Begin organizing the human, material, and financial resources you will need for establishing a DSME program.
- Action Step 3— Engage existing partners and key stakeholders by informing them about your plans to develop a DSME program and educating them about its benefits.
- Action Step 4— Bring together committed partners and stakeholders in the form of an advisory board to oversee the DSME program, and begin planning for the evaluation component.
- Action Step 5— Work with the advisory board to make decisions about the structure and scope of the DSME program.
- Action Step 6— Work with the advisory board to recruit instructional and administrative staff.
- Action Step 7— Work with the advisory board and instructional staff to develop, review, and refine the DSME curriculum.
- Action Step 8— Help to secure a community gathering place for DSME classes.

Moving Forward

- Action Step 9— Collaborate with the advisory board and instructional staff to review and refine your program evaluation activities and to develop your continuous quality improvement plan.
- Action Step 10— Publicize the DSME program throughout the community to raise awareness and register interested members of your target audience.
- Action Step 11— Organize an orientation session for all program staff.
- Action Step 12— Begin providing DSME classes.

Looking Beyond

- Action Step 13— Ensure that instructional staff members receive appropriate and ongoing training in diabetes management and in teaching and counseling skills.
- Action Step 14— Explore methods for sustaining and disseminating the DSME program.

Boxes marked with this lightbulb icon present tips, ideas, and additional information on implementing an action step and may also provide Web site links to helpful resources.

Boxes marked with this hurdler icon describe possible obstacles that may occur during implementation and offer suggestions for successfully overcoming those hurdles.

Getting Started

As you progress through the steps in this Action Guide, you may wish to consult experienced organizations—such as the ones noted here—for additional information about implementing a DSME program.

- American Association of Diabetes Educators offers resources, teaching and evaluation tools for *diabetes educators,* information on locating a *diabetes educator* in your area, and links to continuing education opportunities at http://www.diabeteseducator.org.
- American Diabetes Association provides a wealth of information and tools for consumers, researchers, and health professionals; steps to apply for DSME program recognition; and an online bookstore at http://www.diabetes.org.
- Diabetes Initiative of the Robert Wood Johnson Foundation provides links to DSME programs, training and assessment materials, and a section on "lessons learned" submitted by grantees at http://diabetesnpo.im.wustl.edu/index.html.
- Division of Diabetes Translation at the Centers for Disease Control and Prevention (CDC) provides data and trends on diabetes, a variety of informational materials (e.g., fact sheets, brochures, reports), and links to diabetes projects at http://www.cdc.gov/diabetes.
- Indian Health Service's Division of Diabetes Treatment and Prevention offers DSME program recognition and a variety of educational materials tailored for American Indians and Alaska Natives at http://www.ihs.gov/MedicalPrograms/Diabetes/index.asp.
- National Diabetes Education Program offers information on diabetes awareness campaigns, resources for healthcare professionals and consumers, and developing community partnerships at http://www.ndep.nih.gov.

Also, it is strongly encouraged that you become familiar with the latest version of the National Standards for DSME (at http://care.diabetesjournals.org/cgi/content/full/30/6/1630) and integrate, wherever appropriate, its recommendations into your program as you progress through the action steps in this guide.

■ **Action Step 1—Conduct a comprehensive community assessment to learn about existing diabetes education resources in your area, gaps in those resources, and the self-perceived needs of your target audience.** The results of this assessment will help to determine the best way to move forward in establishing a DSME program in your community. You may want to contact your local health department to see if a community assessment has already been conducted.

Consider the following activities to learn about existing diabetes education resources in your area and to determine any gaps in available resources:

➤ Identify existing diabetes education resources and DSME programs serving your community. Arrange interviews with program staff of these DSME programs to find out what services they offer, who uses them, and with what frequency. You may want to use these interviews to determine whether racial or ethnic groups in your community are using available services and to gather staff recommendations on key diabetes education resources.

The following organizations should be good sources of information on existing diabetes education resources in your area:

- American Diabetes Association at http://www.diabetes.org.
- American Association of Diabetes Educators at http://www.diabeteseducator.org/About/membership/chapters.html.
- Your state Diabetes Prevention and Control Program at http://www.cdc.gov/diabetes/states/index.htm.
- Local *diabetes educators* at http://www.diabeteseducator.org/DiabetesEducation/Find.html.
- Your local *cooperative extension service* office at http://www.csrees.usda.gov/Extension/index.html.
- Local medical centers and physician practices serving patients with diabetes.

The Diabetes Initiative of the Robert Wood Johnson Foundation has developed a framework of key "resources and supports for diabetes self-management (RSSM)" (http://www.ajph.org/cgi/content/abstract/95/9/1523). You may want to consider the extent to which existing diabetes education programs offer the following resources and supports to their participants:

- An individualized assessment of medical history, health beliefs, diabetes knowledge, self-management skills and behaviors, readiness to learn, cognitive ability, physical limitations, family support, and financial status.
- Collaborative goal setting, with ongoing assessment of progress and appropriate revision of goals.
- Education on concrete behaviors and skills such as how to read food labels, test *blood glucose level*, or engage in healthy coping.
- Ongoing follow-up and support, including routine contacts (if desired) and "as needed" options for patients with self-management questions.
- Community resources, such as farmers markets and safe walking paths, to support effective diabetes self-management.
- Linkage to the healthcare system to promote continuity of care.

➤ Ask healthcare providers what they would like to see in the community with respect to diabetes support, how they envision their role, and how they may contribute their knowledge, skills, and resources.

Healthcare providers are sometimes reluctant to work with community-based programs because they may be unsure of the quality of advice that such programs provide and because they may want to protect their role as providers of diabetes education. To help gain early support during your assessment, emphasize that your goals include helping patients to follow prescribed medical advice and continue their medical care. Once your program is underway, follow through by securing participants' written consent to notify their healthcare providers of their involvement with the DSME program, results of physiologic measures (e.g., *hemoglobin A1c*, blood pressure) taken as part of the program, and their progress in meeting their diabetes self-management goals.

- Identify resources in your community that could be useful for residents with diabetes, such as clinics and nutrition services. Also identify potential places for physical activity including parks and other walking areas, local recreational facilities, and community centers.
- Reach out to community leaders to gain insight about the need for increased health education, as well as the strengths of the community in providing support for DSME.

Consider the following activities to learn about the self-perceived needs of your target audience and to further determine any gaps in available resources:

- Carefully determine your target audience because both the structure and scope of the program will be geared to the needs of intended program participants. Standard 3 of the 2007 National Standards for DSME notes that "clarifying the target population and determining its self-management educational needs serve to focus resources and maximize health benefits." Many DSME programs fail to tailor education to the needs and interests of participants. A program for working moms, for example, might be structured differently than a program for recent retirees. Programs that tailor education to community members and incorporate time for participant input from the initial stages of development throughout the life of the program are more likely to actively engage participants.
- Conduct focus groups or one-on-one interviews with prospective program participants and their families. These discussions may help you to better understand the current level of basic diabetes knowledge of prospective participants; their perceived success with diabetes self-management; what prospective participants want out of a DSME program; their previous experience with diabetes education; and personal and environmental barriers to improved diabetes self-management and program participation (e.g., transportation and time constraints; child care needs; family, cultural, and community practices; poor access to clinical care; lack of social support, high-quality foods, and physical activity opportunities).

Information on conducting focus groups can be found at http://www.managementhelp.org/evaluatn/focusgrp.htm and http://www.sph.umn.edu/img/assets/18528/FocGrp_Conducting.pdf.

Many tools exist to assess diabetes knowledge, perceived barriers to self-management, and psychosocial issues related to diabetes that you may find helpful when assessing your potential target audience, such as

- *Diabetes Concerns Assessment Form*
  Developed by the Michigan Diabetes Research and Training Center and available on request at http://www.med.umich.edu/mdrtc/profs/index.htm.
- *Diabetes Distress Scale*
  Polonsky WH, Fisher L, Earles J, et al. Assessing psychosocial distress in diabetes: development of the diabetes distress scale. *Diabetes Care*. 2005;28(3):626-631. Available at: http://care.diabetesjournals.org/cgi/content/full/28/3/626.
- *Diabetes Self-Efficacy Scale* and other self-assessment scales
  Developed by the Stanford Patient Education Research Center and available at http://patienteducation.stanford.edu/research/index.html in both English and Spanish.
- *Spanish Language Diabetes Knowledge Questionnaire*
  Garcia AA, Villagomez ET, Brown S, et al. The Starr County diabetes education study: development of the Spanish-language diabetes knowledge questionnaire. *Diabetes Care*. 2001;24(1):16-21. Available at: http://care.diabetesjournals.org/cgi/content/full/24/1/16.

Action Step 2—Begin organizing the human, material, and financial resources you will need for establishing a DSME program.

➤ Refer to Appendix A: Determining Your Resource Needs for information on personnel, material, and financial resources that may be needed to successfully plan, implement, and sustain the program. Make these determinations during the upcoming action steps as you establish the scope of your activities.

Action Step 3—Engage existing partners and key stakeholders by informing them about your plans to develop a DSME program and educating them about its benefits.

➤ Success in implementing this approach will depend on forming good relationships with various stakeholders who are invested in DSME. Certain partners and stakeholders may be key decision makers whose influence within and understanding of the community are essential throughout program planning, implementation, and evaluation. Types of stakeholders that you may choose to partner with are listed in Table 3. Some communities may have many stakeholders and others may have only a few. When deciding how to engage different types of stakeholders, consider the potential role that each can and will want to play on the basis of their interests relating to diabetes education.

Table 3: Stakeholders' Related Interests and Their Possible Roles as Partners

Stakeholders	Related Interests	Roles as a Partner
Adult residents with *type 2 diabetes* and their families	■ Reduced *diabetes-related complications* and improved quality of life ■ Improved diabetes self-management ■ Reduced barriers to participation in DSME classes (e.g., convenient time and location)	■ Identify diabetes self-management needs, potential program barriers, and strategies for success ■ Help to recruit new program participants ■ Serve as peer mentor or "buddy" ■ Serve on program advisory board
Existing diabetes education and general patient education programs in clinical or community settings	■ Ongoing program improvement ■ Participant satisfaction ■ Quality diabetes education ■ Adequate program funding	■ Inform community assessment ■ Contribute staff time to DSME program ■ Sponsor DSME program ■ Provide educational resources ■ Serve on program advisory board
Physicians	■ Quality of community-based DSME ■ Preservation of role as definitive source of diabetes information ■ Patient implementation of self-care regimens and achievement of targeted clinical outcomes ■ Improved patient health	■ Refer patients to DSME program and monitor patients' outcomes ■ Reinforce value of patient participation in DSME program ■ Provide clinical care for patients with diabetes ■ Serve on program advisory board
Other health professionals, including *diabetes educators*	■ Quality diabetes education ■ Improved patient health ■ Support of *community health workers*	■ Identify common diabetes self-management problems and important educational messages ■ Oversee curriculum development ■ Organize or teach DSME classes ■ Supervise or train other program staff (e.g., *community health workers*) ■ Identify local DSME resources ■ Serve on program advisory board

continued on next page

Table 3: Stakeholders' Related Interests and Their Possible Roles as Partners, cont'd

Stakeholders	Related Interests	Roles as a Partner
Community health workers	■ Empowerment of community members ■ Improved public health	■ Provide support services for DSME curriculum ■ Provide behavioral and emotional support to participants ■ Link participants to healthcare resources ■ Serve on program advisory board
Local and national diabetes organizations	■ Diabetes prevention and management	■ Identify DSME resources and events ■ Provide educational materials and expertise ■ Serve on program advisory board
Schools of nursing, public health, preventive medicine, social work, dentistry, pharmacy, and health education, and other schools involved with diabetes-related issues	■ Student training ■ Community-based research ■ Improved public healthw	■ Provide students or faculty to assist with DSME program planning and delivery ■ Serve on program advisory board
Local and state health departments	■ Improved public health	■ Provide resources and leadership ■ Refer people to DSME program and provide supporting education services ■ Serve on program advisory board
Cooperative extension service office	■ Improved community health and nutrition	■ Provide nutrition educators or diabetes nutrition education resources ■ Serve on program advisory board
Community leaders	■ Community health promotion ■ Recognition for role in supporting program	■ Provide material resources to support DSME program ■ Help to promote the DSME program ■ Serve on program advisory board
Employers	■ Reduced employee healthcare costs resulting from improved *glycemic control* for employees with diabetes	■ Promote DSME program to employees ■ Serve on program advisory board
Local businesses	■ Good community relations ■ Promotion of products and services	■ Contribute donations to support program (e.g., store coupons for incentives, *glucose* monitoring supplies) ■ Support diabetes self-management goals through products and services
Local media (television, radio, newspaper, Internet)	■ News coverage of local issues ■ Public service announcements	■ Inform the public about DSME program and promote its use

- After you have identified key stakeholders in your community, determine the best way to educate these individuals and groups about your plans. For example, you might decide to invite them to an informational session about the DSME program you hope to establish. Also consider providing information at local health promotion events about the importance of DSME and how a community-based DSME approach can benefit the community. Continue to communicate these benefits throughout your ongoing activities.

Action Step 4—Bring together committed partners and stakeholders in the form of an advisory board to oversee the DSME program, and begin planning for the evaluation component.

- Establish an advisory board. Members might include community leaders; *certified diabetes educators* and other health professionals—such as physicians, nurses, dietitians, and pharmacists—who frequently assist or treat people who are diabetic; community members who have diabetes or have a family member with diabetes; and other stakeholders listed in Table 3. Advisory boards are helpful in achieving buy-in from important partners and stakeholders, in helping to ensure a program that is relevant to participants, and in advocating for improved environmental supports for those with diabetes, such as better resources for healthy diet and physical activity. The advisory board can also help ensure that the DSME program has "documentation of its organizational structure, mission statement, and goals," as noted in standard 1 of the 2007 National Standards for DSME.

When creating a working group to oversee your program's activities, be aware that advisory boards are mandatory for DSME programs seeking formal recognition by the American Diabetes Association (ADA) or the Indian Health Service (IHS)—a prerequisite for Medicare reimbursement. This requirement is in keeping with standard 2 of the 2007 National Standards for DSME, which states that "The DSME entity shall appoint an advisory group to promote quality." For information about the ADA recognition program, visit http://professional.diabetes.org/Recognition.aspx. For information about the IHS recognition program, visit http://www.ihs.gov/MedicalPrograms/Diabetes/index.cfm?module=programsIDERP.

- Identify people with experience in program planning, implementation, and evaluation who may be able to serve in leadership roles on the advisory board. Appendix A: Determining Your Resource Needs provides you with a basic list of advisory board tasks that are identified in the action steps of this guide.
- Start to draft an evaluation plan with the advisory board for assessing your program and the outcomes of using this community-based DSME approach to improve participants' *glycemic control*. Action Step 9 addresses the need to review and refine your evaluation activities when you have entered the "moving forward" stage. Although specific guidance on conducting an evaluation is outside the scope of this Action Guide, you will find information within this guide to help you prepare for and develop an evaluation plan. Review Appendix B: Evaluating Your Activities for the types of questions to ask to guide you in gathering process and outcome data for program evaluation needs. Refer also to "Resources for Developing an Evaluation Plan" in Appendix C: References and Resources.
- Hold advisory board meetings at regular intervals to address program development tasks. Beyond program implementation, the advisory board will need to convene periodically to review and evaluate program performance and make recommendations.

■ **Action Step 5—Work with the advisory board to make decisions about the structure and scope of the DSME program.** Both the structure and scope of the program should be geared to the needs of intended program participants, as determined by your community assessment in Action Step 1. You may want to review existing DSME curricula (discussed in Action Step 7) for ideas on structure and scope of your program.

Through the following activities, determine the structure of your DSME program—whether it will be based on a partnership or sponsorship or be independent—and identify the existing funding and funding opportunities available through this structure.

- Determine how your program can complement existing DSME resources. For example, a nearby hospital or university medical center that runs a comprehensive diabetes education program may be interested in expanding to a community-based site. Or you could assist an established DSME program by providing follow-up and support services.
- Discuss the pros and cons of collaborating with an existing organization. Because diabetes is a medically complex disease, your program will likely benefit from partnership with or sponsorship by healthcare professionals. Consider approaching a health-related organization such as a nursing school, Veterans Affairs medical center, or primary care setting about assuming partial ownership of the DSME program. Be aware that partnering with an existing organization may provide your community-based program with resources (e.g., funding, instructional and administrative staff) and a supportive infrastructure, but you may have less control over certain program aspects such as choosing a curriculum.
- Discuss the pros and cons of developing a new program. Perhaps you found during your initial assessment that a need exists for an entirely new program, albeit one that coordinates with existing medical and educational resources. Be aware that starting a new program may grant greater autonomy but could be more difficult and take longer to get up and running.
- Research potential sources of financial and other support. Hospitals, medical centers, or academic training programs for clinicians may choose to sponsor your program, whether through a partnership or other mechanism. Other sources of general funding or in-kind support include local charities and foundations, pharmaceutical companies, public health agencies, local businesses, faith-based institutions, and community groups. Based on the structure of your DSME program, develop and pursue a plan for obtaining funding through grants, Medicare reimbursement (requires formal program recognition by ADA or IHS—discussed in Action Step 14), or other sources of financial support.
- Make your final decision about the program's structure and its financial support on the basis of what best meets the specific needs of your community, your target audience, the intended scope of the program, and your resources.

Concurrently, take into account the target audience and the program's structure and financial support when developing options for the scope of the program.

- Identify the intended scope of the DSME provided through your community-based program. A program can be comprehensive and cover content areas recommended in standard 6 of the National Standards for DSME to help participants manage their *type 2 diabetes*. Other types of DSME programs are narrower in scope and either supplement existing DSME resources and programs or address specific elements of successful self-management behavior (e.g., programs that focus on physical activity education, nutrition education, social support for lifestyle changes, or healthy coping skills).

If interested in starting a walking group as a component of your DSME program to encourage physical activity, refer to another Action Guide in *The Community Health Promotion Handbook*, entitled *Social Support for Physical Activity: Establishing a Community-Based Walking Group Program to Increase Physical Activity Among Youth and Adults* (http://www.prevent.org/actionguides).

- **Action Step 6—Work with the advisory board to recruit instructional and administrative staff.** Your staffing needs will be partly determined by the structure and scope of your DSME program, which were addressed in Action Step 5. After establishing your core instructional team and selecting your curriculum, additional instructional staff can be recruited if it is determined that other expertise or credentials are needed in presenting portions of the selected curriculum.

  - Identify individuals who can perform administrative tasks in support of your program, as discussed in the personnel subsection of Appendix A: Determining Your Resource Needs.

  - Identify individuals who can serve as instructors to deliver the program content. Follow up with hospitals, clinics, medical centers, and existing diabetes programs visited during your community assessment for recommendations on available instructors. Instructional staff should have expertise in specific content areas pertaining to diabetes, appropriate interpersonal skills, and proficiency in teaching and communications techniques. In standard 5 of the 2007 National Standards for DSME, it is recommended that a registered nurse, registered dietitian, and/or pharmacist take a lead role in preparing and delivering the DSME, and that all instructional staff will have "recent educational and experiential preparation in education and diabetes management or will be *certified diabetes educators*." Comprehensive DSME programs often rely on a multidisciplinary team of health professionals to collaborate in overseeing curriculum development and in teaching most content areas. Regardless of your program's curriculum, identify backup instructors who can take over if a primary instructor is temporarily unavailable, drops out of the program altogether, or finds the content outside his or her scope of practice and expertise.

Consider recruiting *community health workers* who can provide services to support your DSME curriculum and can also offer ongoing diabetes self-management support to participants. In many communities, *community health workers* are considered important promoters of healthy lifestyles who provide culturally appropriate health education; help individuals with diabetes to problem solve when incorporating self-management routines into their lifestyle; lead activities such as exercise groups; recruit new participants into the program; help individuals access healthcare; provide encouragement, informal counseling, and social support; and perform other valuable services. *Community health workers* can make substantial contributions to DSME programs, but must receive appropriate training and supervision to effectively support participants and your program.

Action Step 7—Work with the advisory board and instructional staff to develop, review, and refine the DSME curriculum.

➤ Research existing DSME curricula and diabetes education materials, with particular focus on curricula that have been determined to be effective through evidence-based research. Decide whether you want to develop a new curriculum or use an existing curriculum that you will tailor to program participants' needs, health beliefs, cultural influences, and functional health literacy level. By modifying an existing DSME curriculum to meet program needs, you may be able to save your group time and money.

The resources listed below are examples of DSME curriculum that may be appropriate for your program participants. Some curricula are free, whereas others require purchase.

- *Life with Diabetes: A Series of Teaching Outlines by the Michigan Diabetes Research and Training Center* can be used to design and implement DSME classes. For more information on this curriculum, which is published and sold by the American Diabetes Association, go to http://www.med.umich.edu/mdrtc/profs/index.htm.
- To access DSME curricula developed for older adults with *type 2 diabetes*, visit the American Society on Aging at http://www.asaging.org/cdc/module7/home.cfm and the National Council on Aging at http://www.healthyagingprograms.org/resources/MP_HealthyChanges.pdf.
- The North Carolina Diabetes Advisory Council developed a comprehensive DSME curriculum that contains 10 modules with an array of teaching tools. Download this curriculum at http://www.ncdiabetes.org/programs/selfManagement.asp.
- Washington State University has a free nutrition-focused curriculum consisting of an introduction and four lessons. Access this curriculum at http://nutrition.wsu.edu/diabetes/lwd.html.
- The Native American Diabetes Project's "Strong in Body and Spirit" DSME curriculum, which incorporates American Indian culture, can be obtained at http://www.laplaza.org/health/dwc/nadp.
- The Stanford Patient Education Research Center developed the "Tomando Control de su Diabetes" DSME curriculum for Spanish-speaking people with *type 2 diabetes*. Workshops are facilitated by leaders using a detailed manual (training and licensing required). An English version is also available. For more information, go to http://patienteducation.stanford.edu.

Refer to the following publications for information on effective strategies for teaching DSME:

- *The Art and Science of Diabetes Self-Management Education*, available from the American Association of Diabetes Educators, takes a patient-centered approach to teach *diabetes educators* effective strategies for enacting behavior change in those with diabetes. For information on this book, go to http://www.diabeteseducator.org/ProfessionalResources/products.
- *The Art of Empowerment: Stories and Strategies for Diabetes Educators, 101 Tips for Diabetes Self-Management Education,* and *101 Tips for Behavior Change in Diabetes Education* are examples of resources from the American Diabetes Association (ADA). For information on these books, visit the ADA's bookstore at http://store.diabetes.org.

- Consult organizations for curriculum development assistance as needed, such as local and regional hospitals; state and local health departments; local schools of nursing, public health, preventive medicine, social work, dentistry, pharmacy, health education, and other schools involved with diabetes-related issues; and local chapters of the American Diabetes Association and the American Association of Diabetes Educators.
- Ensure that the curriculum is designed to achieve your program's goals and incorporates one or more of the content areas laid out in the 2007 National Standards for DSME. Also, establish learning and behavioral outcome measures for each lesson in the curriculum.

When determining the curriculum for your DSME program, review standards 6–9 of the 2007 National Standards for DSME for information on developing a curriculum that reflects current evidence and practice guidelines, conducting an assessment of each participant's educational needs, developing—with participant involvement—an individualized education plan and an ongoing self-management support plan, and measuring attainment of participant-defined goals and participant outcomes at regular intervals.

According to the national standards, assessed needs of the participant should be used to determine which of the following content areas are to be provided:

- Describing the diabetes disease process and treatment options.
- Incorporating nutritional management into lifestyle.
- Incorporating physical activity into lifestyle.
- Using medication(s) safely and for maximum therapeutic effectiveness.
- Monitoring *blood glucose level* and other parameters and interpreting and using the results for self-management decision making.
- Preventing, detecting, and treating *acute diabetes-related complications*.
- Preventing, detecting, and treating *chronic diabetes-related complications*.
- Developing personal strategies to address psychosocial issues and concerns.
- Developing personal strategies to promote health and behavior change.

These content areas incorporate the following seven diabetes self-care behaviors that have been identified by the American Association of Diabetes Educators as key to effective diabetes self-management: 1) healthy eating, 2) being active, 3) monitoring, 4) taking medication, 5) problem solving, 6) reducing risks, and 7) healthy coping. Refer to the AADE7™ Self-Care Behaviors framework, at http://www.diabeteseducator.org/ProfessionalResources/AADE7, to learn more about these self-care behaviors, ways to measure them, and how to use the measures when assessing how well the DSME program has been implemented.

- In addition to lessons that teach participants skills for enhancing self-efficacy (e.g., personal goal setting, collective problem-solving to overcome self-identified barriers to diabetes self-management) and overcoming psychosocial factors that may hinder diabetes self-management, consider lessons that teach participants skills for advocating environmental changes that support diabetes self-management (e.g., access to quality food) to public officials and healthcare systems.
- Make decisions on items relating to curriculum delivery, including class size, frequency, and length; lesson format; and educational strategies for teaching adults (such as engaging participants through culturally appropriate examples). Plan to avoid lectures and instead rely on formats that allow for peer discussion and support. Although little research exists on the optimal frequency of DSME,

a typical program might consist of one to two meetings per week for eight weeks with booster sessions or telephone follow-up to problem solve any issues arising beyond program conclusion. Set a standard, but remember that once your program is underway, class participants can help to decide what approaches, frequency, and methods work best for them.

Use multiple components to increase the overall effectiveness of your program when developing your curriculum. Single-component programs (e.g., cooking demonstrations), particularly those that rely heavily on lectures, tend to be less effective than multicomponent programs (e.g., cooking demonstrations plus the following activities: guided grocery store tours, moderated group problem-solving sessions, and self-directed diet action plans).

DSME that is not culturally relevant may be less appealing to your participants, potentially resulting in low attendance rates. To increase your program's appeal, ensure that it is culturally inclusive, sensitive, and supportive, and that instructors understand participants' health beliefs, cultural norms, and values. Convey information in participants' preferred language and at an appropriate reading level, integrate ethnic food preferences into nutrition education and cooking demonstrations, and feature individuals of the same racial or ethnic group in graphics and videos. Examples of activities that are culturally relevant may include framing educational sessions as social events with meals and family participation (such as incorporating African-American food traditions) and using stories as teaching tools (such as incorporating a traditional American Indian practice to pass on knowledge).

- Present the initial curriculum to the advisory board for review and to receive suggestions for improvement. Make changes as necessary to ensure clarity, appropriateness of outcome measures, and integration of content areas relevant to your target audience.
- Conduct focus groups or in-depth interviews with your target audience to generate feedback on the curriculum and any instructional materials. Ask *community health workers* or other staff with ties to the community for help in arranging focus groups and interviews and in recruiting participants. Provide any training needed for staff to conduct these sessions.
- If time and resources allow, pilot test key parts of the program with a small group of prospective participants. Use feedback to revise the curriculum and relevant materials as appropriate.
- Consider building a library of diabetes education materials that are in your participants' language and reflect their culture to supplement your DSME curriculum.

Diabetes education materials written in languages other than English can also be found on the Internet. For example, CDC (at http://www.cdc.gov/diabetes/spanish/pubs.htm) and the Diabetes Initiative of the Robert Wood Johnson Foundation (at http://diabetesnpo.im.wustl.edu/resources/SpanishMaterial.html) provide materials in Spanish. The National Diabetes Education Program has materials available in several languages (at http://www.ndep.nih.gov/diabetes/pubs/catalog.htm) and provides links to other Web sites that have translated materials in a variety of languages (at http://www.cdc.gov/diabetes/ndep/lang.htm).

Section 2—Implementing the Approach

Action Step 8—Help to secure a community gathering place for DSME classes.

- Choose a location for classes that is acceptable and easily accessible to your participants. It should offer the resources (e.g., adequate space, basic kitchen facilities) needed to implement your curriculum and have dependable availability at scheduled meeting times. Community centers, faith-based institutions, libraries, and private facilities (e.g., cardiovascular risk reduction centers) are potential sites for your program. Locations may have been identified during your community assessment, but your advisory board may offer additional suggestions. Discuss any applicable rental or use procedures with the appropriate individuals at your chosen location. Many existing community-based DSME programs have been successful at securing space free of charge or for a nominal fee.

Community-based DSME programs tend to reach a small proportion of the total target population. Reasons for poor turnout include unacceptable or inaccessible locations and lack of transportation for participants to attend DSME classes. Anticipating obstacles to participation and planning how to overcome them should help to increase turnout once your program gets started. Choose a convenient location that does not require participants to cross perceived geographic or cultural boundaries. Promote ride sharing among participants if appropriate. Your program's administrative staff can also help to identify local transportation services for participants in need of assistance with getting to and from DSME classes. Look to local businesses, hospitals, or faith-based institutions for assistance with arranging transportation for participants through reduced bus or subway fares or a van service. Encouraging participants to bring family or friends may also alleviate transportation issues, as well as provide social support.

Moving Forward

After a careful planning process that included conducting a community needs assessment, reaching out to stakeholders, creating an advisory board, determining the structure and scope of the program, recruiting staff, developing and refining a curriculum, and finding a suitable location for classes, your DSME program is almost ready to be launched! Look at the activities outlined below to gain insight into how to ensure a successful start.

Action Step 9—Collaborate with the advisory board and instructional staff to review and refine your program evaluation activities and to develop your continuous quality improvement plan.

- Complete the development of your evaluation plan that was begun in Action Step 4, even though you may need to continue to refine certain aspects as the program progresses. As discussed earlier in Action Step 4, review Appendix B: Evaluating Your Activities for the types of questions to ask to guide you in gathering process and outcome data for project evaluation needs. Refer also to "Resources for Developing an Evaluation Plan" in Appendix C: References and Resources.

- Be aware that many diabetes education authorities recommend implementing a *continuous quality improvement process* that entails ongoing program refinement. This process will help ensure that the program remains relevant and responsive to current and future participants. According to standard 9 of the National Standards for DSME, "The DSME entity will measure attainment of patient-defined goals and patient outcomes at regular intervals using appropriate measurement techniques to evaluate the effectiveness of the educational intervention." In addition, according to standard 10, "The DSME entity will measure the effectiveness of the education process and

determine opportunities for improvement using a written *continuous quality improvement* plan that describes and documents a systematic review of the entities' process and outcome data."

- As part of the evaluation process, develop protocols and tools for collecting baseline and post-program data, indicating which staff will collect the data and the time frame for data collection. For example, you may want to try to improve participant *hemoglobin A1c* levels as a method of measuring change in *glycemic control*. To do this, you can ask participants to consult with their primary care providers to collect a baseline *hemoglobin A1c* value. This value can then be assessed again at an appropriate time to measure change resulting from program participation. [Note: If you intend to collect data on physiologic measures (e.g., *hemoglobin A1c*, blood pressure), the results should be reported not only to the participant but also to the participant's primary healthcare provider with his or her written consent.]
- As part of the *continuous quality improvement process*, encourage staff to be creative in developing and tailoring program components both for the target population as a whole and for individual participants. After DSME classes begin, plan to 1) make random, unannounced visits to classes to ensure that the DSME is being delivered according to plan and that program implementation is running smoothly, 2) distribute short surveys to program participants to assess their level of satisfaction with the program and to offer suggestions for improvement because participant feedback is a critical source of information for making program adjustments, and 3) meet regularly with program staff to discuss ideas for sustaining participant interest and to identify any problems that may have arisen.
- Plan to work with the program staff and advisory board to troubleshoot any problems identified during either the evaluation process or the *continuous quality improvement process* and make necessary revisions to program content and delivery in order to maximize program effectiveness.

Action Step 10—Publicize the DSME program throughout the community to raise awareness and register interested members of your target audience.

- Use information obtained from the community assessment and input from your advisory board to develop promotional messages about the DSME program. Develop marketing materials that describe your program and the benefits of participation; be sure to use the audience's native language and to incorporate culturally appropriate symbols and key messages. Post flyers in stores and community gathering places (e.g., faith-based institutions, schools, community centers, ethnic centers, senior centers, supermarkets, libraries, healthcare centers, fitness centers, pharmacies), targeting those areas your intended audience most frequents. Include a registration form in your promotional material, which can be filled out and returned by mail, e-mail, or fax.
- Engage local faith-based leaders, tribal leaders, *community health workers*, and other respected community figures to help with program promotion among members of the community.
- Involve healthcare providers. Ask physicians and other health professionals to refer adult patients with *type 2 diabetes* to your DSME program as appropriate. Also, they may be able to donate DSME-related supplies (e.g., body weight scales, blood pressure cuffs, *glucose* meters).

To help spread the word, consider developing "DSME prescription pads" that have a preprinted description of your DSME program and contact information on them. When educating healthcare providers about your community-based DSME program, you can provide them with these handy tear-off sheets for referring adult patients with *type 2 diabetes* to your activities.

- Enlist local media (i.e., television, newspaper, radio, and Internet sources) to help with program promotion. Prepare a press release to be distributed to the media.

For suggestions on how to generate publicity for your DSME program, you can review the *Media Access Guide: A Resource for Community Health Promotion*, published by CDC's Steps Program, at http://www.cdc.gov/steps/resources/pdf/StepsMAG.pdf. Topic sections include instructions, tips, and templates for writing press releases, media advisories, and other media-related materials; methods for monitoring media coverage; and strategies for placing public service announcements (PSAs) and hosting press conferences.

- Set up a Web page or Web site that details information about the DSME program and provides contact information for reaching program staff. Depending on your resources, give visitors the option to register online.
- Consider offering an "open house" or informational class about the DSME program before it begins, which will address questions that potential participants may have, provide them with an overview of the program, and introduce them to staff.

Action Step 11—Organize an orientation session for all program staff.

- Use this orientation session to ensure that the curriculum is well understood, that staff roles and boundaries are clear, and that referral guidelines are in place for program participants needing additional care. Staff members who are not health professionals must know when to refer participant questions to the appropriate health professional, and it is critical that all staff must know when to refer participants to a primary healthcare provider to address medical issues.

Action Step 12—Begin providing DSME classes.

As noted in earlier action steps, your program's scope of services and selected curriculum will determine the content and format of your DSME and, as such, can vary considerably among community-based programs. There are, however, elements that are common to all programs regardless of how they are delivered, some of which are noted below.

- Make sure that you have conducted any initial participant assessments prior to or during one of the first meetings of the class. Follow up with periodic assessments as determined by your curriculum or evaluation plan.
- For each class, document each participant's attendance, the DSME information that was provided, and any participant-specific information obtained during the class, such as physiological measures and participant's stated concerns. To promote collaboration, this education record should be conveyed to the participant's primary healthcare provider with the participant's written consent.
- Coordinate and communicate program activities among instructional staff to help ensure that the curriculum components are being delivered as intended and that the educational needs of participants are being met. Schedule periodic staff meetings to facilitate interaction among both instructional and administrative staff members.
- Monitor attendance at each class and follow up with each participant who has missed a class to determine the reason and whether there are any issues that may need to be addressed.

Failure to maintain participant interest is a major obstacle to long-term success. The number of participants remaining in the program is a good general gauge of the program's relevance and importance to the target population. If you find that a significant number of participants stop attending DSME classes, find out the reasons and make adjustments to the program or its curriculum to address these issues in a timely manner.

Looking Beyond

You and the program's advisory board and administrative and instructional staff have planned and successfully launched a community-based DSME program. Congratulations! But your work does not end here. As your program progresses, what steps should you take to maintain the momentum of your activities? Look at key strategies in the action steps below for suggestions.

Action Step 13—Ensure that instructional staff members receive appropriate and ongoing training in diabetes management and in teaching and counseling skills.

- Arrange training sessions to inform instructors who address clinical aspects of diabetes self-management about changes in therapeutic modalities and medical nutrition therapy. All DSME instructors should remain current in teaching and learning skills, counseling skills, and behavioral interventions, and be able to adapt these skills to meet the needs of their class participants individually and as a group. The American Association of Diabetes Educators offers a host of continuing education opportunities. Go to http://www.diabeteseducator.org/ProfessionalResources/products for information on "webinars," online courses, and educational conferences.
- Consider developing train-the-trainer sessions and packaging your DSME program's materials on planning, promotion, delivery, and follow-up for easy access by incoming instructional staff in subsequent iterations of your program.
- Provide opportunities for instructional staff to improve psychosocial and teaching skills and to share ideas on maintaining participants' interest in the program.

Share the following strategies for maintaining interest and engagement in DSME activities at the community level. Work with participants to come up with additional ideas.

- Encourage participants to share their experiences in order to reduce feelings of isolation and learn from each other.
- Help participants set goals that meet their individual needs.
- Give incentives (e.g., food samples, useful handouts, free *glucose* test strips, door prizes) at each class.
- Incorporate the target population's culture into program components.
- Foster social support by encouraging participants to bring a "buddy" to classes.
- Distribute a periodic newsletter with success stories, a "tip of the month," or positive testimonials from current or past program participants.
- Remind participants about upcoming classes via postcard or telephone call.

Action Step 14—Explore methods for sustaining and disseminating the DSME program.

- Continue engaging community stakeholders throughout the course of the DSME program to foster long-term relationships with these individuals and organizations. Acknowledge and thank businesses and other community partners that donated in-kind resources (e.g., staff time, tangible goods) to the program or participated in program planning. Provide these contributors and other stakeholders with general updates on program successes and consider adding them to the mailing list for the program newsletter.
- Encourage healthcare providers to continue referring patients to the DSME program while encouraging participants to communicate program experiences to their physicians. Most patients value their physician's opinion on health-related matters; therefore, a physician endorsement of your program can increase participant enrollment and retention.
- Work with partners and stakeholders to identify future funding sources for your DSME programmatic activities. If you have established an independent DSME program, consider the benefits of integrating your program with an established healthcare organization to secure additional resources and support.
- Consider working with partners and stakeholders to promote the implementation of similar programs needed within your community and in other interested communities. As part of the dissemination process, share information about your community assessment methods and results, your program's curriculum and related instructional materials, and the lessons learned in establishing your program.
- Consider the benefits of formal recognition of your DSME program by the American Diabetes Association (ADA) or the U.S. Department of Health and Human Services' Indian Health Service (IHS). If interested, you will need to determine whether your program meets the National Standards for DSME, in addition to any other requirements of ADA or IHS.

Sustainability Tip: Formal recognition by ADA or IHS is a prerequisite for Medicare reimbursement and can further improve the sustainability of your program by conferring program credibility and providing free publicity and potential referrals through your program's listing on the accreditation organization's Web site. The ADA application fee is $1,100 and there is no fee for the IHS application (fees subject to change). For eligibility requirements and application information, refer to

- http://professional.diabetes.org/Recognition.aspx (ADA diabetes education recognition program).
- http://www.ihs.gov/MedicalPrograms/Diabetes/index.cfm?module=programsIDERP (IHS diabetes education recognition program).

Appendix A
Determining Your Resource Needs

Use the following lists of personnel, material, and financial resource needs to guide your planning activities for establishing a community-based DSME program for adults with *type 2 diabetes*. Remember, the resources needed by the group you represent will depend on the scope of program activities and the depth of your group's involvement. Available funding will determine what personnel and material resources you are able to secure to supplement your existing resources.

Personnel Resource Needs

The personnel you will need to lead the activities associated with a community-based DSME program may include the following full-time or part-time staff and volunteers:

- Program coordinator to direct program planning and manage the program.
- Administrative staff to provide support to the program coordinator and instructional staff.
- Instructional staff to provide DSME.
- Advisory board composed of committed partners and stakeholders to support the goals of the program.

According to the 2007 National Standards for DSME (available at http://care.diabetesjournals.org/cgi/content/full/30/6/1630),

- "A coordinator will be designated to oversee the planning, implementation, and evaluation of diabetes self-management education. The coordinator will have academic or experiential preparation in chronic disease care and education and in program management" [from standard 4].
- "DSME will be provided by one or more instructors. The instructors will have recent educational and experiential preparation in education and diabetes management or will be a *certified diabetes educator*. The instructor(s) will obtain regular continuing education in the field of diabetes management and education. At least one of the instructors will be a registered nurse, dietitian, or pharmacist" [from standard 5].
- "The DSME entity shall appoint an advisory group to promote quality. This group shall include representatives from the health professions, people with diabetes, the community, and other stakeholders" [from standard 2].

Refer to Table 4 on the next page for a summary of the tasks that various personnel typically perform. An important function is determining who will be responsible for each activity. Some of these tasks may be interchanged between different people or groups when appropriate.

Table 4: Personnel and Their Typical Responsibilities
Program coordinator ■ Oversees the planning, implementation, and evaluation of the DSME program ■ Coordinates day-to-day programmatic activity ■ Provides ongoing program management ■ Assesses existing DSME resources and unmet needs within the community ■ Conducts outreach to various stakeholders ■ Helps to assemble program advisory board ■ Seeks necessary program resources ■ Assists the advisory board in recruiting program staff ■ Is accountable for quality DSME and *continuous quality improvement* ■ Reports at least annually to the advisory board
Administrative staff ■ Provides logistical support for advisory board meetings ■ Helps to develop program content and program promotional materials ■ Develops and maintains Web page or site, including related e-mail communications ■ Collects supplies for DSME classes ■ Makes reminder phone calls to participants ■ Identifies local transportation services for participants in need of assistance with getting to and from DSME classes
Instructional staff ■ Works with the program coordinator and advisory board to develop program curriculum ■ Identifies any additional resources needed to implement the curriculum ■ Collaborates to deliver DSME ■ Trains and oversees *community health workers* who may provide services to support the curriculum ■ Conducts individualized participant assessments ■ Engages in collaborative goal-setting processes with participants ■ Evaluates and documents participant progress ■ Helps participants with problem solving and accessing resources ■ Assists with participant recruitment ■ Contributes to *continuous quality improvement* and a regular review process ■ Helps to ensure that DSME is culturally appropriate, relevant, and responsive to the community
Advisory board ■ Ensures that DSME is culturally appropriate, relevant, and responsive to the community ■ Helps to identify program resources, set goals, recruit staff, review potential program activities and materials, and develop an evaluation plan ■ Assists with curriculum development and program promotion ■ Engages in *continuous quality improvement* and a regular review process ■ Recommends program improvements

Material Resource Needs

You will need a variety of material resources throughout your DSME program's planning and implementation process. As you move forward with your activities, keep in mind ways you might help to acquire or develop some of these materials, using existing resources whenever possible. Basic material resource needs are detailed in the following list:

- Office space for staff
- Office equipment for conducting outreach and research (e.g., computers, printers, fax machine, copier, telephones)

- Meeting space, audiovisual equipment, and materials for advisory board and DSME instructors
- Meeting space and audiovisual equipment for program classes (may need a private area for individualized participant assessments, a kitchen for cooking demonstrations, and an open area for exercise activities)
- Hard-copy educational materials for participants
- Instructional materials (e.g., food models, cooking equipment)
- Equipment for on-site assessments of physiological measures (e.g., body weight scales, blood pressure cuffs, *glucose* meters)
- *Glucose* meters for participants to measure *blood glucose levels* at home
- Hard-copy materials for DSME instructors (e.g., sign-in sheets, attendance records)
- Hard-copy and electronic promotional materials (e.g., flyers, registration forms)
- Items serving as participant incentives (e.g., pedometers, water bottles)
- Materials for interviews, surveys, and other modes of evaluation

Financial Resource Needs

General, administrative, and personnel costs are the primary expenses for which you will need funds to establish a community-based DSME program. Be sure to budget for all components of your activities, such as the following items:

- Personnel salaries and benefits
- Office overhead
- Office and audiovisual equipment and materials
- Purchase or development and printing of materials for program promotion, class instruction, and DSME instructor training
- Medical equipment for classes
- Instructional staff training
- Program evaluation
- Items serving as participant incentives
- Telephone and Internet access for program use
- Web page or Web site development and maintenance
- Application fee for formal recognition of your DSME program by the American Diabetes Association or the Indian Health Service (discussed in Action Step 14) if desired
- Miscellaneous items such as refreshments during meetings and classes

Appendix B
Evaluating Your Activities

Evaluation is a key component of your program and should be conducted before, during, and after program implementation. You can use evaluation data to plan community-specific programs, to assess the effectiveness of the implemented program in achieving its objectives, and to modify current activities where necessary for program improvement.

Evaluation data can also be used to keep stakeholders updated on the DSME program's progress; show participants the benefits of their active involvement in the program; describe the program when applying for or securing additional support through partner funding, grant opportunities, and other methods; and provide other community groups with information as they consider developing a DSME program of their own.

Although specific guidance on conducting an evaluation is outside the scope of this Action Guide, you will find suggested questions below to guide you in collecting data for process and outcome evaluations; the specific questions you ultimately develop will depend on the objectives you have set and will be unique to your program. Potential sources of data are also listed to help you answer these questions. In addition, refer to "Resources for Developing an Evaluation Plan" in Appendix C: References and Resources, which includes a Web site link to the American Association of Diabetes Educators' AADE7™ Self-Care Behaviors framework that identifies seven diabetes self-care behaviors and outlines ways to measure them as part of DSME program evaluation.

Questions to Guide Data Collection

Process Evaluation

To assess whether the program was implemented as intended, you will need to collect data on the quality and effectiveness of your activities. Questions helpful in this assessment include the following:

- Is the advisory board representative of appropriate community stakeholders?
- Does the program have a realistic mission statement and goals?
- Do the advisory board and program staff meet regularly?
- Do instructional staff members receive appropriate ongoing training and supervision?
- How was the program publicized? Approximately how many people were reached via promotion? Which participant recruitment strategies worked best and which were least effective?
- To what extent are program participants representative of the target audience?
- Has the level of participation decreased over time? What reasons were cited? Were adjustments made to address these reasons?
- Are all program components delivered as intended? If not, why not (e.g., additional resources are needed to fully implement the program)?
- Are some program components delivered better by certain instructional staff members than by others? What teaching lessons can be shared?
- Do instructional staff members address participant needs and concerns?
- Was a *continuous quality improvement* process instituted and documented? Has it identified any ways to make the program more efficient and effective?
- What are the program costs, from a participant and from a delivery perspective?

Outcome Evaluation

To assess the program's influence and make recommendations for future program direction and improvement, you will need to collect data on the expected outcomes of using this community-based DSME approach to improve participants' *glycemic control.* Although long-term health outcomes—such as increased quality-adjusted life years—are hard to attribute to any one program, asking the following questions may help you determine whether this approach was successful:

- To what extent have participants achieved their self-identified behavioral goals (e.g., quitting tobacco use, eliminating candy consumption, taking a 10-minute walk every day, taking specified steps to reduce stress, practicing proper oral health)?
- To what extent have participants improved targeted physiologic measures such as weight, blood pressure, cholesterol, *blood glucose level*, and *hemoglobin A1c*?
- How many and what proportion of participants have sustained behavioral or physiologic improvements for one month or longer after the program ended? For six months or longer?
- How do participants rate the improvement in their overall quality of life as a result of program participation?
- To what extent have participants improved their linkage with clinical healthcare systems (e.g., making and keeping physician appointments)?
- Have any changes in the broader community environment come about as a result of the DSME program (e.g., policy changes to encourage more grocery stores to open in the community)?

Potential Sources of Data

There are many ways to collect data on process and outcome evaluation indicators. The data you use should address and answer the questions outlined in your evaluation plan. You may need to develop data sources, or you may adapt data sources already in existence. The following partial list of data sources may help you get started:

- Advisory board meeting minutes
- *Continuous quality improvement* data
- Participant registration and attendance records
- Quality-of-life, knowledge, and food-frequency assessment tools (available through the American Diabetes Association, the American Association of Diabetes Educators, the National Diabetes Education Program, and other sources)
- Self-reports of behavioral changes, smoking status, and 24-hour food recall
- Participant satisfaction surveys
- Results from physiologic measures—such as weight, blood pressure, and *blood glucose level*—taken on-site at DSME classes
- Results from tests administered by healthcare providers as part of ongoing care (either from providers with participants' written consent or based on participants' self-reports)
- Participant feedback on missed days from work or other activities due to *diabetes-related complications*
- Interviews, questionnaires, and focus groups with participants

Appendix C
References and Resources

Evidence-Based Reviews of DSME in Community Gathering Places

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Appendix D
Glossary of Selected Terms

This glossary defines several key terms and concepts used within the guide. Throughout the text, words that are listed in this appendix have been *italicized* whenever they are used to alert you that a definition is provided.

Blood glucose level—The amount of *glucose* in the blood at a given point in time; also known as blood sugar level, serum glucose level, and plasma glucose concentration.

Community health worker (promotor/promotora de salud)—A trained community member who works in various settings and helps to connect people to health resources, to provide social support and education, and to otherwise promote health among groups that have traditionally lacked access to adequate healthcare; also known as a community health advocate, lay health educator, peer health educator, and community health outreach worker.

Continuous quality improvement—A process through which programs are made more efficient or effective; involves identification of problems and opportunities for change and implementation of program improvements.

Cooperative extension service—A noncredit educational network with state and local offices funded by the U.S. Department of Agriculture Cooperative State Research, Education, and Extension Service that may run community-based DSME programs.

Diabetes educator—A health professional, such as a registered nurse, registered dietitian, pharmacist, physician, physician's assistant, clinical psychologist, exercise physiologist, occupational therapist, physical therapist, optometrist, podiatrist, or social worker, who specializes in providing care and education to people with diabetes.

> **Certified:** Diabetes educators may be certified by the National Certification Board for Diabetes Educators. The CDE credential indicates that individuals have met standardized academic and experiential criteria. The certification examination is designed and intended solely for licensed, certified, or registered health care professionals who have defined roles as diabetes educators, not for those who may perform some diabetes-related functions as part of or in the course of other usual and customary duties. [Note: Another credential that indicates specialized training beyond basic preparation is Board Certification in Advanced Diabetes Management (BC-ADM), which is available to master's prepared nurses, dieticians, and pharmacists and conferred by the American Nurses Credentialing Center.] For information on both the CDE and the BC-ADM certifications, refer to http://www.diabeteseducator.org/ProfessionalResources/Certification.

Diabetes-related complications—

> **Acute:** Short-term, sudden-onset conditions such as hypoglycemia (abnormally *low blood glucose level*) and hyperglycemia (abnormally *high blood glucose level*).
>
> **Chronic:** Long-term conditions such as heart disease, blindness, nerve damage, or kidney damage that develop over time, particularly if diabetes has not been well controlled.

Glucose—A type of sugar; the primary energy source for the body.

Glycemic control—Control of *blood glucose level.*

Glycohemoglobin (GHb)—See *Hemoglobin A1c.*

Hemoglobin A1c (HbA1c)—A form of hemoglobin—a molecule found in red blood cells—the value of which is used to monitor average *blood glucose levels* over time; also called *glycohemoglobin,* glycated hemoglobin, glycosylated hemoglobin, or A1c.

Type 2 diabetes—A disease in which the body is unable to produce sufficient amounts of or respond to insulin, a hormone required by the body to convert *glucose* to energy.

Partnership for Prevention® would like to hear from you about this Action Guide. Please help us improve this tool by filling out this form and faxing it back to us at (202) 833-0113, or by providing your feedback online at http://www.prevent.org/actionguides.

User Feedback Form

1. Please rate how much you agree with the following statements:

a)	Information within this Action Guide is easy to understand	❑ Yes	❑ Somewhat	❑ No
b)	Information within this Action Guide is easy to find	❑ Yes	❑ Somewhat	❑ No
c)	Boxes marked with hurdler and light bulb icons provide practical and useful additional information	❑ Yes	❑ Somewhat	❑ No
d)	I will use this Action Guide to help improve my community's health	❑ Yes	❑ Maybe	❑ No
e)	I would recommend this Action Guide to others	❑ Yes	❑ Maybe	❑ No

Comments (continue on back if necessary):

_____

_____

_____

2. Is there any other information that you would like to have seen included in this Action Guide to assist with implementation? ❑ Yes (please describe below; continue on back if necessary) ❑ No

_____

_____

_____

3. Which best describes your work setting? [❑ Nonprofit ❑ For profit]

❑ Federal/State/Local Government Agency ❑ Healthcare Setting ❑ Community Organization

❑ Academic ❑ Other (please specify) _____

4. What is your position? _____

5. How did you hear about this Action Guide? (check all that apply)

❑ Word of mouth ❑ Newsletter ❑ Web site ❑ Conference ❑ Direct Mailing ❑ Other

(please specify for all checked items) _____

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6. May we contact you for additional feedback? If yes, please provide information below.

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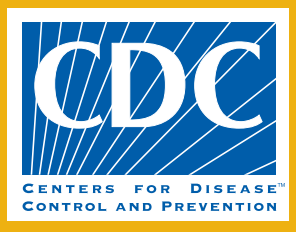
CDC
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Control and Prevention

Comparing ADA, AADE, and Stanford University DSMP

ADA DSME Curriculum Content Areas	AADE7™ Self-Care Behaviors	Stanford University DSMP
Incorporate *nutritional management* into lifestyle	Healthy Eating	Healthy Eating Session 1 Activity 5 Formula for Healthy Eating Plan Session 2 Activity 2 Planning Low Fat Meals Session 3 Activity 3 Reading Nutrition Labels Session 4 Activity 3
Incorporate *physical activity* into lifestyle	Being Active	Introduction to Physical Activity and Exercise Session 3 Activity 4 Endurance Session 4 Activity 4
Monitoring blood glucose and other parameters and interpreting and using the results for self-management decision making	Monitoring	Monitoring Session 1 Activity 4
Using *medication(s)* safely and for maximum therapeutic effectiveness	Taking Medication	Medication Usage Session 5 Activity 5
Describe the *diabetes disease process* and *treatment options* Developing personal strategies to promote health and behavior change.	Problem Solving	What is Diabetes Session1 Activity 3 Making An Action Plan Session 1-6 Feed back and Problem-Solving Session 2-6 Communication Skills Session 5 Activity 4 Working with Your Health Care Professional and Health Care System Session 6 Activity 4
Developing personal strategies to address psychological issues and concerns	Healthy Coping	Dealing with Stress Session 3 Activity 5 Muscle Relaxation Session 3 Activity 6 Dealing with Difficult Emotions Session 4 Activity 2 Guided Imagery Session 4 Activity 5 Depression Management Session 5 Activity 2 Positive Thinking Session 5 Activity 3
Preventing, detecting, and treating *acute complications*. Prevention detecting, and treating *chronic complications*.	Reducing Risks	Preventing Low Blood Sugar: Hypoglycemia Session 2 Activity 3 Preventing or Delaying Complication Session 3 Activity 3 Strategies for Sick Days Session 6 Activity 2 Foot Care Session 6 Activity 3

ADA = Standard 6 of National Standards for DSME, Clinical Practice Recommendations 2009, Diabetes Care; DSME should be provided to people with diabetes according to national standards when their diabetes is diagnosed as needed thereafter. Self-management behavior change is the key outcome of DSME and should be measured and monitored as part of care.

AADE = Standard 2 of Standards for Outcomes Measures for DSME; American Association of Diabetes Educators, AADE Outcome Standards for Diabetes Education specify self-management behavior as the key outcome. Knowledge is an outcome to the degree that it is actionable (i.e., knowledge that can be translated into self-management behavior). In turn, effective self-management is one (but not the only) contributor to longer-term, higher-order outcomes such as clinical status (e.g., control of glycemia, blood pressure, and cholesterol), health status (e.g., avoidance of complications), and subjective quality of life. Thus, patient self-management behaviors are at the core of the outcomes evaluation.

Stanford University DSME = A workshop designed through Kate Lorig at Stanford University using four self efficacy-enhancing strategies with small groups of persons with diabetes and/or support individuals. Four strategies include: skills mastery through making an action plan, sharing and feedback, modeling, reinterpretation of symptoms and persuasion.

Comparing DSME, Stanford University DSMP, and Stanford University Chronic Disease Self Management Program

DSME/T Diabetes Self Management Education or Training	**Stanford University DSMP,**	Stanford University CDSMP
Specific to diabetes	**Address all basic diabetes conditions**	Addresses all chronic conditions
Participants all have diabetes	**Participants all have diabetes**	Participants have a variety of chronic conditions
Focuses on knowledge, skills, and problem solving	**Focuses on problem solving/action planning specific to diabetes self-care behaviors**	Focuses on problem solving/action planning
Is content-oriented	**Is process-oriented**	Is process-oriented
Professional educators	**Lay person who has chronic condition***	Lay person who has chronic condition*
Focuses on medical management and self-management of disease	**Focuses on empowerment and goal setting**	Focuses on empowerment and goal setting
10 hours (1-2 hours individual counseling; 8-9 hours in group)	**2.5 hours per week for 6 weeks in group**	2.5 hours per week for 6 weeks in group
Standard content for ADA recognized or AADE certified DSME programs to implement national standards	**Scripted content**	Scripted content

*Under the direction of the Central Colorado Area Health Education Centers or Colorado Older Adult Wellness, a statewide infrastructure has been set up using professional and semi-professional educators. As the Stanford University programs continue to develop and expand, lay leaders are being trained and the program is becoming more embedded within sponsoring communities. In the event that professionals are trained to deliver the program, these individual perform as if they are lay leaders in the class.

FACT SHEET

Federally Qualified Health Center

The Federally Qualified Health Center (FQHC) benefit under Medicare was added effective October 1, 1991 when Section 1861(aa) of the Social Security Act was amended by Section 4161 of the Omnibus Budget Reconciliation Act of 1990. FQHCs are "safety net" providers such as community health centers, public housing centers, outpatient health programs funded by the Indian Health Service, and programs serving migrants and the homeless. The main purpose of the FQHC Program is to enhance the provision of primary care services in underserved urban and rural communities. Medicare pays FQHCs an all-inclusive per visit amount based on reasonable costs with the exception of all therapeutic services provided by clinical social workers and clinical psychologists, which are subject to the outpatient psychiatric services limitation. This limit does not apply to diagnostic services. Medicare also pays Rural Health Clinics (RHC) on the same basis.

Federally Qualified Health Center Designation

An entity may qualify as an FQHC if it is:

- Receiving a grant under Section 330 of the Public Health Service (PHS) Act;
- Receiving funding from such grant under a contract with the recipient of a grant and meets the requirements to receive a grant under Section 330 of the PHS Act;
- Determined by the Secretary of the Department of Health and Human Services to meet the requirements for receiving such a grant (look-alike) based on the recommendation of the Health Resources and Services Administration; or
- An outpatient health program or facility operated by a tribe or tribal organization under the Indian Self-Determination Act or by an urban Indian organization receiving funds under Title V of the Indian Health Care Improvement Act as of October 1, 1991.

Covered Federally Qualified Health Center Services

Payments are made directly to the FQHC for covered services furnished to Medicare patients. Services are covered when furnished to a patient at the Center, the patient's place of residence, or elsewhere (e.g., at the scene of an accident). A FQHC generally provides the following services:

- Physicians' services;
- Services and supplies incident to the services of physicians;
- Services of nurse practitioners, physician assistants, certified nurse midwives, clinical psychologists, and clinical social workers;
- Services and supplies incident to the services of nurse practitioners, physician assistants, certified nurse midwives, clinical psychologists, and clinical social workers;

- Visiting nurse services to the homebound in an area where the Centers for Medicare & Medicaid Services (CMS) has certified that there exists a shortage of home health agencies;
- Otherwise covered drugs that are furnished by, and incident to, services of physicians and nonphysician practitioners of the FQHC; and
- Diabetes self-management training and medical nutrition therapy for beneficiaries with diabetes or renal disease (effective for services furnished on or after January 1, 2006).

FQHCs also provide preventive primary health services when furnished by or under the direct supervision of a physician, nurse practitioner, physician assistant, certified nurse midwife, clinical psychologist, or clinical social worker. The following preventive primary health services are covered when provided by FQHCs to Medicare patients:

- Medical social services;
- Nutritional assessment and referral;
- Preventive health education;
- Children's eye and ear examinations;
- Well child care, including periodic screening;
- Immunizations, including tetanus-diphtheria booster and influenza vaccine;
- Voluntary family planning services;
- Taking patient history;
- Blood pressure measurement;
- Weight measurement;
- Physical examination targeted to risk;
- Visual acuity screening;
- Hearing screening;
- Cholesterol screening;
- Stool testing for occult blood;
- Dipstick urinalysis; and
- Risk assessment and initial counseling regarding risks.

For women only:

- Prenatal and post-partum care;
- Prenatal services;
- Clinical breast examination;
- Referral for mammography; and
- Thyroid function test.

Federally Qualified Health Center Preventive Primary Services that are NOT Covered

FQHC preventive primacy services that are ***not*** covered include:

- Group or mass information programs, health education classes, or group education activities including media productions and publications; and
- Eyeglasses, hearing aids, and preventive dental services.

Items or services that are covered under Part B, but which are ***not*** FQHC services include:

- Certain laboratory services;
- Durable medical equipment, whether rented or sold, including crutches, hospital beds, and wheelchairs used in the patient's place of residence;
- Ambulance services;
- The technical component of diagnostic tests such as x-rays and electrocardiograms;
- The technical component of the following preventive services:
  - Screening pap smears and screening pelvic examinations
  - Prostate cancer screening
  - Colorectal cancer screening tests
  - Screening mammography
  - Bone mass measurements
  - Glaucoma screening
- Prosthetic devices that replace all or part of an internal body organ including colostomy bags, supplies directly related to colostomy care, and the replacement of such devices; and
- Leg, arm, back, and neck braces and artificial legs, arms, and eyes including replacements (if required because of a change in the patient's physical condition).

Federally Qualified Health Center Payments

Under Original Medicare, each Center is paid an all-inclusive per visit rate based on its reasonable costs as reported in the FQHC cost report, with the exception of therapeutic services provided by clinical social workers and clinical psychologists which are subject to the outpatient psychiatric services limitation. This limit does not apply to diagnostic services.

The payment is calculated, in general, by dividing the Center's total allowable cost by the total number of total visits for FQHC services. FQHC payment methodology includes one urban and one rural payment limit. For services furnished on or after January 1 of each year, the payment limit is increased by the Medicare Economic Index applicable to primary care physician services. A FQHC is designated as an urban or rural entity based on definitions in Section 1886(d)(2)(D) of the Social Security Act. If a FQHC is not located within a Metropolitan Statistical Area or New England County Metropolitan Area, the rural limit applies. Rural FQHCs cannot be reclassified into an urban area for FQHC payment limit purposes.

Freestanding FQHCs must complete Form CMS-222-92, Independent Rural Health Clinic and Freestanding Federally Qualified Health Center Cost Report, in order to identify all incurred costs applicable to furnishing covered Center services including FQHC direct costs, any shared costs applicable to the FQHC, and the FQHC's appropriate share of the parent provider's overhead costs. Form CMS-222-92 can be found at **www.cms.hhs.gov/CMSForms/CMSForms/list.asp#TopOfPage** on the CMS website. Provider-based FQHCs must complete Worksheet M of Form CMS-2552-96, Hospital Cost Report, in order to identify all incurred costs applicable to furnishing covered Center services. At the beginning of the rate year, the Fiscal Intermediary calculates an interim rate based on estimated allowable costs and visits from the Center if it is new to the FQHC Program or actual costs and visits from the previous cost reporting period for existing FQHCs. The Center's interim rate is reconciled to actual reasonable costs at the end of the cost reporting period. Form CMS-2552-96 can be found in the ***Provider Reimbursement Manual***—Part 2 (Pub. 15-2), Chapter 36, which can be found at **www.cms.hhs.gov/Manuals/PBM/list.asp#TopOfPage** on the CMS website.

The cost of the influenza and pneumococcal vaccines and their administration are separately reimbursed at cost settlement. There is a separate worksheet on the Independent Rural Health Clinic and Freestanding Federally Qualified Health Center Cost Report to report the cost of these vaccines and their administration. These costs should never be reported on the claim when billing for FQHC services. There is no coinsurance or deductible for these services; therefore, when one of these vaccines is administered, the charges for the influenza and pneumococcal vaccines and their administration are never included with the visit charges when calculating coinsurance or deductible for the visit. When a physician, physician assistant, nurse practitioner, or certified nurse midwife sees a beneficiary for the sole purpose of administering an influenza and pneumococcal vaccination, he or she may not bill for an office visit. However, the cost can still be included on the cost report.

The cost of the Hepatitis B vaccine and its administration are covered under the all-inclusive rate. If other services, which constitute a qualifying FQHC visit, are provided at the same time as the Hepatitis B vaccination, the charges for the vaccine and its administration can be included in the charges for the visit both when billing and calculating the coinsurance and/or deductible. When a physician, physician assistant, nurse practitioner, or certified nurse midwife sees a beneficiary for the sole purpose of administering a Hepatitis B vaccination, he or she may not bill for an office visit. However, the

cost can still be included on the cost report. The charges for the Hepatitis B vaccine can be included on a claim for the beneficiary's subsequent visit and when calculating the coinsurance and/or deductible.

Medicare Prescription Drug, Improvement, and Modernization Act of 2003

Section 410 of the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 states that professional services furnished on or after January 1, 2005 by physicians, physician assistants, nurse practitioners, and clinical psychologists who are affiliated with FQHCs are excluded from the Skilled Nursing Facility Prospective Payment System, in the same manner as such services would be excluded if provided by individuals not affiliated with FQHCs.

HELPFUL RURAL HEALTH WEBSITES

CENTERS FOR MEDICARE & MEDICAID SERVICES' WEBSITES

CMS Contact Information Directory
www.cms.hhs.gov/apps/contacts/

CMS Forms
www.cms.hhs.gov/CMSForms/CMSForms/list.asp#TopOfPage

CMS Mailing Lists
www.cms.hhs.gov/apps/mailinglists/

Critical Access Hospital Provider Center
www.cms.hhs.gov/center/cah.asp

Federally Qualified Health Centers Provider Center
www.cms.hhs.gov/center/fqhc.asp

Hospital Provider Center
www.cms.hhs.gov/center/hospital.asp

HPSA/PSA (Physician Bonuses)
www.cms.hhs.gov/HPSAPSAPhysicianBonuses/

Internet-Only Manuals
www.cms.hhs.gov/Manuals/IOM/list.asp#TopOfPage

MLN Matters Articles
www.cms.hhs.gov/MLNMattersArticles/

Medicare Learning Network
www.cms.hhs.gov/MLNGenInfo/

Medicare Modernization Update
www.cms.hhs.gov/MMAUpdate/

Physician's Resource Partner Center
www.cms.hhs.gov/center/physician.asp

Regulations & Guidance
www.cms.hhs.gov/home/regsguidance.asp

Rural Health Clinic Provider Center
www.cms.hhs.gov/center/rural.asp

OTHER ORGANIZATIONS' WEBSITES

Administration on Aging
www.aoa.gov

American Hospital Association Section for Small or Rural Hospitals
www.aha.org/aha/key_issues/rural/index.html

Health Resources and Services Administration
www.hrsa.gov

National Association of Community Health Centers
www.nachc.org

National Association of Rural Health Clinics
www.narhc.org

National Rural Health Association
www.nrharural.org

Rural Assistance Center
www.raconline.org

February 2006 ICN: 006397

Summary of Participant Demographics from Stanford University DSMP Workshops

Demographics of Stanford University DSMP in English, Colorado-2009			
# of classes per region		Chronic Conditions	
Region 1	2	Diabetes	15
Region 2		Heart Disease	5
Region 3		Hypertension	11
Age		Lung Disease (asthma, emphysema, bronchitis)	4
71+	9	Arthritis/Rheumatic disease	6
61-70	11	Cancer	
51-60	2	Osteoporosis	4
41-50		Other	2
20-40		No chronic condition attend as support person	4
Gender		Current marital status	
Male	9	Married	10
Female	13	Divorced	7
Race/Ethnicity		Widowed	2
American Indian or Alaska Native	1	Separated	
Asian or Asian American		Never married	2
Black or African American		Partnered (living with someone)	
Hawaiian Native or Pacific Islander		Type of health insurance	
Hispanic/Latino	1	None	
White/Caucasian	20	Medicare	13
Other -Specify		Medicaid	3
Highest level of education completed		Private Insurance	5
Less than high school		V.A. Benefits Insurance	
Some high school		Other-specify	8
High school graduate	5	Kaiser	3
Some college or vocational school	9	Kaiser Senior Advantage	2
College graduate	7	Blue Cross Blue Shield Federal	1
Graduate school	1	Cigna	1
Speak English at home	22	COBRA	2

Health Matters 2009

COLORADO BUSINESS GROUP ON HEALTH

A State of Quality—Leading the way in health care

Colorado Health Plan & Hospital Quality Report

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COLORADO BUSINESS GROUP ON HEALTH

Executive Director
Donna Marshall, MBA

Research
Marilyn R. Jordan
Mariela Trujillo

Publisher
The Colorado Business Group on Health
699 Bryant Street, Suite 200
Denver, CO 80204-4142
http://www.coloradoHEALTHonline.org/

Art Director
Nan Lund

Photos
DDS Maps
Nan Lund
National Geographic

We gratefully acknowledge assistance in the creation of this report:

Aetna Health Inc.:
Richard Slaton

CIGNA HealthCare of Colorado:
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The information contained in this publication is meant to increase reader awareness of quality in health care. Its contents should not be construed as medical advice or instruction on individual health matters, which should be obtained directly from a health professional.

For more information, contact
Colorado Business Group on Health
at 303-922-0939
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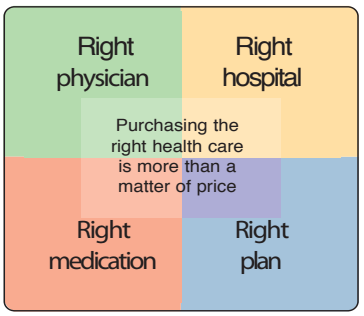
Good-quality health care.

Welcome to our 12th annual edition of *Health Matters Health Plan and Hospital Quality Report*



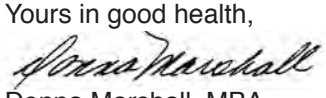
Health reform is on everyone's mind and a "hot topic" as we go to press this year. Health care is big business: experts forecast national spending on healthcare to be over $2.6 trillion this year. Many people would like to reduce the unrelenting (and unsustainable) trend in price increases. Of course, the big debate is "How"?

One national survey, published in 2008 asked respondents what they wanted from their health insurance. Eighty percent selected the following items. See if you agree with this list: (1) Coverage for all uninsured children; (2) Protection against financial ruin due to major illness or accident; (3) Ability to get coverage regardless of a pre-existing condition; (4) Coverage that continues even when people are laid off, change jobs, or start their own businesses; (5) Premiums, deductibles, and out-of-pocket expenses that are affordable relative to family income; and (6) The ability of people to keep their current health insurance if they choose. Many health reform proposals that have been recently reviewed by the Congress feature ideas about how to offer Americans what they want.

In addition, the proposals agree on features that improve the quality of health care. Under the broad title "safety and transparency", members of Congress have aligned to support electronic medical records; coordinate the care between specialists, primary care doctors, and hospitals; and to provide more information to consumers. Information on cost and quality will be used by consumers to make better choices, and by those in the health care industry to compare their results to "the best results". Will better quality reduce costs? Many experts see opportunities to save money through improved quality, but the final word is that when we are sick, we all want high quality healthcare.

How do *you* define quality? If you have difficulty, you are not alone. Avoiding harm, getting treatments that work, accessing services timely are ways to define quality. Read this publication and see how consumers like you are rating their health plans and doctors; evaluate whether your favorite Colorado hospital is working on safety; discover if your doctor is nationally recognized, and whether your health plan is better than others in the state or in the nation. Be an informed consumer!

Yours in good health,



Donna Marshall, MBA
Executive Director

What is quality health care?

Quality health care is more than just having a health plan, a certain provider or a particular treatment. It's more than a matter of cost. Quality means getting what benefits you most—balancing risk, cost, and quality of life.

It's effective—the right kind of care for your health condition based on up-to-date scientific knowledge about what works best.

It's efficient—using precious resources wisely, not wasting time and effort.

It's safe—delivered without error and avoiding harmful results.

It's timely—getting the most effective care without delays.

It's focused on the individual—provided in a manner respecting a person's individual characteristics, needs and concerns.

It's equitable—delivered without discrimination based on income, ethnicity, culture, or beliefs.

Important aspects of quality health care are measured in different ways. Health Matters provides you with the information necessary to make cost-effective decisions regarding your health care.

How to Choose Your Hospital

Leapfrog Hospital Survey

The Leapfrog Hospital Survey has been a method for improving hospital quality, safety, and efficiency since its inception in 2001. The results from the survey inform consumers of the kind of care they can expect to receive by determining which hospitals are meeting high quality, cost effective standards, comparing area hospitals to local and national performance, and providing incentives for quality improvements. The Leapfrog Group initially identified four quality and safety practices (leaps) as the focus for hospital recognition and reward. They are Computer Physician Order Entry (CPOE), ICU Physician Staffing (IPS), Evidence-Based Hospital Referral (EBHR), and Safe Practices Score (SPS).

This year, 30 out of 34 urban Colorado hospitals took part in the annual Leapfrog hospital survey. The mission of the Leapfrog Group is to activate leaps forward in the safety, quality and affordability of health care by making the American public aware of a small number of compelling and easily understood advances in patient safety. Their mission is to do so by specifying a simple set of purchasing principles designed to promote these safety advances, as well as overall customer value.

Research conducted by John D. Birkmeyer, MD indicates that these first three leaps could save up to 58,300 lives per year, and prevent 522,000 medication errors, if implemented by all non-rural hospitals in the United States. ☐

"Consumers who choose hospitals identified by Leapfrog as having begun to implement patient safety practices will likely find hospitals with better process quality and lower mortality rates."

Joint Commission on Accreditation of Healthcare Organizations, June 2008

Leap 1: Computer Physician Order Entry (CPOE)

An Rx for Rx

Choose the hospital with electronic prescribing systems that requires its staff to use computers to order medications, tests and procedures.

Leap 2: Staffing Intensive Care Units (ICUs)

Sick People need Special Care

Choose the hospital with an Intensive Care Unit (ICU) that is staffed by physicians experienced in critical care medicine, called 'intensivists.'

Leap 3: Evidence-Based Hospital Referral (EBHR)

The Best of the Best

Choose the hospital with low mortality rates or high rates of adherence to clinical practices which means making sure that patients with high-risk conditions and procedures are treated at hospitals with characteristics shown to be associated with better results or extensive experience.

Abdominal Aortic Aneurysm (AAA) Repair
Procedure that fixes an abnormal enlargement of the abdominal portion of the aorta, which is the major artery from the heart

Aortic Valve Replacement (AVR)
Open-heart surgery to replace the heart valve if it thickens so much that it causes an abnormal narrowing and stiffening of the valve

Esophagectomy
Surgical removal of all or part of the esophagus

High Risk Deliveries & Neonatal Intensive Care Units (NICU)
High risk delivery is when mother and/or fetus are at higher-than-normal risk. Low-birth weight, premature, or seriously ill newborns may require specially designed equipment.

Pancreatic Resection
Surgical removal of all or part of the pancreas—The pancreas is an organ that lies deep in the abdomen and produces important hormones such as insulin. If cancer develops in the pancreas, removing the organ may be life saving.

Leap 4: NQF Safe Practices Score

Leapfrog Quality Index

Choose a hospital that has a high Leapfrog Safe Practices Score. This fourth leap assessed a hospital's progress on the 17 NQF safe practices among the 34 National Quality Forum (NQF) safe practices in order to focus on those that have the strongest evidence, are auditable, and are not measured in another way in a different section of the Survey.

Colorado Urban Hospital Ratings

Colorado Urban Hospitals	Leap 1 *An Rx for Rx.*	Leap 2 *Sick people need special care.*	Leap 3 *Practice makes perfect.*					Leap 4 *A culture based on safety.*
	Computerized Physician Order Entry	Intensive Care Unit Physician Staffing	Abdominal Aortic Aneurysm Repair	Aortic Valve Replacement	Esophagectomy	High Risk Deliveries NICU	Pancreatic Resection†	LEAPFROG Safe Practices
Boulder Community Foothills Hospital Boulder	◔	◔	NA	NA	NA	◔	NA	◑
Boulder Community Hospital Boulder	◔	◔	◑	◕	NA	NA	NA	◔
Centura Health Avista Adventist Hospital Louisville	◔	◔	NA	NA	◔	◑	◔	●
Centura Health Littleton Adventist Hospital Littleton	◔	◔	NA	NA	NA	◑	NA	◑
Centura Health Parker Adventist Hospital Parker	◔	◔	NA	NA	NA	NA	NA	◑
Centura Health Penrose-St. Francis Colorado Springs	◔	◔	◑	◕	●	NA	◕	◕
Centura Health Porter Adventist Hospital Denver	◔	◑	●	◕	NA	NA	NA	◕
Centura Health St. Anthony Central Hospital Denver	◔	●	◔	◕	◕	◔	◑	◕
Centura Health St. Anthony North Hospital Westminster	◔	◔	◑	◑	◔	◔	◑	◔
Centura Health St. Mary Corwin Med. Center Pueblo	◔	●	●	NA	NA	NA	NA	●
Childrens' Hospital Aurora	●	●	NA	NA	NA	NA	NA	◑
Denver Health Medical Center Denver	●	●	◕	NA	◔	◑	◑	◕
Exempla Good Samaritan Medical Center Lafayette	◕	◔	NA	NA	NA	◑	◑	◔
Exempla Lutheran Medical Center Wheat Ridge	◔	●	●	◔	◕	◔	◑	◔
Exempla St. Joseph Hospital Denver	◔	◑	●	◕	◕	◑	●	◔
Longmont United Hospital Longmont	◔	◔	◔	◔	◑	◔	NA	◕
McKee Medical Center Loveland	◔	◔	NA	NA	◕	NA	NA	◔
Medical Center of Aurora Aurora	◔	●	●	◕	◔	NA	◑	●
Memorial Health System Colorado Springs	◔	◔	◕	◕	●	◕	◕	◔
North Colorado Medical Center Greeley	◔	◔	●	◕	◕	NA	◑	◔
North Suburban Medical Center Thornton	◔	◔	◔	NA	◔	NA	NA	◑
Parkview Medical Center Pueblo	◔	●	NA	NA	NA	NA	NA	●
Platte Valley Hospital Brighton	◔	◔	NA	NA	NA	NA	NA	◔
Presbyterian/St. Luke's Medical Center Denver	◔	●	●	◕	●	◕	◑	◑
Rose Medical Center Denver	◔	●	●	◔	◕	NA	◑	◑
St. Mary's Hospital & Medical Center Grand Junction	◔	●	●	◔	◕	◑	●	◕
Sky Ridge Medical Center Lone Tree	◔	●	◑	◕	◔	◔	◑	◑
Spalding Rehabilitation Hospital Aurora	◔	NA	NA	NA	NA	NA	NA	◔
Swedish Medical Center Englewood	◔	◕	◕	◕	◕	◕	●	◕
University of Colorado Hospital Denver	◔	●	◕	◔	●	◕	●	◔

● Full implementation of LEAPFROG's recommended quality and safety leap.

◕ Good progress in implementing LEAPFROG's recommended quality and safety leap.

◑ Good early stage effort in implementing LEAPFROG's recommended quality and safety leap.

◔ Willing to report publicly; did not yet meet LEAPFROG's criteria for a good early stage effort.

NA Not Applicable - e.g. Pancreatic resection does not apply because hospital does not perform pancreatic resections.

For rural hospitals, not all leaps apply. The Quality Index (made up of 17 NQF-endorsed Safe Practices) is the first leap that applies to rural hospitals. The information is compiled from the answers hospitals provided. The LEAPFROG GROUP does not independently verify the accuracy of the information.

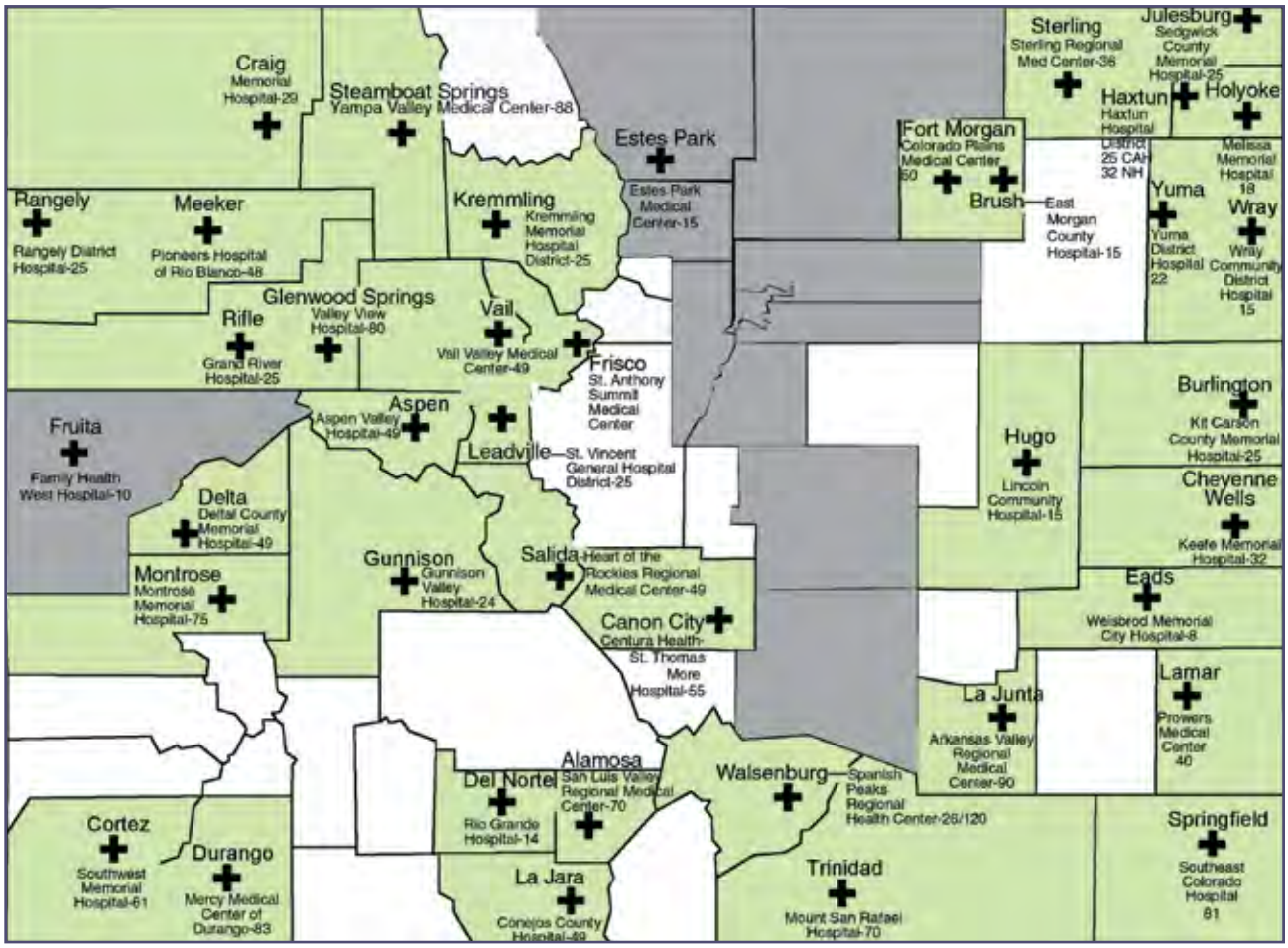
Information from www.leapfroggroup.org as of August 6, 2009.

Colorado Rural Hospitals

There are 44 rural hospitals in the state of Colorado, which serve about 20 percent of Coloradans. These hospitals represent approximately half of all of the hospitals in Colorado. Twenty-six of these rural hospitals are Critical Access Hospitals (CAHs). The Colorado Business Group on Health asked rural hospitals to complete the Leapfrog Quality Index of the Leapfrog survey. This is the fifth year rural hospitals have been asked to complete the index. Does your hospital report its results to the Leapfrog Group?

What is a Critical Access Hospital (CAH)?
A CAH is a hospital that is certified to receive cost-based reimbursement from Medicare. The reimbursement that CAHs receive is intended to improve their financial performance and thereby reduce hospital closures. CAHs must be located in a rural area and meet one of the following criteria: 1) over 35 miles from another hospital; 2) 15 miles from another hospital in mountainous terrain or areas with only secondary roads; 3) state-certified as a necessary provider of health care services to residents in the area. ☐

Colorado Rural Hospitals and Licensed Beds



Source: Colorado Rural Health Center
3033 S Parker Rd., Suite 606, Aurora, CO 80014
303-832-7493 or 800-851-6782
http://www.coruralhealth.org/
Updated July 2007

Gray = Urban counties
Green = Rural counties
White = Rural counties with no hospitals

Thank you to all rural hospitals who participated in the LEAPFROG survey. We appreciate your time and commitment to quality care.

A culture based on safety

Adequate staffing, clear and uniform documentation, prevention practices, management of medications, and infection control are basic foundations of care that highly impact the outcomes of any hospital stay. This score is a summary of 17 healthcare practices. □

THE LEAPFROG GROUP for Patient Safety
Rewarding Higher Standards

Leap 4

		Leapfrog Quality Index				
Congratulations to Colorado rural hospitals:		2005	2006	2007	2008	2009
Centura Health St. Thomas More Hospital	Canon City	◔	◑	●	◑	◑
Colorado Plains Medical Center	Fort Morgan				◑	
Delta County Memorial Hospital	Delta	◔	◑	◔	◔	◑
East Morgan County Hospital	Brush		◕	◕	◔	◔
Estes Park Medical Center	Estes Park			◔		
Keefe Memorial Hospital	Cheyenne Wells		◔			
The Memorial Hospital	Craig		◔		◔	
Montrose Memorial Hospital	Montrose	◔	◕	◑	◔	
St. Anthony Summit Medical Center	Frisco					◑
San Luis Valley Regional Medical Center	Alamosa		◔		◔	
Southeast Colorado Hospital	Springfield		◕			
Southwest Health System Inc.	Cortez			◔		
Sterling Regional Medical Center	Sterling			◑	◔	◔
Valley View Hospital Association	Glenwood Springs		◔			
Yuma District Hospital	Yuma		◔			

What do these results mean?

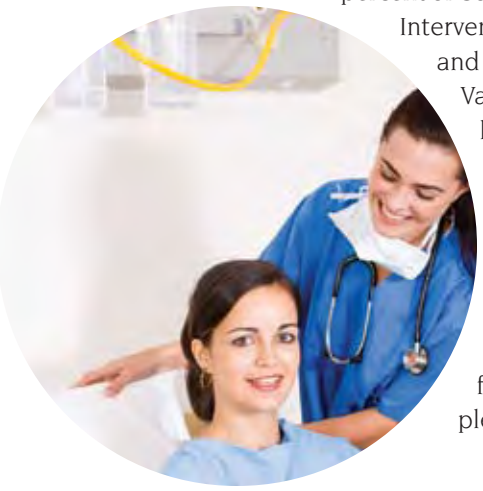
- ● **Fully implemented** means the hospital is in the highest quartile for Overall Points across all Safe Practices that apply to the hospital.
- ◕ **Good progress** means the hospital is above the median, but not in the top quartile, for Overall Points across all Safe Practices that apply to the hospital.
- ◑ **Good early stage effort** means the hospital is below median, but not in the lowest quartile, for Overall Points across all Safe Practices that apply to the hospital.
- ◔ **Willing to report** means the hospital is in the lowest quartile for Overall Points.
- ○ **Did not disclose this information** means the hospital did not respond to this section of the survey, or the hospital was asked to complete the survey but has not submitted one.

Patient Safety Efforts Save Lives

In 1999, the Institute of Medicine (IOM) issued a report titled *To Err is Human: Building a Safer Health System* which gave estimates that up to 98,000 people die in U.S. hospitals each year as the result of problems with patient safety. This amounts to more than 10 deaths and 50 disabilities every hour due to avoidable medical errors.

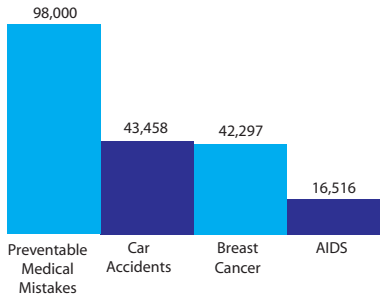
Though it has been a decade since the Institute of Medicine's report on the failure of U.S. hospitals to adequately protect patient safety, too many hospitals still have failed to implement standards known to improve quality and save lives. Patient Safety is defined as the prevention of harm to patients, where harm can occur through errors of commission and omission.

For achieving patient safety, the majority of patient safety leaders in the U.S. agree that the efforts of groups like Leapfrog Group have helped move patient safety in the right direction but that progress is still too slow. According to the 2008 Leapfrog Hospital Survey, only 7.2 percent of U.S. hospitals and 2.5 percent of hospitals in Colorado fully meet Leapfrog medication error prevention standards. In addition, 31.5 percent of U.S. hospitals and 43.1 percent of hospitals in Colorado for Coronary Artery Bypass Graft (CABG), 30.4 percent of U.S. hospitals and 25.9 percent of Colorado hospitals for Percutaneous Coronary Intervention (PCI), and 6.9 percent of U.S. hospitals and 0 percent of hospitals in Colorado for Aortic Valve Replacement (AVR), 4.7 percent of U.S. hospitals and 4.8 percent of hospitals in Colorado for Abdominal Aortic Aneurysm (AAA) Repair are fully meeting mortality standard. See graph →



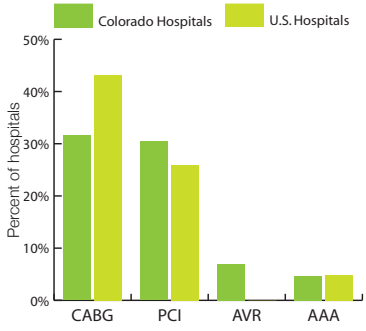
Therefore, how much progress is being made in Colorado? The next several pages will outline how Colorado hospitals performed in 2009 and what is left to be completed in the improvement process.☐

Deaths in U.S. Per Year



Preventable medical mistakes cause more deaths per year than car accidents, breast cancer or AIDS.
Source: Institute of Medicine (1999)

Meeting the Leapfrog Mortality Standards:
Colorado hospitals compared to U.S. hospitals



Coronary Artery Bypass Graft (CABG)
Percutaneous Coronary Intervention (PCI)
Aortic Valve Replacement (AVR)
Abdominal Aortic Aneurysm (AAA) Repair

National and Local Organizations making a difference in patient safety in Colorado

Agency for Healthcare Research and Quality (AHRQ) www.ahrq.gov
The Nation's lead federal agency for research on healthcare quality, cost, outcomes, and patient safety

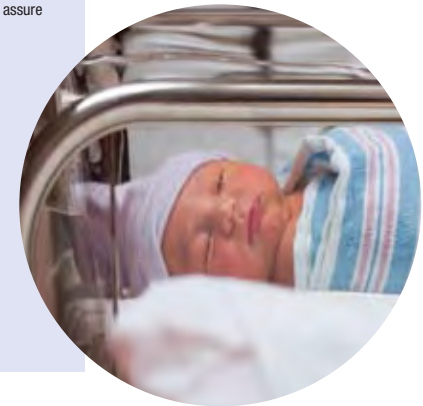
Colorado 5 Million Lives Campaign www.colorado5millionlives.org
Part of a nationwide effort led by the Institute for Healthcare Improvement (IHI) to protect patients from five million incidents of harm over a two-year period through strengthening and implementing safeguards in hospitals. The local effort is spearheaded by the Colorado Foundation for Medical Care (CFMC), one of the countries' most experienced and respected medical quality improvement organizations (QIOs) to help contain costs, improve quality of care, and assure that healthcare dollars are spent on medically necessary and appropriate services.

Colorado Patient Safety Coalition www.coloradopatientsafety.org
A local patient safety organization focused on education, communication, encouraging best practices and promoting collaboration regarding patient safety.

Institute for Healthcare Improvement (IHI) www.ihi.org
A global organization working to accelerate improvement by building the will for change, cultivating promising concepts for improving patient care, and helping healthcare systems put those ideas into action.

Leapfrog Group www.leapfroggroup.org
A national patient safety organization with local ties to the Colorado Business Group on Health. Leapfrog promotes improvement by providing consumers with data to make more informed hospital choices. The Leapfrog Group administers an annual survey to hospitals that focuses on four main areas that have the greatest effect on improving patient safety and quality.

National Committee for Quality Assurance (NCQA) www.ncqa.org
A private, not-for-profit organization dedicated to improving healthcare quality by developing quality standards and performance measures for a broad range of health care entities. NCQA's programs and services reflect a straightforward formula for improvement: Measure. Analyze. Improve. Repeat.



All hospitals are not the same

What if I'm having a heart attack?

Research has confirmed that the rate of patient deaths for certain procedures and conditions may be associated with quality of care. An expected range of patient deaths is predictable for a given procedure or condition; mortality rates above or below the expected range may have quality implications. Especially when reviewing mortality rates, remember that medicine is not an exact science and death may occur even when all standards of care are followed.

Colorado hospitals report the mortality risk for many conditions. These reports provide some information about hospital performance but should not be used as a sole source in determining quality. ☐

Here is the report on heart attacks.

Acute Myocardial Infarction [AMI] Risk-Adjusted Mortality. In a heart attack or stroke emergency the best choice for a consumer is the closest hospital. It is a life-and-death emergency. If a heart attack victim gets to an emergency room fast enough, prompt care dramatically reduces heart damage and may save the person's life.

You can find other charts like this one at www.cohospitalquality.org/.

2007 Heart Attack (AMI) Mortality Measures	Number of cases	Number of deaths	Risk adjusted mortality rate	Statistical significance
Statewide Totals	**6,111**	**326**	**6.37%**	
Southeast South Central Region				
Memorial Hospital	419	26	8.04%	◒
Parkview Medical Center	251	13	7.11%	◒
Penrose-St. Francis Healthcare Services	411	24	7.9%	◒
St. Mary-Corwin Medical Center	145	15	11.92%	○
Western Slope				
Delta County Memorial Hospital	45	8	12.16%	◒
Mercy Medical Center	148	9	8.82%	◒
Montrose Memorial Hospital	53	1	3.32%	◒
St. Mary's Hospital & Medical Center	404	8	3.63%	◒
Metro Denver				
Denver Health Medical Center	73	2	3.65%	◒
Exempla Good Samaritan Medical Center	144	10	8.19%	◒
Exempla Lutheran Medical Center	405	13	4.05%	◒
Exempla St. Joseph Hospital	328	9	3.39%	◒
Littleton/Adventist Hospital	100	9	7.61%	◒
North Suburban Medical Center	100	5	7.39%	◒
Parker Adventist Hospital	93	4	6.49%	◒
Porter Adventist Hospital	146	12	7%	◒
Presbyterian/St. Luke's Medical Center	128	5	4.73%	◒
Rose Medical Center	137	12	5.5%	◒
Sky Ridge Medical Center	122	6	8.19%	◒
St. Anthony Hospital Central	368	16	5.7%	◒
St. Anthony Hospital North	122	6	4.57%	◒
Swedish Medical Center	198	17	8.45%	◒
The Medical Center of Aurora	351	13	4.2%	◒
University of Colorado Hospital	188	14	8.06%	◒
North Central Region				
Boulder Community Hospital	109	5	6.23%	◒
Longmont United Hospital	111	8	6.12%	◒
McKee Medical Center	36	3	5.38%	◒
Medical Center of the Rockies	316	7	3.98%	◒
North Colorado Medical Center	286	12	5.3%	◒
Poudre Valley Hospital	185	11	7.14%	◒

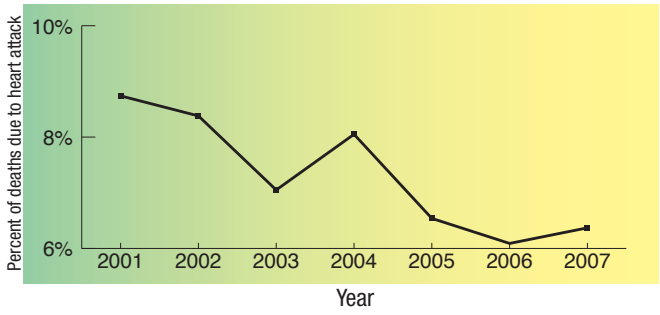
● Better than average ◒ Average ○ Worse than average Hospitals with less than 30 cases not listed

The best way to use mortality data.

1. Familiarize yourself with the indicators. The analysis is on conditions and procedures with higher volumes.
2. Decide which quality indicator is most relevant to you, and review that chart. Look to see if the hospital you are interested in is listed. If not, it means that the hospital did not have enough cases for that indicator. You might wish to look at another quality indicator for that hospital's performance.
3. Hospitals are arranged alphabetically by geographic area. You may wish to compare the performance of hospitals in your area or those that are covered by your health insurance plan. Each chart provides the results for specific hospitals, as well as a statewide average.
4. View the hospital's comments. It is especially important to view the hospital's comments if performance is lower than expected.
5. Compare the hospital's performance over time, by viewing the trend report.
6. You may find other quality indicator reports on the World Wide Web or elsewhere. Each methodology will produce different results. Data on this web site are produced using a publicly available methodology. The information can be verified and reproduced. This is not true for all reports on quality that are available to the public. Be aware of the difference. Mortality indicators are outcome indicators; other types of indicators you may find may include process indicators, which measure whether or not certain known treatments were given, and patient satisfaction indicators. You may also find indicators that measure resource availability.
7. Talk with your physician, your hospital, your family and friends about the information and their experiences and recommendations as part of making a decision where to obtain hospital care. As with all data, context and appropriate interpretation are needed for the information to be meaningful and useful.
8. Notice that for the hospitals that fall into the category of "no significant statistical difference from the statewide rate," any difference in the rates among them is not statistically significant. It cannot be determined if one performs better than another in this category.
9. This data should not be used alone to draw a conclusion about a particular hospital's overall performance.

Source: http://www.cohospitalquality.org/

Colorado heart attack deaths by year
(Risk adjusted)



Take Note:

Very few states actually make this information available to the public and even fewer provide the information in an easy-to-use searchable format like Colorado. For more information see www.CoHospitalQuality.org/.

"Never Events"

A rare medical error should never happen to a patient.

Adverse healthcare events are a leading cause of death and injury in the United States today. The National Quality Forum, a nonprofit national coalition of physicians, hospitals, business and policy-makers, has identified 28 events as occurrences that should never happen to a patient in a hospital. They termed them "serious reportable events", or "Never Events." Therefore, as part of the Leapfrog Group Hospital Survey, hospitals were asked to confirm their commitment to adopting a "Never Events" policy. "Never Events" Policy should reduce the number of serious reportable events in hospitals by helping hospitals take responsibility for their mistakes and outline a method to learn from them. In 2009, Leapfrog required that hospitals adopt the following five points into an internal policy that is implemented in their facility to address the occurrence of a "Never Event."

The "Never Events" components

❶ Hospital's staff give a verbal apology and explanation to the patient and/or family affected by the "Never Event."

❷ Hospitals report the event to at least one of the external agencies (Joint Commission, State reporting program for medical errors, and Patient Safety Organization) within 10 days of becoming aware that the never event has occurred.

❸ Hospitals perform a prompt and thorough root cause analysis in order to identify and learn from the mistakes that caused the event.

❹ Hospitals waive the costs that are directly related to the "Never Event" so that the patient or the third-party payer never receive a bill for those costs.

❺ Hospitals provide a copy of the hospital's policy to all patients, patients' families, and payers upon request.

In March of 2008, the Colorado Hospital Association (CHA) Board of Trustees approved a recommendation that advised Colorado member hospitals to adopt a common set of core principles in developing payment policies pertaining to serious preventable events. These principles better define the fiscal responsibilities of Colorado hospitals in responding to a "Never Event" within their facilities. ☐

Colorado hospitals sharing their "Never Event' policies in 2009	
Arkansas Valley Regional Medical Center	La Junta
Boulder Community Hospital	Boulder
Centura Health - Avista Adventist Hospital	Louisville
Centura Health - Littleton Adventist Hospital	Littleton
Centura Health - Parker Adventist Hospital	Parker
Centura Health - Penrose St. Francis Medical Center	Colorado Springs
Centura Health - Porter Adventist Hospital	Denver
Centura Health - St. Anthony Central Hospital	Denver
Centura Health - St. Anthony North Hospital	Westminster
Centura Health - St. Anthony Summit Medical Center	Frisco
Centura Health - St. Mary-Corwin Medical Center	Pueblo
Centura Health - St. Thomas More Hospital	Canon City
Delta County Memorial Hospital	Delta
Exempla Saint Joseph Hospital	Denver
Exempla Good Samaritan Medical Center	Lafayette
Exempla Lutheran Medical Center	Wheat Ridge
Gunnison Valley Hospital	Gunnison
Heart of the Rockies Regional Medical Center	Salida
Longmont United Hospital	Longmont
Medical Center of Aurora, The	Aurora
Medical Center of the Rockies	Loveland
National Jewish Medical and Research Center	Denver
North Suburban Medical Center	Thornton
Parkview Medical Center	Pueblo
Poudre Valley Hospital	Fort Collins
Presbyterian/St. Luke's Medical Center	Denver
Rose Medical Center	Denver
Saint Mary's Hospital	Grand Junction
Sky Ridge Medical Center	Lone Tree
Swedish Medical Center	Denver
University of Colorado Hospital	Aurora
Valley View Hospital	Glenwood Springs
Yuma District Hospital	Yuma

What are "NEVER EVENTS"?

In 2002, the National Quality Forum (NQF) endorsed a list of 27 (now 28) adverse events that are serious, largely preventable, and of concern to both the public and healthcare providers for the purpose of public accountability.

Ten of the 28 "Never Events":

- Surgery performed on the wrong body part
- Patient death or serious disability associated with the misuse or malfunction of a device
- Infant discharged to the wrong person
- Maternal death or serious disability associated with labor or delivery in a low-risk pregnancy
- Patient suicide, or attempted suicide resulting in serious disability
- Patient death or serious disability associated with the use of restraints or bedrails
- Abduction of a patient of any age

To see a complete list of all 28 'Never Events' go to http://www.qualityforum.org/.

Medicare and "Never Events" Paving the road to quality care The Medicare program has generally paid for services under fee-for-service payment systems. They often pay without consideration of quality, outcomes, or overall costs of care. However, this is changing. Over the past several years the Centers for Medicare and Medicaid (CMS) began to identify quality standards to use as a basis for public reporting and payment. They have also aimed to improve quality of care in several ways, including tying payment to quality. CMS has decided that paying for some "Never Events" is not consistent with the goals they have established in their reforms. Beginning in 2008, Medicare will no longer pay for certain conditions acquired by patients after they were admitted to their hospital. By reducing or stopping payments for "Never Events" more CMS resources can be put toward preventing mistakes, rather than paying for them after they occur.

Colorado Hospitals: Proactive efforts in promoting patient safety

What is the Colorado 5 Million Lives Campaign?

The Colorado 5 Million Lives Campaign is part of a nationwide undertaking to protect patients from five million incidents of medical harm over a two year period. The Colorado project was supported by funding from The Colorado Trust. Developed by the Institute for Healthcare Improvement, the national 5 Million Lives Campaign built upon the success of a previous effort, the 100,000 Lives Campaign, to save 100,000 lives over an 18-month period. The 5 Million Lives Campaign, led by the Colorado Foundation for Medical Care, helped Colorado hospitals to further strengthen and implement safeguards to prevent such problems as hospital-acquired infections, adverse drug events, surgical errors, pressure ulcers and other complications.

Medical errors are the fifth-leading cause of death nationwide, according to the Institute for Health Care Improvement. All participating hospitals in Colorado targeted work around the following interventions:

- Preventing Pressure Ulcers,
- Reducing MRSA Infections,
- Medication Reconciliation, and
- Hospital "Boards on Board".

Many of the hospitals also worked on numerous other interventions, too.

As a result of their participation in the campaign, the improvements made by hospitals are long-term and will be sustained as systems and process improvements. Additionally, many hospitals reported great success stories and continue to make improvements to ensure safe patient care and increase patient and doctor communication.

A special improvement that helped consumers is that the hospitals worked together to develop a wallet medication card for all Coloradoans. It is used to track your current medications including supplements and allergies. If every person would carry a medication wallet card, hospitals and doctors could help avoid drug-to-drug interactions and other possible problems. Please visit www.colorado5millionlives.org to download a copy of the medication wallet card. ☐


Name: _____ Last Date Updated: _____
Date of Birth: _____ Phone #: _____
Emergency Contact: _____ Phone #: _____
Primary Care Doctor: _____ Phone #: _____
Pharmacy: _____ Phone #: _____
Last Vaccination Dates: Flu _____ Pneumonia _____ Tetanus _____
ALLERGIES/Reaction: _____

MEDICATION NAME	STRENGTH	HOW MANY?	WHEN & HOW OFTEN?	REASON FOR TAKING
Lipitor (Example)	20 mg	one tablet	once before bedtime	cholesterol

Carry this with you at all times and update every time you see a provider.

MEDICATION NAME	STRENGTH	HOW MANY?	WHEN & HOW OFTEN?	REASON FOR TAKING
Lipitor (Example)	20mg	one tablet	once before bedtime	cholesterol

Your Name: _____

This form was developed by the Colorado Foundation for Medical Care in partnership with doctors, pharmacists and consumers. Special thanks to The Colorado Trust's support of this project through the Colorado 5 Million Lives Campaign.

Visit www.colorado5millionlives.org to print more forms.

Listed below are all of the Colorado hospitals that participated in Colorado's 5 Million Lives Campaign:

Avista Adventist Hospital
Aspen Valley Hospital
Boulder Community Hospital
Children's Hospital, The
Community Hospital
Craig Hospital Foundation
Denver Health Medical Center
East Morgan County Hospital
Estes Park Medical Center
Exempla Good Samaritan Hospital
Exempla Lutheran Medical Center
Exempla Saint Joseph Hospital
Family Health West
Haxtun Hospital District
Heart of the Rockies Regional Medical Center
Keefe Memorial Hospital
Kremmling Memorial Hospital District
Littleton Adventist Hospital
Lincoln Community Hospital
Longmont United Hospital
The Medical Center of Aurora
Medical Center of the Rockies
Melissa Memorial Hospital
Memorial Hospital
Montrose Memorial Hospital
Mount San Rafael Hospital
Parker Adventist Hospital
Parkview Medical Center
Penrose—St. Francis Health Services
Platte Valley Medical Center
Porter Adventist Hospital
Prowers Medical Center
Rio Grande Hospital
Rose Medical Center
San Luis Valley Regional Medical Center
Sedgwick County Memorial Hospital
Sky Ridge Medical Center
Southeast Colorado Hospital
Southwest Memorial Hospital
Spanish Peaks Regional Health Center
St. Anthony Hospital - Central
St. Anthony North
St. Anthony Summit Medical Center
St. Mary Corwin Medical Center
St. Mary's Hospital & Medical Center
St. Thomas More Hospital
Sterling Regional Medical Center
University of Colorado Hospital
Vail Valley Medical Center
Valley View Hospital
Wray Community District Hospital
Yampa Valley Medical Center
Yuma District Hospital

Thank you to the participating Colorado hospitals, and thank you to The Colorado Trust and the Colorado Foundation for Medical Care.

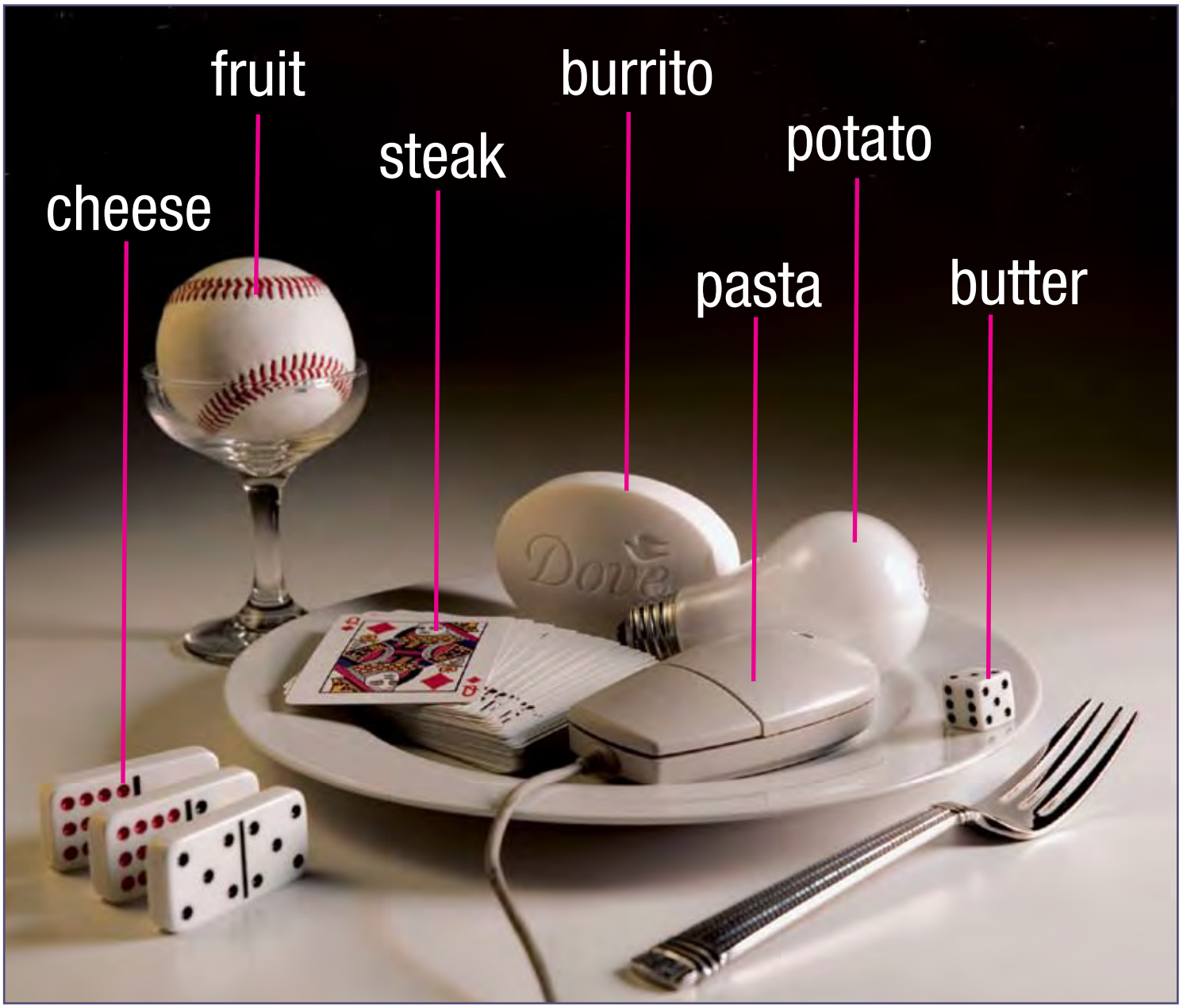


Photo: National Geographic

Cut this page out and post on your refrigerator

Thinking about . . .

HOW MUCH TO MUNCH?

Use these objects as a guide to portion size.

YES, I CAN! Small Steps, Great Rewards

ACTIVITY AND FOOD

Eat a little less! Walk and exercise more!

100 extra calories per day could add 10 extra pounds per year.

Nutritionists suggest what a single serving should be.

Portion sizes based on recommendations from the American Dietetic Association and Weight Watchers International.

Cutting the Fat

During the past 20 years there has been a dramatic increase in obesity in the United States. Obesity is a growing problem for Coloradans. Between 1990 and 2007, obesity among Colorado adults has more than doubled and continues to rise. As of 2007, 19.1 percent of Coloradans were considered obese and 37.1 percent were overweight. Although in 2008, only one state (Colorado) had a prevalence of obesity less than 20 percent, we still need to be aware of the continuing increase in adult obesity. ☐

Are you overweight? Find out here.

Body Mass Index (BMI)

	Normal			Overweight			Obese		
BMI	**19**	**21**	**23**	**25**	**27**	**29**	**31**	**33**	**35**
Height	*Weight in Pounds*								
58"	91	100	110	119	129	138	148	158	167
59"	94	104	114	124	133	143	153	163	173
60"	97	107	118	128	138	148	158	168	179
61"	100	111	122	132	143	153	164	174	185
62"	104	115	126	136	147	158	169	180	191
63"	107	118	130	141	152	163	175	186	197
64"	110	122	134	145	157	169	180	192	204
65"	114	126	138	150	162	174	186	198	210
66"	118	130	142	155	167	179	192	204	216
67"	121	134	146	159	172	185	198	211	223
68"	125	138	151	164	177	190	203	216	230
69"	128	142	155	169	182	196	209	223	236
70"	132	146	160	174	188	202	216	229	243
71"	136	150	165	179	193	208	222	236	250
72"	140	154	169	184	199	213	228	242	258
73"	144	159	174	189	204	219	235	250	265
74"	148	163	179	194	210	225	241	256	272
75"	152	168	184	200	216	232	248	264	279
76"	156	172	189	205	221	238	254	271	287

Measuring Obesity - BMI versus WHR

There are two common ways to measure body fat, Body Mass Index (BMI) and Waist-to-Hip Ratio (WHR). Both measures are can usually predict whether someone is underweight, a healthy weight, overweight or obese. However, there is some discussion over which indicator is a better measure. The Body Mass Index (BMI) is more often used as the standard tool to measure overweight and obesity. WHR measures whether an individual has too much body fat around their waist, a risk factor for cardiovascular disease. Higher ratios indicate an increased risk of stroke, diabetes, and heart attack. Source: Centers for Disease Control and Prevention (CDC)

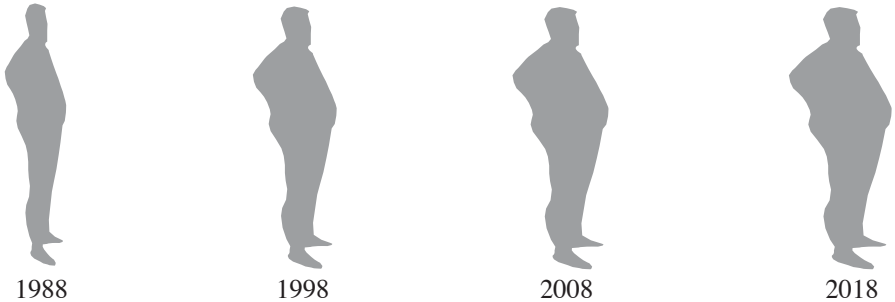
WHR= waist circumference in inches ÷ hip circumference in inches
- For men, a ratio of .90 or less is considered safe,
- For women, a ratio of .80 or less is considered safe,
- For both men and women, a WHR of 1.0 or higher is considered "at risk" for heart disease and other problems associated with being overweight.

BMI= (weight in pounds x 703) ÷ height in inches
- A BMI: Less than 18 = under weight,
- Between 18.1 and 18.5 = thin for your height,
- Between 18.6 and 24.9 = healthy weight,
- Between 25 and 29.9 = overweight,
- Over 30 = obese.

The Costs of Obesity

Adults categorized as obese are 44 percent more likely to say that they have fair or poor health status than those adults who are not obese. Poor health can affect daily exchanges, including work-place productivity. Obese adults are 21.7 percent more likely to report having one or more poor physical health days per month.

In addition to increasing the number of work days missed, obesity also increases the risk for at least 20 health conditions, including diabetes, high blood pressure, high cholesterol, stroke, heart disease and asthma. Obesity may also influence the risk of several types of cancer including colorectal, prostate, breast, cervical and ovarian cancer.



37.1%
Overweight Americans

How much will it cost

Concerns about cost and safety prompt scrutiny of imaging services

From MRIs to CT scans, advances in medical imaging can be a life saver, but there is growing concern that overuse of the technology is driving health care costs and unnecessarily exposing patients to radiation.

MRIs and CT scans allow doctors to diagnosis and treat medical conditions because they can provide valuable information when other imaging technologies are less clear. However, there is a growing body of evidence that suggests that a proliferation of doctor-owned facilities and patient demand are creating incentives for ordering high-cost exams with questionable usefulness, quality and safety.

Sample Prices

MRI Magnetic Resonance Imaging for knee

	Average	Minimum	Maximum
Price	$2,427.97	$693.00	$3,555.00
Discount Prices	$1,567.63	$548.00	$3,025.75

CT Computerized Tomography for low back

	Average	Minimum	Maximum
Price	$1,854.09	$620.00	$2,898.00
Discount Prices	$1,101.11	$435.00	$1,575.10

The use of imaging services has grown significantly for both Medicare and private insurers. For example, from 1993 to 1999, the volume of imaging services per Medicare patient grew 45 percent, far outstripping the growth of all other physician services, which grew 22 percent.

The trend has raised the eyebrows of both a government agency and private insurers, who believe more oversight of imaging use is needed to ensure the exams are necessary, useful and safe.

In 2005, the Medicare Payment Advisory Commission testified before Congress that the average use of imaging services in one area of the country can be three times the average use in another area. However, areas that used more imaging did not have better health outcomes.

Two years later, Medicare officials raised questions about the benefits of CT heart scans and wanted more studies before paying for them. But after heavy lobbying by cardiologists, Medicare backed down.

"There are a lot of technologies, services and treatments that have not been unequivocally shown to improve health outcomes in a definitive manner," Dr. Barry Straube, Medicare's chief medical officer, explained to the *New York Times* when announcing that the agency would keep covering the tests.

Physician ownership of health care facilities may create financial incentives to order more tests. Studies by the General Accounting Office and others have found that physicians who invest in diagnostic imaging centers or who have imaging equipment in their offices refer their patients more frequently for MRI, CT, nuclear medicine, and ultrasound.

However, some health care providers are examining overuse themselves.

An August 2009 op-ed in the *New York Times* described how some communities are delivering higher quality care at lower costs. Last year in Cedar Rapids, Iowa, physician and hospital leaders investigated the overuse of CAT scans. They found in just one year, 52,000 scans were done in a community of 300,000 people, a rate that is actually lower than the national average. Now physicians and clinics are seeking out solutions to reduce the expense and harm of unnecessary scans.

The National Business Group on Health has supported legislation aimed at reducing overutilization of unnecessary and potentially harmful imaging services. ☐

Take Note:

Negotiate

Hospitals and imaging centers in Colorado need to provide consumers and employers with more updated and accurate pricing information. Are you paying full price for a knee or back scan? Many institutions will reduce the price if you just ask. Hospitals frequently give significant discounts if the consumer pays cash.

Not only does the use of imaging services vary widely, so does the cost.

It can be difficult for patients to track down cost information, but in 2008, the Colorado Business Group on Health (CBGH) conducted a "secret shopper" pricing study to learn what metro hospitals in Colorado charged for two common imaging exams: an MRI (magnetic resonance imaging) of the knee and a CT (computerized tomography) scan of the low back.

Posing as an uninsured patient, the surveyor asked how much the two procedures cost. The prices varied dramatically among hospitals. For the MRI, the most-expensive hospital cost about $2,500 more than the least-expensive hospital; for the CT scan, the difference was $2,300.

Price differences for similar goods and services often indicate a difference in quality. However, this was not the case for the MRI and CT scans, based on teslas for MRIs and slices for CT scans. There was no relationship between the cost of a scan and it's quality.

Doctors should be the ultimate authority in deciding whether you need an MRI or CT scan. It's patients' jobs, however, to be informed and inquisitive consumers. ☐

Sample Prices

MRI Magnetic Resonance Imaging for knee

Region	Average Cost
Northwest Colorado	$2462.50
South Central Colorado	$2721.11
Southern Colorado	$1593.85
Central Colorado	$2861.01
Western Colorado	$2402.50

CT Computerized Tomography for low back

Region	Average Cost
Northwest Colorado	$1829.98
South Central Colorado	$2307.53
Southern Colorado	$1704.85
Central Colorado	$2645.33
Western Colorado	$998.50

Before undergoing a scan, patients should ask their physician:

☐ Why do I need this exam?

☐ How will having this exam improve my health care?

☐ Are there alternatives that do not use radiation that are equally as good?

☐ Is this facility accredited by the American College of Radiology or a similar organization? This ensures that basic quality and safety standards are met.

☐ Does the physician ordering the scan have a financial interest in the facility providing the exam (i.e. do they directly profit from ordering the scan)?

Source: American College of Radiology

High cost of premiums

Economics and Medical Coverage

The current healthcare debate covers a lot of ground: coverage, benefits, pre-existing conditions and many more. But for working Americans, who tend to get coverage through their employer, their number one concern is the cost. Lack of affordable coverage threatens a vibrant, competitive Colorado economy.

- **Health insurance premiums soar**
  Between 2000 and 2005, Colorado businesses saw their health premiums increase nearly 60 percent.
- **Cost of coverage eats up an increasing share of business expenses and employees' wages**
  For insured Colorado employees, the cost of their premium grew from $1,536 in 2000 to $2,845 in 2005.
- **Many businesses cannot afford to help pay a portion of employees' health insurance**
  Colorado businesses that employ 50 or fewer employees are less likely to offer insurance benefits to employees: only 40.6 percent offered this benefit in 2005, down from 53 percent in 2000.

If the current trends continue we will be left with:

- **Unaffordable coverage for business**
  At the current 10 percent average annual rate of growth in premiums, by 2012 employee-only coverage will cost $7,600 and family coverage will cost $21,000.
- **Health insurance will cost more and cover less**
  In order to keep premium costs down so they can continue to offer coverage, many employers have substantially increased the copay and deductible amounts on their plans. This has meant higher out-of-pocket costs for employees. Even so, premiums continue to escalate.
- **The cost problem will continue to get worse as more and more workers are priced out of coverage**
  A decade ago, nearly 70 percent of workers whose employers offered coverage enrolled. By 2005, this proportion had declined to 58.9 percent.

Today, nearly 70 percent (546,000) of Colorado's uninsured are working adults or their dependants. The growth in the uninsured affects the cost of coverage for those who are insured. In 2005, an estimated $934 of the average annual premium for family coverage went to cover costs for the uninsured-an amount projected to climb to $1,570 by 2010. □

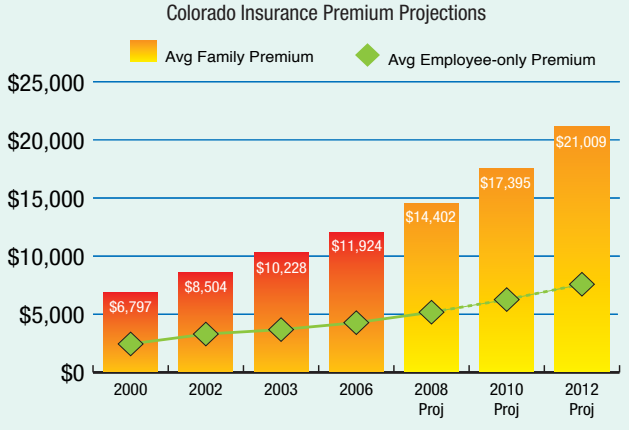
Resources: www.americashealthrankings.org
Health Care and Business: The Bottom Line, The High Cost of Doing Nothing, Produced by Colorado Business Group on Health and ViCom, Inc. Tracy Johnson, Health Policy Solutions, Inc., provided technical assistance. Thanks to Rose Community Foundation for funding support. Copies of this brochure are available at no cost from the Colorado Business Group on Health.

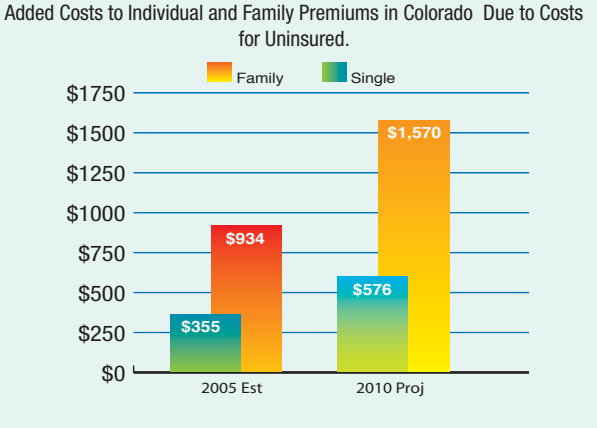
"In the last eight years, premiums have grown four times faster than wages. An additional 9 million Americans have joined the ranks of the uninsured. The cost of health care now causes a bankruptcy in America every 30 seconds. By the end of the year, it could cost 1.5 million Americans to lose their homes.

Even for folks who are weathering this economic storm and have health care right now, all it takes is one stroke of bad luck, an accident or an illness, a divorce, a lost job -- to become one of the nearly 46 million uninsured, or the millions who have health care but really can't afford what they've got.

We didn't get here by accident. The problems we face today are a direct consequence of actions that we failed to take yesterday."

President Barack Obama
Health Care Summit – March 5, 2009





Ask the right questions

in order to choose the right health plan for you.

A. What kinds of health plans are there and how do they compare?

Compare plan types	Health Maintenance Organization HMO	Preferred Provider Organization PPO	Consumer Driven Health Plan CDHP
Cost Structure	You pay: ① premiums[1] ② either copays[3] or coinsurance[2] (usually copays) • In-network providers are less costly; out of network providers are not covered. • Provides least exposure to unexpected costs.	You pay: ① premiums[1] ② (usually) a deductible[4] ③ coinsurance[2] • In-network providers are less costly.	You pay: ① premiums[1] ② a deductible[4] • More data may be available about your out-of-pocket-costs.
Services	• Preventive care services covered.	• Preventive care services may be covered.	• Preventive care services usually covered.
Other features	More likely to report data on plans' quality of care. • More likely to be accredited. • More likely to include disease management programs.	Wide network. • No data usually available on plan's quality of care. • More paperwork/claims.	Wide network. • No data usually available on plan's quality of care. • More paperwork/claims. • May be able to "rollover" unused funds to the next year.
I want (check one plan type)…	☐	☐	☐

B. Choose three plans from your selected plan type to compare

	1 _____	2 _____	3 _____
Compare plans			
Doctor: Is there a doctor that you prefer?	☐ yes ☐ no — are they in-network? ☐ yes ☐ no	☐ yes ☐ no — are they in-network? ☐ yes ☐ no	☐ yes ☐ no — are they in-network? ☐ yes ☐ no
Hospital: Is there a hospital that you prefer?	☐ yes ☐ no — is it in-network? ☐ yes ☐ no	☐ yes ☐ no — is it in-network? ☐ yes ☐ no	☐ yes ☐ no — is it in-network? ☐ yes ☐ no
Benefits: Are the benefits that I need covered?	☐ yes ☐ no	☐ yes ☐ no	☐ yes ☐ no
Compare costs			
What premium cost will I have for the year?	$_____/yr	$_____/yr	$_____/yr
What out-of-pocket costs do I expect for next year? • Consider inpatient, outpatient hospital, pharmacy and physician costs. • If you take prescription drugs, compare the coverage and cost of these drugs in different plans. Each plan has a preferred drug list (called a formulary), and the cost of the drug depends on your company or the health plan's benefit design.	deductible: $_____/yr coinsurance: $_____/yr copays: $_____/yr total: $_____/yr	deductible: $_____/yr coinsurance: $_____/yr copays: $_____/yr total: $_____/yr	deductible: $_____/yr coinsurance: $_____/yr copays: $_____/yr total: $_____/yr
What is a "worse case" for out-of-pocket costs, such as a major accident, surgery or cancer? • Consider inpatient, outpatient hospital, pharmacy and physician costs.	coinsurance: $_____/yr copays: $_____/yr total: $_____/yr	coinsurance: $_____/yr copays: $_____/yr total: $_____/yr	coinsurance: $_____/yr copays: $_____/yr total: $_____/yr
Compare quality			
HEDIS Scores	Cardiac _____ Diabetes _____ Mental Health _____ Immunizations _____ Cancer Screening _____	Cardiac _____ Diabetes _____ Mental Health _____ Immunizations _____ Cancer Screening _____	CDHPs do not report HEDIS scores
Compare which plans offer you the most overall	☐ Doctor ☐ Hospital ☐ Benefits ☐ Cost ☐ Quality	☐ Doctor ☐ Hospital ☐ Benefits ☐ Cost ☐ Quality	☐ Doctor ☐ Hospital ☐ Benefits ☐ Cost ☐ Quality

[1, 2, 3, 4] *See resource page 41*

A Sad Tale, but true:
One doctor's struggle to find answers

What Happened in 2008?

Sometimes, individuals have no symptoms to alert them about a serious health problem until the disease is well-advanced. Last year, when Dr. A's diabetes symptoms surfaced, we learned that they arrived all at once: an unquenchable thirst, frequent urination and increased fatigue. Because he was a physician, he identified the symptoms and sought help. However, finding the care he needed was difficult even though he is a medical professional.

His first step was to visit his physician. His physician ordered a blood test and told him he would be notified if the results were abnormal. When Dr. A received no call from the doctor's office, he felt relieved, but then he decided to call to satisfy his curiosity.

When the office staff checked his lab results, they noted that his blood sugar level was dangerously high and instructed him to go to the emergency room, even though he wanted to see his regular physician instead. The office staff also told him to find an endocrinologist, because his regular physician did not treat patients with diabetes. Ideally his physician, who knew Dr. A, would have seen him right away, started him on the necessary medications, and then referred him to an endocrinologist. As it was, Dr. A had to find an endocrinologist on his own.

The endocrinologist gave him several prescriptions, including one for insulin. Dr. A was asked to begin testing his blood sugar and call the results in daily. He also took the advice of the office nurse to take another medication, which was frequently prescribed for diabetes patients.

When Dr. A went back for the follow-up appointment two weeks later, he asked to see the blood sugar readings he had been faithfully taking and calling in to the office every day. He discovered that the office was not keeping a record of his readings and he also learned from his physician that he should not be taking the medication that the nurse had recommended.

Fortunately, Dr. A then found another physician who is helping him manage his diabetes as well as tracking his cholesterol, blood pressure and hemoglobin A1c. He also found a health coach (a certified diabetes educator) who is able to provide guidance and information on nutrition, exercise and proper diabetes management.

Even though there were many false starts when he first learned about his diabetes, Dr. A took charge of his health. He found the right medical team: a doctor with good communication skills, an office that tracks his important lab tests over time and an educator who helps patients learn to manage their health.

And Now, in 2009, the Story Continues....
Dr. A reports to us that he has developed a wonderful relationship with this new doctor. He said, "I feel my doctor cares about me and gives me enough time to answer my questions at every visit."

He adds, "Because my doctor is working with me, I lost 43 pounds and have significantly reduced my insulin dose. I am psychologically coping much better with my disease. I think this is because I have this great working relationship and have been able to change my own behavior and impact my health."

In spite of all this good news, Dr. A went on to relate, "I have another bad story to report this year. My doctor recommended that I have a stress test." (Note: a stress test is ordered when the physician wants to check how the heart functions when the patient is exercising, and the heart is beating more rapidly. Signs of heart disease can be detected by this test). "When I went to the new doctor's office, they wanted to repeat my history and visit (at a cost of $200) before I could have my test. I already had a recent, complete physical from my primary care doctor. The specialist should be coordinating my care with my primary care doctor, and I should not need to get a repeat physical and have to pay for it."

Lessons Learned...

1. Follow up on your tests, because not all physicians have systems in place to notify patients of results in a timely way.
2. Know your numbers! What is the optimal level for your blood pressure, your cholesterol, and your blood sugar? What is your healthiest weight?
3. If you are told you have diabetes, heart disease, or any other chronic health problem: find out more! Find a health educator, a care manager, or see if you are eligible to join a disease management program through your health plan. You have questions, and they have answers.
4. Follow through with your health provider's recommendations. Lose a few pounds, quit smoking, and get active. Take your medications exactly as prescribed. Go back to see your physician routinely, so you have the time to talk about managing your health, tracking your progress, getting preventive care as scheduled, and making changes in medications if necessary.

Thank you for sharing this story, Dr. A. We are glad you are feeling better this year! □

Disease Management

Many health plans offer programs to their members with asthma, cardiovascular, diabetes, obesity and other chronic conditions.

Through these programs you can learn to manage continuing health conditions so you stay active and possibly avoid complications. Many plans provide will provide you a case manager, a nurse, or a call-in number where you can talk to a health professional. These resources can be used to answer day-to-day questions that you may have such as:

- What diseases may cause the symptoms I have?
- What tests might I need, or what do these test results mean?
- What are these medications and how can I take them most effectively?
- When do I need to see my physician again?
- How can I change my daily activities so that I can start feeling better? Your nurse or case manager can work directly with you and your doctor to design a plan that is right for you. Effective disease management programs are based on the best evidence and practices available in the medical literature.

How can disease management help my family member or me?
Common benefits of disease management programs include: children missing fewer days of school, adults missing fewer days of work, and fewer complications from chronic conditions.

How can I get into a disease management program?
Contact your health plan or your physician to learn more about these programs. Many of these programs are available to plan members at no cost.

How can I organize my healthcare information?
Track your health and your healthcare services in an electronic personal health record. A personal health record can organize your medications, test results and allergies into a private, personal, and accessible record.

For more information, call the Colorado Business Group on Health at 303-922-0939

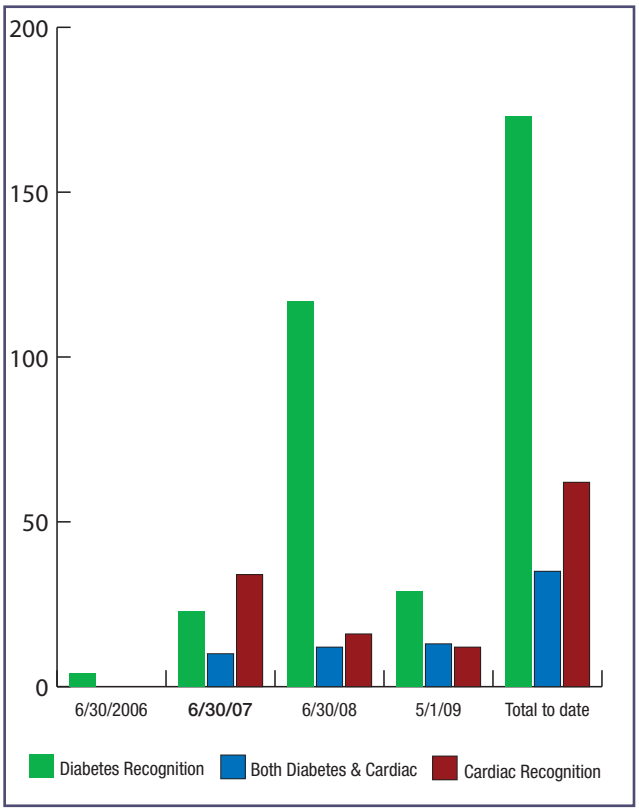
Staying healthy just got easier:
Colorado's recognized physicians

The next few pages display pictures and contact information for many doctors in the Denver, Boulder and Colorado Springs regions. These physicians voluntarily devoted their precious time to specially evaluate the care they provide to their patients. Physicians typically see each patient, and take into account that person's history, medical conditions, medications, and recent test results such as blood pressure and weight. But often, physicians do not know whether most of the patients in their practice meet national standards for outcomes that have been set.

Why are national standards important, and should they apply to me? These national standards are based upon significant research, and set by physicians and scientists. The evidence is clear: patients whose health indicators are carefully managed, including weight, blood pressure, cholesterol and blood sugar, are more likely to avoid complications and additional illnesses that rob people of their vitality. Of course, not every standard is appropriate for every patient: only your physician can advise you. But when a physician knows that most patients in the practice are meeting most standards, then this physician deserves special recognition.

What is the program that the physicians have decided to join? The program is called Bridges to Excellence. In Colorado, patients can select physicians who have attained Diabetes D recognition and Cardiac ❤ recognition.

Number of Recognitions Received by Colorado Doctors



How many physicians have now attained recognition in Colorado? In 2006, only four physicians in Colorado had attained this special status. As of May 2009, 200 physicians had received recognition status in either the Diabetes Program, the Cardiac program or both. ☐

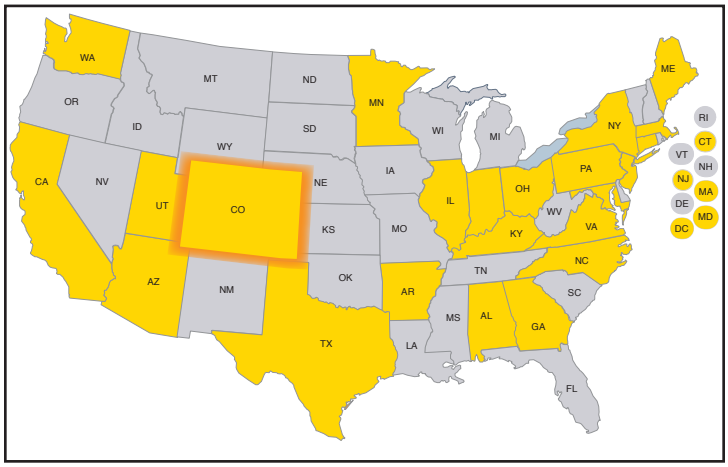
How many recognitions have been bestowed? To date, the number of recognitions has grown from 4 to a total 235. ☐

What is BTE?

Bridges to Excellence (BTE) is a not-for-profit organization developed by employers, physicians, health care services researchers, and other industry experts. Its mission is to create significant leaps in the quality of care that doctors provide to patients, because research shows that very few medical conditions are currently being well managed. The BTE organization has developed programs that individual communities, or health plans or employers can adopt. These programs will recognize and reward health care providers who demonstrate that they can manage the care of their patients. To the patient, this means safe, timely, effective, efficient, equitable and patient-centered care.

For more information about the BTE organization and what types of programs they have developed, go to their web site at www.bridgestoexcellence.org/.

Regions participating in Bridges to Excellence in 2009



Colorado Bridges to Excellence recognized physicians

Is your physician here?

See page 18 for description of Bridges to Excellence (BTE.)

James A. Adams, MD
8383 W. Alameda Avenue
Lakewood, CO 80226-3007
D

Christine V. Bellantoni Laycock, MD
2222 N. Nevada Avenue, Ste 2010
Colorado Springs, CO 80907-6849
D

Kin-Lun Chan, MD
5555 E. Arapahoe Road
Centennial, CO 80122-2312
D

David A. Craigie, MD
9285 Hepburn Street
Highlands Ranch, CO 80129-2262
D

Michael D. Feil, DO
280 Exempla Circle
Lafayette, CO 80026-3370
D

R. Brian Aikin, MD
8015 W. Alameda Avenue, Ste 150
Lakewood CO, 80226-3042
D ❤

Richard P. Bishop, MD
11550 Sheridan Boulevard
Broomfield, CO 80020-3311
❤

Vivian I. Chao, MD
4803 Ward Road
Wheat Ridge, CO 80033-1902
D

Roger S. Damle, MD
1000 Southpark Drive
Littleton, CO 80120-5654 ❤

Stuart R. Ferguson, MD
1601 Lowell Boulevard
Denver, CO 80204-1559
D

Jonathan A. Albert, MD
5555 E. Arapahoe Road
Centennial, CO 80122-2312
D

Sonya L. Black, MD
2955 South Broadway
Englewood, CO 80113-1526
D

Carleen C. Chartier, MD
7600 Shaffer Parkway
Littleton, CO 80127-3004
D

Ira M. Dauber, MD
1000 Southpark Drive
Littleton, CO 80120-5654
❤

No photo available

Ramon Fernandez-Valle, MD
8550 W. 38th Avenue Ste, 206
Wheat Ridge, CO 80033-6053
D

No photo available

Jeffrey A. Amundson, MD
205 S. Garrison Street
Lakewood, CO 80226-2843
D

Terrence W. Boland, MD
7701 Sheridan Boulevard
Arvada, CO 80003-2605
D

Dewey W. Chin, MD
4803 Ward Road
Wheat Ridge, CO 80033-1902
D

No photo available

Gregory J. DiLorenzo, DO
4300 Harlan Street
Wheat Ridge, CO 80033-5122
D ❤

Kevin R. J. Fitzgerald, MD
1420 W. Midway Boulevard
Broomfield, CO 80020-2090
D

Steven M. Archer, MD
8758 Wolff Court, Ste 200
Westminster, CO 80031-6904
D ❤

Janet Brown, MD
3235 Mill Vista Road
Highlands Ranch, CO 80129-2440
D

William C. Choe, MD
1000 Southpark Drive
Littleton, CO 80120-5654
❤

No photo available

John D. Douthit Jr, DO
9981 N. Washington Street, Ste 24
Thornton, CO 80229
D

Susan I. Fixman, MD
8383 W. Alameda Avenue
Lakewood, CO 80226-3007
D

Brent M. Arnold, MD
14701 E. Exposition Avenue
Aurora, CO 80012-2623
D

Hillary L. Browne, MD
2575 Spruce Street
Boulder, CO 80302-3806
D

Eric T. Christiansen, MD
280 Exempla Circle
Lafayette, CO 80026-3370
D

R. Victor Doyle, DO
7550 W. Yale Avenue,
Building B, Ste 100
Denver, CO 80227-3460
❤

Brownie K. Flesche, MD
9285 Hepburn Street
Highlands Ranch, CO 80129-2262
D

James W. Arthur, MD
165 S. Union Boulevard, Ste 800
Lakewood, CO 80228-2213
D ❤

Patricia A. Brumbaugh, MD
17601 S. Golden Road
Golden, CO 80401-2633
❤

Duane A. Claassen, MD
1707 Cole Boulevard, Ste 150
Golden, CO 80401-3255
❤

Roy J. Durbin Jr, MD
1930 S. Federal Blvd. Building A
Denver, CO 80219-5501
D ❤

No photo available

Patricia J. Flood-Speidel, MD
8383 W. Alameda Avenue
Lakewood, CO 80226-3007
D

V. Karen Augustitus, MD
165 S. Union Boulevard, Ste 800
Lakewood, CO 80228-2213
D ❤

No photo available

Richard L. Brundige, MD
8015 W. Alameda Avenue, Ste 050
Lakewood, CO 80226-3075
D ❤

Douglas P. Clark, MD
6140 Tutt Boulevard, Ste 200
Colorado Springs, CO 80923-3576
D

David R. Ehrenberger, MD
1420 W. Midway Boulevard
Broomfield, CO 80020-2090
D ❤

John J. Ford III, MD
8601 Turnpike Drive, Ste 200
Westminster, CO 80031-7044
D ❤

Tracy E. Ayers, MD
4760 Flintridge Drive, Ste 200
Colorado Springs, CO 80918-4266
D

No photo available

J. Kern Buckner, MD
1400 Jackson Street
Denver, CO 80206-2761
❤

Trevor L. Clayborn, MD
2345 Bent Way
Longmont, CO 80503-7614
D

Meighan W. Elder, MD
580 Mohawk Drive
Boulder, CO 80303-3712
D

D. Paul Forward, MD
1707 Cole Boulevard, Ste 150
Golden, CO 80401-3255
D ❤

Jennifer E. Bajaj, MD
10400 E. Alameda Avenue
Denver, CO 80247-5104
D

Lucy M. Budde, MD
8383 W. Alameda Avenue
Lakewood, CO 80226-3007
D

Kenneth R. Cohen, MD
30940 Stagecoach Blvd., Ste 270-E
Evergreen, CO 80439-7984
D ❤

Ifeoma R. Eleazu, MD
10400 E. Alameda Avenue
Denver, CO 80247-5104
D

No photo available

James E. Franzbrooke, DO
10465 Melody Drive, Ste 306
Northglenn, CO 80234-4126
D

Scott I. Barclay, MD
7030 S. Yosemite Street
Centennial, CO 80112-2026
D

Joseph E. Burchenal, MD
1000 Southpark Drive
Littleton, CO 80120-5654
❤

Richard E. Collins, MD
1000 Southpark Drive
Littleton, CO 80120-5654
❤

Bernard E. Engel, MD
8461 Turnpike Drive, Ste 200
Westminster, CO 80031-4379
D ❤

Steven P. Friedrich, MD
1000 Southpark Drive
Littleton, CO 80120-5654
❤

Thomas J. Bartlett, MD
2222 N. Nevada Avenue, Ste 2010
Colorado Springs, CO 80907- 6849
D

John R. Burchinal, DO
7701 Sheridan Boulevard
Arvada, CO 80003-2605
D

Colin H. Combs, MD
4803 Ward Road
Wheat Ridge, CO 80033-1902
D

Julia A. Essig, MD
1420 W. Midway Boulevard
Broomfield, CO 80020-2090
D

John H. Gale, MD
1823 Ford Street
Golden, CO 80401-2464
D ❤

Werner K. Baumgartner, MD
165 S. Union Boulevard, Ste 800
Lakewood, CO 80228-2213
D ❤

Laird P. Cagan, MD
2030 W. Mountain View Ave, Ste 400
Longmont, CO 80501-3182
D

Lillian M. Coppola, MD
1375 E. 20th Avenue
Denver, CO 80205-5423
D

Mary E. Faini, MD
1309 Sunset Street
Longmont, CO 80501-3215
D

No photo available

David F. Garfias, MD
4350 Wadsworth Blvd., Ste 425
Wheat Ridge, CO 80033-4652
D

Robert B. Beeson, MD
280 Exempla Circle
Lafayette, CO 80026-3370
D

Thomas D. Cain, MD
1601 Lowell Boulevard
Denver, CO 80204-1559
D

Anna F. Cosyleon, MD
5555 E. Arapahoe Road
Centennial, CO 80122-2312
D

Andrea M. Fedele, MD
5257 S. Wadsworth Boulevard
Littleton, CO 80123-2228
D

Dennis P. Genereux, MD
5555 E. Arapahoe Road
Centennial, CO 80122-2312
D

"Studies show incentives lower overall costs, improve quality of care. . ."
Joanne Wojcik, Business Insurance. July,21, 2008


J. Michael Gibson, MD
11245 Huron Street
Westminster, CO 80234
D

No photo available
Philip M. Henbest, DO
9981 N. Washington, Ste 21
Thornton, CO 80229-2165
D ❤


Ingrid M. Justin, MD
11245 Huron Street
Westminster, CO 80234
D


Arthur Levene, MD
1000 Southpark Drive
Littleton, CO 80120-5654
❤


Kimberly M. Mayhew, MD
580 Mohawk Drive
Boulder CO 80303-3712
D


Michelle L. Glasgow, MD
11245 Huron Street
Westminister, CO 80234
D


Felipe Hernandez, MD
2955 South Broadway
Englewood, CO 80113-1526
D


Dimitri A. Kaufman, MD
1000 Southpark Drive
Littleton, CO 80120-5654
❤


Timothy M. Lewan, MD
12207 Pecos Street, Ste 800
Westminster, CO 80234-3425
D


Daniel S. McAninch, MD
11245 Huron Street
Westminster, CO 80234
D


David L. Glasscock, MD
7950 Kipling Street, Ste 101
Arvada, CO 80005-3925
D ❤


James R. Hill, MD
1420 W. Midway Boulevard
Broomfield, CO 80020-2090
D ❤


Karen M. Kelly, MD
2801 Youngfield Street, Ste 120
Golden, CO 80401 0208
D ❤


A. Christine Linares, MD
10103 Ridge Gate Parkway, Ste G-23
Lone Tree, CO 80124-5524
D


Douglas G. McCallum, MD
425 S. Cherry Street, Ste 510
Denver, CO 80246-1200
D ❤


Dianne K. Glenn, MD
11245 Huron Street
Westminster, CO 80234
D

No photo available
Mark W. Hinman, MD
1350 Tulip Street
Longmont, CO 80501-3140
D


Tanya Michelle Kern, MD
8383 W. Alameda Avenue
Lakewood, CO 80226-3007
D

No photo available
Judith A. Lindauer-Gosik, MD
8383 W. Alameda Avenue
Lakewood, CO 80226-3007
D


Anne B. McLean, MD
30940 Stagecoach Blvd. Ste 270-E
Evergreen, CO 80439-7984
D ❤


B. Kevin Gordon, MD
16290 E. Quincy Avenue
Aurora, CO 80015-1594 D


Tracy S. Hofeditz, MD
325 S. Teller Street, Ste 250
Lakewood, CO 80226-7429
D ❤


Joseph H. Kim, MD
175 S. Union Boulevard, Ste 350
Colorado Springs, CO 80910-3146
D


David H. Lookner, MD
580 Mohawk Drive
Boulder, CO 80303-3712
D


Joyce E. Michael, DO
8890 N. Union, Ste 200
Colorado Springs, CO 80920-2701
D


Thomas B. Gottlieb, MD
7950 Kipling Street, Ste 101
Arvada, CO 80005-3925
❤


Gregory F. Hollar, DO
7030 S. Yosemite Street
Centennial, CO 80112-2026
D


Dale J. Kliner, MD
13650 E. Mississippi Ave., Ste 100-B
Aurora, CO 80012-3572
D


Luis H. Lorenzo, MD
5730 Ward Road, Ste 102
Arvada, CO 80002-1300
D


Michael K. Miller, MD
4803 Ward Road
Wheat Ridge, CO 80033-1902
D


Kenneth W. Hahn, DO
3655 E. 104th Avenue
Thornton, CO 80233-4469
D


Mark S. Hoskinson, MD
580 Mohawk Drive
Boulder, CO 80303-3712
D


David R. Kresin, MD
2955 South Broadway
Englewood, CO 80113-1526
D

No photo available
Kevin T. Lutz, MD
3955 E. Exposition Avenue, Ste 104
Denver, CO 80209-5031
D ❤


Patrick A. Miller, MD
175 S. Union Boulevard, Ste 350
Colorado Springs, CO 80910-3146
D


Lauren J. Halby, MD
4760 Flintridge Drive, Ste 200
Colorado Springs, CO 80918-4266
D


Sarah Lynn Huffman, MD
8890 N. Union Blvd., Ste 200
Colorado Springs, CO 80920-2701
D


Mark M. Laitos, MD
1309 Sunset Street
Longmont, CO 80501-3215
D


Lee A. MacDonald, MD
1000 Southpark Drive
Littleton, CO 80120-5654
❤


Richard A. Miller, MD
5115 Fontaine Boulevard, Ste 100
Fountain, CO 80817-1061
D


Steve D. Haley, MD
2345 Bent Way
Longmont, CO 80503-7614
D


Michael R. Iannotti, MD
1022 Depot Hill Road
Broomfield, CO 80020-1068
D


Huong M. Lam, MD
5555 E. Arapahoe Road
Centennial, CO 80122-2312
D


J. Dugan Mahoney, MD
2345 Bent Way
Longmont, CO 80503-7614
D


Andrew W. Mitchell, MD
16222 Highway 24, Ste 220
Woodland Park, CO 80863-8763
D


Douglas C. Hammerstrom, MD
5731 Silverstone Terrace, Ste 100
Colorado Springs, CO 80919-3594
D


Martha A. Ives, MD
5730 Ward Road, Ste 102
Arvada, CO 80002-1300
D


Anita K. Lane, MD
2222 N. Nevada Avenue, Ste 2010
Colorado Springs, CO 80907-6849
D


Amy O. Maiocco, MD
2575 Spruce Street
Boulder, CO 80302-3806
D


Morris Moore, MD
580 Mohawk Drive
Boulder, CO 80303-3712
D


R. Scott Hammond, MD
8601 Turnpike Drive, Ste 200
Westminster, CO 80031-7044
D ❤


Warren P. Jaeger, MD
550 Highway 150
Monument, CO 80132-9122
D


Theodore S. Lawson, MD
8890 N. Union Boulevard, Ste 200
Colorado Springs, CO 80920-2701
D

No photo available
Matthew T. Maloney, MD
5257 S. Wadsworth Boulevard
Littleton, CO 80123-2228
D


Barbara A. Morris, MD
3235 Mill Vista Road
Highlands Ranch, CO 80129-2440
D


Michelle C. Harris, MD
280 Exempla Circle
Lafayette, CO 80026-3370
D


Thomas M. Jeffers, MD
7950 Kipling Street, Ste 101
Arvada, CO 80005-3925
❤


Alan Lazaroff, MD
1601 Lowell Boulevard
Denver, CO 80204-1559
D


Stacey L. Mason, MD
8383 W. Alameda Avenue
Lakewood, CO 80226-3007
D


Suzanne C. Nash, MD
3655 E. 104th Avenue
Thornton, CO 80233-4469
D


Mark P. Hayman, MD
5257 S. Wadsworth Boulevard
Littleton, CO 80123-2228
D


Thomas G. Johnson, DO
5115 Fontaine Boulevard, Ste 100
Fountain, CO 80817-1061
D


Amy L. Lemke, MD
16290 E. Quincy Avenue
Aurora, CO 80015-1594


Richard A. Mathe, MD
1000 Southpark Drive
Littleton, CO 80120-565
❤


Aimee S. Nelson, MD
8585 W. 14th Avenue, Ste B
Lakewood, CO 80215-4860
D ❤


John R. Hedberg, MD
165 S. Union Boulevard, Ste 800
Lakewood, CO 80228-2213
D ❤


Cynthia L. Justice, MD
1375 E. 20th Avenue
Denver, CO 80205-5423
D

No photo available
David M. Leon, MD
2020 Wadsworth Boulevard, Ste 18-B
Lakewood, CO 80214-5730
D ❤


Kathleen W. Mayer, MD
5257 S. Wadsworth Boulevard
Littleton, CO 80123-2228
D


Dawn M. Newell, MD
9285 Hepburn Street
Highlands Ranch, CO 80129-2262
D

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Colorado Bridges to Excellence recognized physicians

continued from page 20

John D. Norton, MD
2222 N. Nevada Avenue, Ste 2010
Colorado Springs, CO 80907-6849
D

No photo available

John E. O'Connor, MD
205 S. Garrison Street
Lakewood, CO 80226-2843
D

Atsuko J. Ohtake, MD
8383 W. Alameda Avenue
Lakewood, CO 80226-3007
D

Rafael J. Olivares, MD
255 Union Boulevard, Ste 300
Lakewood, CO 80228-1834
D

Amy J. Owen, DO
6140 Tutt Boulevard, Ste 200
Colorado Springs, CO 80923-3576
D

Robert D. Pane, MD
580 Mohawk Drive
Boulder, CO 80303-3712
D

John M. Panozzo, MD
7550 W. Yale Ave. Bld B, Ste 100
Denver, CO 80227-3460
❤

Mark F. Pattridge, MD
17601 S. Golden Road
Golden, CO 80401-2633
D ❤

Manoj V. Pawar, MD
1400 E. Boulder Street
Colorado Springs, CO 80909-5533
D

Michael J. Perlman, MD
580 Mohawk Drive
Boulder, CO 80303-3712
D

No photo available

Henry Manning Pickett, MD
1805 Kipling Street, Ste 100
Lakewood, CO 80215-2871
D ❤

Lisa K. Price, MD
1601 Lowell Boulevard
Denver, CO 80204-1559
D

No photo available

Carla J. Rail, MD
8550 W. 38th Avenue, Ste 206
Wheat Ridge, CO 80033-6053
D

Carol J. Ramatowski, DO
7850 N. Vance Drive, Ste 100
Arvada, CO 80003-2127
D

Janisse Cayanan Rears, DO
7701 Sheridan Boulevard
Arvada, CO 80003-2605
D

Jay Reinsma, MD
3550 Lutheran Parkway, Ste G-20
Wheat Ridge, CO 80033-6016
D

Harold G. Richardson, MD
17601 S. Golden Road
Golden, CO 80401-2633
D ❤

Leanne L. Richardson, MD
11550 Sheridan Boulevard
Broomfield, CO 80020-3311
D ❤

Vernon D. Ritzman, MD
8550 W. 38th Avenue, Ste 206
Wheat Ridge, CO 80033-6053
D

Susan I. Roach, MD
1309 Sunset Street
Longmont, CO 80501-3215
D

Susan J. Robertson, MD
1420 W. Midway Boulevard
Broomfield, CO 80020-2090
D ❤

Philip J. Rosenblum, MD
3655 E. 104th Avenue
Thornton, CO 80233-4469
D

Eric J. Rydberg, MD
1707 Cole Boulevard, Ste 150
Golden, CO 80401-3255
❤

E. Mark Sarinopoulos, MD
1420 W. Midway Boulevard
Broomfield, CO 80020-2090
D

Michael A. Schindel, MD
7444 W. Alaska Drive, Ste 200
Lakewood, CO 80226-3331
D

Harvey A. Schuchman, MD
1000 Southpark Drive
Littleton, CO 80120-5654
❤

Veronica A. Serna-Eberhart, MD
2222 N. Nevada Avenue, Ste 2010
Colorado Springs, CO 80907-6849
D

Patrick B. Shahan, MD
550 Highway 150
Monument, CO 80132-9122
D

Zachary L. Shpall, MD
4301 Lowell Boulevard
Denver, CO 80211-1654
D ❤

Heather A. Shull, MD
8383 W. Alameda Avenue
Lakewood, CO 80226-3007
D

Linda M. Silveira, MD
6025 Delmonico Drive
Colorado Springs, CO 80919-2251
D

Robert M. Sims II, MD
6169 S. Balsam Way, Ste 250
Littleton, CO 80123-3063
D

Robin L. Smith, DO
8601 Turnpike Drive, Ste 200
Westminster, CO 80031-7044
D ❤

Michael W. Spangler, DO
175 S. Union Boulevard, Ste 350
Colorado Springs, CO 80910-3146
D

Michael E. Staab, MD
1000 Southpark Drive
Littleton, CO 80120-5654
❤

No photo available

John K. Stanton, DO
12004 Melody Drive
Westminster, CO 80234-4212
D

Richard M. Stiphout, MD
10400 E. Alameda Avenue
Denver, CO 80247-5104
D

Helen M. Story, MD
6169 S. Balsam Way, Ste 250
Littleton, CO 80123-3063
D

Thomas G. Swanson, MD
5555 E. Arapahoe Road
Centennial, CO 80122-2312
D

Franklin T. Thom, MD
2345 Bent Way
Longmont, CO 80503-7614
D

Michelle T. Thomas, MD
425 S. Cherry Street, Ste 510
Denver, CO 80246-1200
❤

Ronnie G. Thomas, MD
8383 W. Alameda Avenue
Lakewood, CO 80226-3007
D

Albert G. Ting, MD
14701 E. Exposition Avenue
Aurora, CO 80012-2623
D

Karyl M. VanBenthuysen, MD
1000 Southpark Drive
Littleton, CO 80120-5654
❤

Janna D. Ver Miller, MD
1601 Lowell Boulevard
Denver, CO 80204-1559
D

Deanne L. Veselka, MD
5115 Fontaine Blvd., Ste 100
Fountain, CO 80817-1061
D

Robert K. Von Rueden, MD
5257 S. Wadsworth Blvd.
Littleton, CO 80123-2228
D

David Wallack, MD
1601 Lowell Boulevard
Denver, CO 80204-1559
D

Jonathan E. Walter, MD
9950 W. 80th Avenue, Ste 23
Arvada, CO 80005
❤

Donald G. Ward, DO
7600 Shaffer Parkway
Littleton, CO 80127-3004
D

Craig W. Watson, MD
1823 Ford St.
Golden, CO 80401-2464
❤

Deborah E. Way, MD
5730 Ward Road, Ste 102
Arvada, CO 80002-1300
D

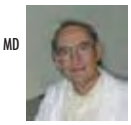
Terri B. Weber, MD
6140 Tutt Blvd., Ste 200
Colorado Springs, CO
80923-3576
D

Brian K. Wegner, MD
8585 W. 14th Avenue, Ste B-2
Lakewood, CO 80215-4860
D ❤

Peter Weiss, MD
1601 Lowell Boulevard
Denver, CO 80204-1559
D

Jason R. West, DO
3550 Lutheran Parkway,
Ste G-20
Wheat Ridge, CO 80033-6016
D

James J. Williams, MD
5075 Lincoln Street
Denver, CO 80216-2015
D



Robert N. Williams, MD
1707 Cole Boulevard, Ste 150
Golden, CO 80401-3255
D ❤

Peter M. Wolsko, MD
280 Exempla Circle
Lafayette, CO 80026-3370
D

Camilla S. Wright, MD
9285 Hepburn Street
Highlands Ranch, CO 80129-2262
D

No photo available

George H. Yamasaki, MD
8550 W. 38th Avenue, Ste 206
Wheat Ridge, CO 80033-6053
D

Christine A. Yang, MD
1375 E. 20th Avenue
Denver, CO 80205-5423
D

James M. Yeash, DO
11550 Sheridan Boulevard
Broomfield, CO 80020-3311
❤

Michael A. Yoesel, MD
8890 N. Union Boulevard, Ste 200
Colorado Springs, CO 80920-2701
D

Paula J. ZegobHartmann, MD
2345 Bent Way
Longmont, CO 80503-7614
D

No photo available

Dennis P. Zoglo, MD
8758 Wolff Court, Ste 200
Westminster, CO 80031-6904
D ❤

When it comes to health care
"Geography is Destiny"

What does this mean? Geography is destiny?? These are the famous words of Dr. Jack Wennberg. He is a physician and a researcher who spent almost all of his career at Dartmouth. He studies claims from the Medicare database: the largest medical claims databases that we have in this country. After spending over 30 years looking at the information, he makes this famous statement: Geography is destiny.

Dr. Wennberg has discovered that Medicare spends two or even three times more money per patient in some parts of the country than other places for identical clinical conditions. Because he looks at hundreds of cases he can be sure that not one place actually has the "sickest" patients. As he studies the claims of Medicare patients who have died from cancer or heart disease, he knows they were all very sick. And, because they died, we know that the services they received did not serve to prolong their lives.

So why are some places much more costly to Medicare (to you, the taxpayer) than others? Dr. Wennberg has found that the more expensive places in the country have more hospital beds, and more ICU beds. These areas have more specialists, too. The patients are more likely to be seeing many doctors at a time, getting many more tests, spending more days in the hospital, and are more likely to die in intensive care beds. Unfortunately, these patients have also reported that they are less satisfied with the health care system as compared to patients in the rest of the country, too.

Getting appropriate amounts of services and spending the right amount of money is easier said than done. But today, the allocation of services is haphazard and the quality of care is mostly untested and unreported. In some parts of the country, Medicare patients with congestive heart failure have a 20 percent chance of being readmitted to the hospital within 30 days of discharge. Other regions have only a 13 percent readmission rate.

Are there answers?

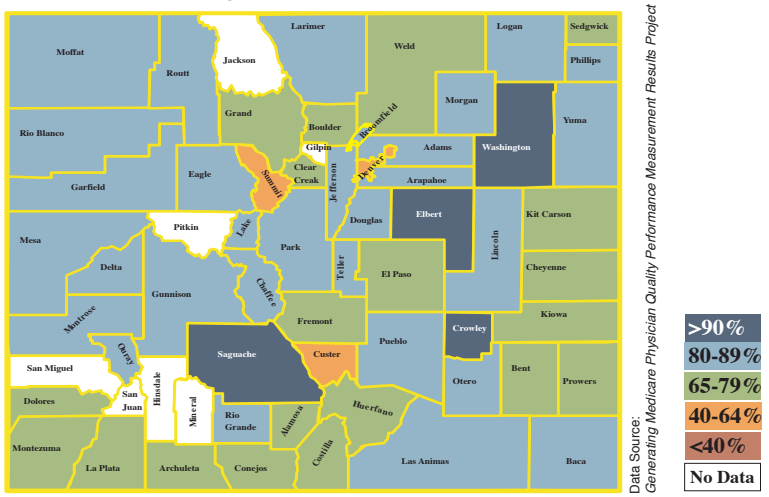
Working with patients to provide them with the information they need to choose the care they want is one important step. Coordinating care between the hospital, the specialists and the primary physician can lead to fewer useless tests and a reduction in medication prescribing errors. Frail patients who are discharged home from the hospital can be assisted to manage their medical condition with family and community support. ☐

Want to see more of Dr. Wennberg's work?

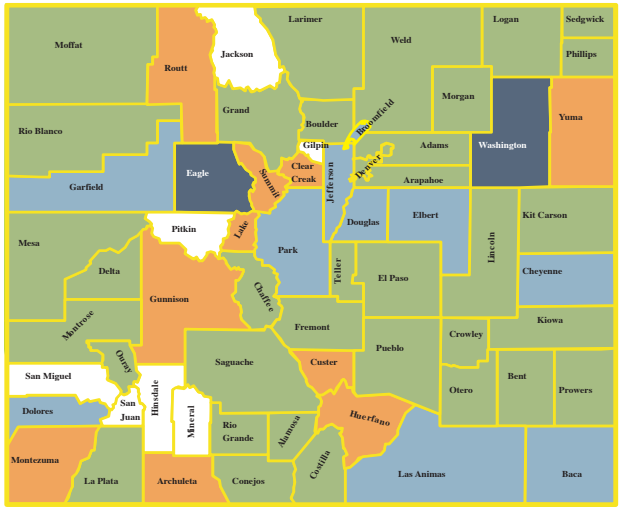
Go to www.dartmouthatlas.org for more information, and to create your own reports.

The Colorado Value Exchange
What are these maps?

HbA1c screening rate for persons with diabetes



LDL screening rate for persons with diabetes



In 2008, under the leadership of the Colorado Business Group on Health, a number of Colorado's leading organizations were granted the status of a "Chartered Value Exchange". This group is now known as the Colorado Value Exchange. It is dedicated to working together to acquire and publish health care information. The information will be used to improve the quality of healthcare that we receive.

The Agency for Healthcare Research and Quality then provided information about the care that Medicare patients receive. It sent information that revealed how often Medicare patients with diabetes received recommended tests from their physicians. For more information about these tests, and to see how often commercially insured patients received their recommended tests, see pages 32 through 34.

Why are there so many differences? Researchers often call this "unexplained variation". It is a fancy way to say that we don't have all the reasons that some Medicare patients are getting the tests they need, and others are not. But now that we know about this variation, we can undertake actions to determine what the problems and solutions might be in each community.

Members of the Colorado Value Exchange:

Colorado Association of Health Plans
Colorado Business Group on Health
Colorado Clinical Guidelines Collaborative
Colorado Department of Health Care Policy and Financing
Colorado Foundation for Medical Care
Colorado Hospital Association
Colorado Regional Health Information Organization
Colorado Medical Society
Rocky Mountain Health Care Coalition
Rocky Mountain Multiple Sclerosis Center
Employer Members:
Colorado Springs Utilities
Colorado Springs School District 11
State of Colorado

Patient ratings on doctors are now available

The Colorado Business Group on Health proudly announced its participation in a new survey that allows patients to rate their own physicians. Results for 475 primary care physicians in the Denver/Boulder area are now available.

What was this survey all about?
Patients rated their doctors on several important factors, including how well their doctors listen and explain things, make themselves available for appointments and care when needed, arrange to have helpful and courteous office staff, and whether they would recommend their doctor to family and friends.

What did the doctors think about the survey?
The Colorado Medical Society and the Colorado Association of Family Physicians supported this survey. Together, they sent a letter to area physicians about this project. The physicians who have talked to us about this survey were pleased with this project because:

- It is a way to compare their results to other physicians
- Physicians can use these results to improve their relationship with their patients
- It used a nationally endorsed survey, developed by experts
- It is conducted by non-profit groups, including the Colorado Business Group on Health and its partner, the Consumers' CHECKBOOK/Center for the Study of Services, a nonprofit consumer organization.

Where can I get more information on Denver/ Boulder area physicians?
The reports on doctors are available free to the public at a CHECKBOOK website (www.checkbook.org/patientcentral) and also through the website of the Colorado Business Group on Health (www.coloradohealthonline.org),

There are increasing numbers of websites that collect and report patient ratings of doctors. But most have fewer than five reports on most physicians. At many of these websites, it is possible for anyone (even a doctor or the doctor's staff) to "stuff the ballot box." In contrast, these reports are based on statistically valid numbers of completed surveys. In Colorado, we received an average of 48 completed patient surveys per doctor.

CHECKBOOK's website also has extensive advice, videos, checklists, and other resources to help doctors improve and to help patients do their part—especially in communicating with physicians. CHECKBOOK expects that, as the survey spreads around the country, physician leaders will put together quality improvement programs, as they are doing in the pilot communities.

Comments of Healthcare Leaders on the CHECKBOOK Initiative
"With its new large-scale survey of patients' experiences with physicians, CHECKBOOK has shown that this effort is feasible and that its results can help consumers make informed decisions and improve quality," said **Carolyn Clancy, M.D., Director of the U.S. Agency for Healthcare Research and Quality**. "I am particularly pleased that this survey is based on questions and procedures that were scientifically developed by AHRQ-funded researchers."

"Consumers want information to help them find a good doctor," said **John Rother, Executive Vice-president for Policy of AARP**. "AARP commends CHECKBOOK and the participating health plans for making available reliable information on how patients experience care in their doctors' offices. Now that CHECKBOOK has successfully demonstrated it is feasible and economical to obtain this information, we hope that health plans in other parts of the country also will offer consumers this type of information about their doctors."

"This initiative provides important information to patients about care they can expect to receive in a particular physician's practice," said **Colorado Medical Society President Ben Vernon, M.D.** "Transparency in the healthcare system is paramount. We expect this information not only to be helpful to the patients, but also to all of the physicians. After all, achieving good outcomes for our patients is about working together."

"Patient- and family-centered care is a key goal of healthcare reform, and we can't get there without asking patients about their experience receiving care," said **Debra Ness, President of the National Partnership for Women and Families**. "Patient experience surveys, like the one piloted by CHECKBOOK, can help patients make better healthcare choices and help healthcare providers make needed improvements. Patient experience surveys play a central role in both the assessment and improvement of care by asking the right questions and providing critically important information for both patients and providers." □

A Check-Up on Your Doctor:

What Consumers Can Find Out

Visit our Websites Go to the physician survey at www.ColoradoHealthOnline.org
OR
www.checkbook.org/patientcentral

Results are available on 475 physicians who provide primary care in the Denver/Boulder area. We hope to repeat this survey in the future, and provide information about more Colorado physicians. Colorado consumers can use this site to find out about their own doctor or find a new one.

How to use the Public website

Go to the first web page, entitled "Overall Rating of Doctor."

The diagram shows key features of the "Overall Rating of Doctor" web page.

You can search for a doctor in many ways:

Alphabetically, by last name

By specialty (either Family Medicine, General Practice, Geriatric Medicine, and Internal Medicine)

By zip code

On the main page, there is a list of:

physician names, address, specialty, distance from the zip code you input, and the overall rating of each physician.

SAMPLE PAGE:

What patients say about their doctors

Doctor's name Click on name for full report on doctor.	How many patients answered the survey about this doctor	Specialty	Miles from the zip code you entered	Overall rating of this doctor and either the word "Better, Average or Lower" as compared to the other doctors in the community (0 – 100)
Dr. Mark Laitos 1309 Sunset St Longmont, CO	52	Family Medicine	30.67 miles	86 Better

On this page you can select up to four physicians and then click on "compare" to view a page that sets the scores of those four doctors next to each other.

Or,

You can click on one doctor's name, and view more detail about that doctor on this page.

SAMPLE PAGE:

Dr. Mark Laitos

		Dr. Laitos	Community Average	Doctor's score and whether statistically Better or Lower than community average (0 – 100)
Overall rating of Doctor	Dr. Laitos	86	79	Better
Overall, being able to get appointments and care when needed	Dr. Laitos	78	81	
Overall, how well doctor communicates	Dr. Laitos	95	91	Better
When doctor ordered a blood test, x-ray, or other test, how often someone from doctor's office followed up to give you those results	Dr. Laitos	94	90	
Overall, helpfulness and courtesy of office staff . . .	Dr. Laitos	90	86	Better
Would you recommend this doctor to your family and friends (% definitely yes)	Dr. Laitos	97	91	Better
Number Responding		52		

How do consumers rate my health plan?

Two ways of looking at this satisfaction survey to help you make wise choices.

The CAHPS satisfaction survey shows how consumers rate the services they receive from their health plan. The Consumer Assessment of Healthcare Providers and Systems (CAHPS) survey measures patients' experiences with health care. These surveys cover topics that are important to consumers, such as customer service and the accessibility of services. Health care organizations, public and private purchasers, consumers, and researchers can use CAHPS results to:

- Assess the patient-centeredness of care;
- Compare and report on performance; and
- Improve the quality of care. ☐

About the Satisfaction Survey

- The survey is conducted by independent certified research firms that select the sample and compile the results.
- The 2,700 Coloradans surveyed were enrolled in their plan for at least one year.

● Significantly higher than the average of participating Colorado health plans

◑ Similar to the average of participating Colorado health plans

○ Significantly lower than the average of participating Colorado health plans

	❶ Overall rating of the health plan	❷ Overall rating of health care	❸ Finding or understanding information from written materials or internet	❹ Getting help when you called healthplan customer service	❺ Ease of getting needed care, tests, or treatment	❻ Getting to see a specialist	❼ Handling medical claims quickly	❽ Handling medical claims correctly
HMO								
Aetna Health Inc.	◑	◑	◑	◑	◑	◑	○	○
CIGNA HealthCare of Colorado	◑	◑	●	◑	◑	◑	◑	◑
HMO Colorado Subsidiary of Anthem Blue Cross and Blue Shield	◑	◑	◑	◑	◑	◑	●	◑
Kaiser Permanente	◑	◑	◑	◑	◑	○	◑	◑
PacifiCare of Colorado A UnitedHealthcare Company	◑	◑	◑	◑	◑	●	◑	◑
UnitedHealthcare of Colorado	○	◑	◑	◑	◑	◑	◑	◑
PPO								
Aetna Health Inc.	◑	◑	◑	◑	◑	◑	◑	◑
CIGNA HealthCare of Colorado	◑	◑	◑	◑	◑	◑	◑	◑
UnitedHealthcare of Colorado	◑	◑	◑	◑	◑	◑	◑	◑

About the charts

- These charts compare healthplan scores to the average of all participating Colorado health plans: Aetna Health Inc., CIGNA HealthCare of Colorado, HMO Colorado, Kaiser Permanente, PacifiCare of Colorado, and United Healthcare.
- The test of statistically significant differences in the satisfaction survey summary is based on comparison of selected categories to the average of all reporting HMO and PPO plans.
- For questions one and two, the response scale is 0-10. A response of 10 equals "the best," and the sum of the responses in the "8, 9, 10" categories are used as the basis for comparison of significant differences.
- For questions three through eight the comparison is to the "always" plus "usually" categories.

These bar charts give you another way of looking at the satisfaction survey information.
• Row totals may not equal 100 due to rounding.

❶ Overall rating of the health plan

	10	8-9	5-7	0-4
HMO				
Aetna Health Inc.	14%	42%	37%	7%
CIGNA HealthCare of Colorado	15%	50%	30%	6%
HMO Colorado	13%	48%	33%	6%
Kaiser Permanente	17%	42%	36%	5%
PacifiCare of Colorado	17%	43%	36%	4%
UnitedHealthcare	8%	47%	38%	8%
PPO				
Aetna Health Inc.	13%	46%	33%	8%
CIGNA HealthCare of Colorado	14%	48%	32%	6%
UnitedHealthcare	13%	49%	34%	4%
All HMO & PPO plan average	14%	46%	34%	6%

0-10 scale with 10 = best rating possible

❷ Overall rating of health care

	10	8-9	5-7	0-4
HMO				
Aetna Health Inc.	24%	52%	21%	4%
CIGNA HealthCare of Colorado	23%	50%	24%	3%
HMO Colorado	28%	48%	21%	3%
Kaiser Permanente	24%	49%	24%	3%
PacifiCare of Colorado	23%	52%	22%	3%
UnitedHealthcare	21%	53%	24%	2%
PPO				
Aetna Health Inc.	24%	51%	23%	2%
CIGNA HealthCare of Colorado	26%	52%	19%	2%
UnitedHealthcare	16%	55%	26%	2%
All HMO & PPO plan average	24%	51%	23%	3%

0-10 scale with 10 = best rating possible

❸ Finding or understanding information from written materials or internet

	always	usually	sometimes	never
HMO				
Aetna Health Inc.	15%	41%	35%	8%
CIGNA HealthCare of Colorado	21%	56%	20%	4%
HMO Colorado	17%	44%	31%	8%
Kaiser Permanente	21%	49%	26%	5%
PacifiCare of Colorado	14%	45%	34%	7%
UnitedHealthcare	15%	49%	33%	4%
PPO				
Aetna Health Inc.	13%	46%	38%	3%
CIGNA HealthCare of Colorado	23%	50%	24%	3%
UnitedHealthcare	18%	48%	31%	2%
All HMO & PPO plan average	17%	48%	30%	5%

"Always" is better

❹ Getting help when you called healthplan customer service

	always	usually	sometimes	never
HMO				
Aetna Health Inc.	46%	31%	18%	5%
CIGNA HealthCare of Colorado	37%	41%	19%	3%
HMO Colorado	44%	30%	18%	8%
Kaiser Permanente	41%	31%	20%	9%
PacifiCare of Colorado	39%	32%	23%	7%
UnitedHealthcare	39%	30%	21%	10%
PPO				
Aetna Health Inc.	45%	28%	23%	3%
CIGNA HealthCare of Colorado	39%	38%	19%	4%
UnitedHealthcare	37%	38%	23%	3%
All HMO & PPO plan average	41%	33%	20%	6%

"Always" is better

❺ Ease of getting needed care, tests, or treatment

	always	usually	sometimes	never
HMO				
Aetna Health Inc.	52%	34%	13%	2%
CIGNA HealthCare of Colorado	50%	42%	6%	2%
HMO Colorado	62%	28%	7%	2%
Kaiser Permanente	56%	32%	10%	2%
PacifiCare of Colorado	61%	29%	8%	3%
UnitedHealthcare	58%	31%	9%	2%
PPO				
Aetna Health Inc.	63%	26%	9%	2%
CIGNA HealthCare of Colorado	52%	40%	6%	2%
UnitedHealthcare	62%	28%	9%	1%
All HMO & PPO plan average	58%	32%	9%	2%

"Always" is better

❻ Getting to see a specialist

	always	usually	sometimes	never
HMO				
Aetna Health Inc.	51%	37%	10%	2%
CIGNA HealthCare of Colorado	51%	33%	14%	3%
HMO Colorado	54%	27%	15%	4%
Kaiser Permanente	37%	36%	17%	10%
PacifiCare of Colorado	48%	40%	9%	3%
UnitedHealthcare	54%	34%	12%	1%
PPO				
Aetna Health Inc.	53%	34%	11%	2%
CIGNA HealthCare of Colorado	44%	38%	16%	1%
UnitedHealthcare	47%	38%	13%	2%
All HMO & PPO plan average	48%	35%	13%	3%

"Always" is better

❼ Handling medical claims quickly

	always	usually	sometimes	never
HMO				
Aetna Health Inc.	43%	36%	15%	6%
CIGNA HealthCare of Colorado	50%	36%	10%	3%
HMO Colorado	51%	40%	7%	2%
Kaiser Permanente	53%	29%	13%	4%
PacifiCare of Colorado	43%	42%	11%	4%
UnitedHealthcare	44%	45%	7%	4%
PPO				
Aetna Health Inc.	44%	42%	12%	3%
CIGNA HealthCare of Colorado	45%	39%	11%	4%
UnitedHealthcare	41%	45%	12%	2%
All HMO & PPO plan average	45%	40%	11%	3%

"Always" is better

❽ Handling medical claims correctly

	always	usually	sometimes	never
HMO				
Aetna Health Inc.	44%	35%	19%	3%
CIGNA HealthCare of Colorado	56%	33%	11%	1%
HMO Colorado	57%	33%	9%	1%
Kaiser Permanente	59%	27%	11%	4%
PacifiCare of Colorado	59%	32%	7%	2%
UnitedHealthcare	59%	33%	6%	2%
PPO				
Aetna Health Inc.	53%	32%	13%	2%
CIGNA HealthCare of Colorado	53%	34%	13%	1%
UnitedHealthcare	52%	35%	12%	1%
All HMO & PPO plan average	54%	33%	11%	2%

"Always" is better

Give your health plan a check-up

Organizations collect information on how well health plans serve their members. Here are two ways to review the performance of your health plan.

Accreditation

NCQA Status of Colorado Health Plans

Many large companies, such as General Motors and IBM require their HMO health plans to be accredited by the National Committee for Quality Assurance. NCQA performs a rigorous, in-depth evaluation of the plan by a team of physicians and quality experts.

Why should I care?

NCQA accredited plans must show that the plan improves the health of enrollees through their quality programs and performance scores (see pages 25-40). Who accredits health plans? NCQA is an independent, nonprofit organization whose mission is to assess and report health plan quality. Visit the NCQA website at http://www.ncqa.org for more information.

Health Plan	Status	Accredited
Aetna Health Inc. HMO	Excellent	Accredited to 4/11/2011
Aetna Health Inc. PPO	Full	Accredited to 12/11/2010
CIGNA HealthCare of Colorado HMO	Excellent	Accredited to 2/27/2010
CIGNA HealthCare of Colorado PPO	Full	Accredited to 12/24/2010
Denver Health Medical Plan		Not Accredited
HMO Colorado Anthem Blue Cross and Blue Shield subsidiary	Excellent	Accredited to 4/26/2010
Anthem BCBS of Colorado PPO		Not accredited
Kaiser Permanente	Excellent	Accredited to 1/05/2010
PacifiCare of Colorado HMO/PPO A UnitedHealthcare Company	Excellent	Accredited to 5/22/2011
Rocky Mountain Health Plans HMO		Not accredited
Rocky Mountain Health Plans PPO		Not accredited
UnitedHealthcare HMO	Excellent	Accredited to 5/15/2011
UnitedHealthcare PPO		Not accredited

Source: National Committee for Quality Assurance as of June 1, 2009

HMO consumer complaints for 2009

The consumer complaint ratios of insurance companies and health carriers illustrate how some companies generate more complaints per $1 million of premium than others. The ratios provide helpful information to consumers interested in evaluating their insurance companies and/or health carriers, and to state regulators in targeting companies requiring closer review. Consumers are cautioned against relying only on complaint ratios when evaluating companies. Premiums, benefits, financial condition, and level of service should all be considered.

HMO Company Name	Market Share	Premium ($ Millions)	Total Complaints	Confirmed Complaints	Complaint Ratio
Aetna Health Inc.	2.17%	$153.14	9	9	0.06
CIGNA Healthcare - Centennial State, Inc.	0.16%	$11.63	1	1	0.09
CIGNA Healthcare of Colorado, Inc.	0.66%	$46.50	3	1	0.06
Denver Health Medical Plan, Inc.	0.63%	$44.63	2	2	0.04
HMO Colorado, Inc. (HMO Blue)	3.40%	$240.47	8	8	0.03
Humana Health Plan, Inc.	0.50%	$35.03	3	3	0.09
Kaiser Foundation Health Plan of CO	18.81%	$1,329.60	79	56	0.06
PacifiCare of Colorado, Inc. (United Healthcare)	2.27%	$160.54	12	10	0.07
Rocky Mountain HMO, Inc.	2.54%	$179.78	16	13	0.09
UnitedHealthcare of Colorado, Inc.	12.38%	$875.57	100	77	0.11

Source: Colorado Division of Insurance as of July 1, 2009

Please Note: The companies included in the standard reports are responsible for reconciling documented complaints and reporting discrepancies to the Division of Insurance. However, not all of the companies have performed this review. Therefore, these reports may contain unverified information.

Does your health plan measure up?

Important aspects of healthcare quality are measured in different ways. Use this page as a reference on how to interpret the charts and graphs in this publication. You will also find descriptions of the tools used to rate health plan quality. ☐

HEDIS Scores (Pages 29-40)

HEDIS (Healthcare Effectiveness Data and Information Set) is a tool used by more than 90 percent of America's health plans to measure performance on important dimensions of care and service. There are 71 HEDIS measures. Health plans use HEDIS results themselves to see where they need to focus their improvement efforts. HEDIS is designed to provide YOU with the information needed to reliably compare the performance of Colorado health plans.

Use of Imaging Studies for Low Back Pain

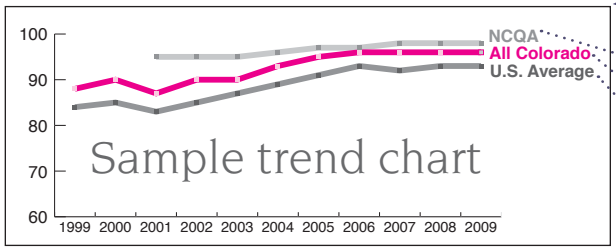
Healthy People 2010 goal

The percentage of members with a primary diagnosis of low back pain who did not have an imaging study (plain X-ray, MRI, CT scan) within 28 days of diagnosis

HMO	
Aetna Health Inc.	83%
CIGNA HealthCare of Colorado	82%
Denver Health Medical Plan	70%
HMO Colorado	84%
Kaiser Permanente	85%
PacifiCare of Colorado	81%
UnitedHealthcare	78%
NCQA Benchmark	81%

Name of measure

Healthy People 2010 goals are national goals for the year 2010 for many prevention efforts. These goals were created by a team of experts working with the Public Health Service in 1999. Look for these national goals in the cancer screening, infant immunization and prenatal care sections of the publication to see how Colorado measures up to these goals.
For more information on the Health People 2010 goals, visit: http://www.healthypeople.gov/.



This mock example demonstrates how a trend chart for the Low Back Pain measure might have looked over time.

Trend charts show change over time for Colorado and the nation. Is Colorado doing a better job at getting top quality healthcare? Not always. Are we "best of the best"? Not always. We can still improve, and should!

NCQA Benchmark defines the best quality in the nation: plans performing at or above the 90th percentile nationally that report their company data to the National Committee for Quality Assurance (NCQA).

All Colorado is the average of all Colorado Health Maintenance Organization health plans.

U.S. Average is the average of all Health Maintenance Organization scores reported to NCQA.

Use of Imaging Studies for Low Back Pain

This has been added as a new HEDIS measure beginning in 2008. Low back pain is the most common and expensive work related disability in the United States. It affects two thirds of all adults at some point during their lives.

When a patient's low back pain cannot be attributed to potential serious spinal or other pathology, there is a poor correlation of x-ray findings with low back problems.

According to the American College of Radiology, uncomplicated acute low back pain is a benign, self limited condition that warrants no imaging studies (e.g., X-ray, MRI, CT scan). Most patients return to their usual activities within 30 days. This measure reports whether imaging studies (plain X-ray, MRI, CT Scan) are overused in evaluating members 18 to 50 years of age with acute low back pain.

This HEDIS measure is reported as an inverted rate. A higher score indicates appropriate treatment of low back.

Important Facts about Back Pain:

- One-half of all working Americans admit to having back pain symptoms each year.
- Back pain is one of the most common reasons for missed work. In fact, back pain is the second most common reason for visits to the doctor's office, outnumbered only by upper-respiratory infections.
- Most cases of back pain are mechanical or non-organic—meaning they are not caused by serious conditions, such as inflammatory arthritis, infection, fracture or cancer.
- Americans spend at least $50 billion each year on back pain—and that's just for the more easily identified costs.
- Experts estimate that as many as 80% of the population will experience a back problem at some time in our lives.

Tips to Prevent Back Pain:

- Maintain a healthy diet and weight. • Remain active—under the supervision of your doctor of chiropractic. • Avoid prolonged inactivity or bed rest.
- Warm up or stretch before exercising or other physical activities, such as gardening.
- Maintain proper posture. • Wear comfortable, low-heeled shoes.
- Sleep on a mattress of medium firmness to minimize any curve in your spine.
- Lift with your knees, keep the object close to your body, and do not twist when lifting.
- Quit smoking. Smoking impairs blood flow, resulting in oxygen and nutrient deprivation to spinal tissues.
- Work with your doctor of chiropractic to ensure that your computer workstation is ergonomically correct.

How to read the HEDIS charts on pages 29 - 40

Breast and Cervical Cancer Screening

When you find out can be as important as what you find out.

Today, women have a much better chance against cancer than what they may think. In fact, nearly 100 percent of women who are diagnosed with breast or cervical cancer early, live to survive it. While the best way to find cancer early is to have routine breast and cervical cancer screenings, many roadblocks are preventing women from receiving them. Annual mammography combined with clinical breast exams and appropriate and timely follow-up treatment for women age 50 and older can reduce breast cancer mortality by about one-third. Almost all cervical cancers are caused by the HPV virus. Women between the ages of nine and 26 are eligible for the HPV vaccine, which protects against the types of HPV that most often cause cervical cancer. Most insurance plans offer these important screenings at a very low cost to members. ☐

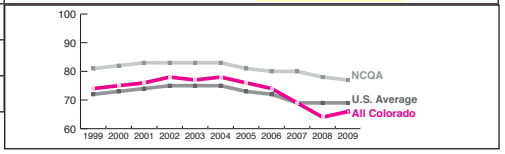
Breast Cancer Screening

Percentage of members being tested

Healthy People 2010 Goal-70% for women over age 40

HMO	
Aetna Health Inc.	66%
CIGNA HealthCare of Colorado	69%
Denver Health	47%
HMO Colorado	71%
Kaiser Permanente	74%
PacifiCare of Colorado	64%
UnitedHealthcare	69%
NCQA Benchmark	77%

PPO* PPO sample rates may be lower than HMO due to differing methods of data collection	
Aetna Health Inc.	67%
CIGNA HealthCare of Colorado	65%
HMO Colorado	67%
UnitedHealthcare	67%
NCQA Benchmark	66%



Key to trend chart on page 28

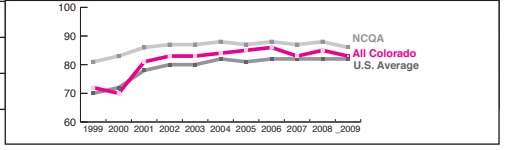
Cervical Cancer Screening

Percentage of members being tested

Healthy People 2010 Goal-90% for women over age 18

HMO	
Aetna Health Inc.	81%
CIGNA HealthCare of Colorado	91%
Denver Health Medical Plan	76%
HMO Colorado	81%
Kaiser Permanente	83%
PacifiCare of Colorado	82%
UnitedHealthcare	86%
NCQA Benchmark	86%

PPO* PPO sample rates may be lower than HMO due to differing methods of data collection	
Aetna Health Inc.	79%
CIGNA HealthCare of Colorado	75%
HMO Colorado	70%
UnitedHealthcare	78%
NCQA Benchmark	74%



Key to trend chart on page 28

According to Susan G. Komen for the Cure, the top four reasons women don't get mammograms include:

1 Financial issues
2 Lack of insurance
3 Fear of the diagnosis and treatment
4 Getting time off from work

Why are regular breast cancer screenings so important?

- When breast cancer is found early, there is a 98 percent survival rate.
- More than 70 percent of women diagnosed with breast cancer have no identifiable risk factors.
- A mammogram can detect breast cancer one to four years before a woman can feel physical symptoms.
- Annual mammography can reduce mortality from breast cancer by about one-third in women age 50 and older.

Why are regular cervical cancer screenings so important?

- When cervical cancer is found early, there is a 92 percent survival rate.
- Cervical cancer mortality has declined by more than 70 percent in the United States since adoption of the Pap smear test in the 1940s.
- A Pap test can find abnormal cervical cells years before any cancer actually exists.
- Early on, cervical cancer usually doesn't cause any symptoms, so without a test there is no way of knowing it's there.

WOMEN'S WELLNESS connection

Connect. Get checked. Be well.

There is no reason to wait.

A recession takes a toll on women's health. According to the U.S. Department of Health and Human Services, 45 percent of all women, and 58 percent of Hispanic women, have failed to seek medical care in the past year because the cost was too high. But, for women who are recently unemployed or have limited insurance to pay for exams, there are resources available. Women's Wellness Connection, a program administered by the Colorado Department of Health and Environment, provides free breast and cervical cancer-screenings to low-income, uninsured and underserved women at more than 120 providers across Colorado. Women's Wellness Connection helps qualified women through the entire screening process to offer hope, comfort and quality care. And, women who are diagnosed with cancer through the Women's Wellness Connection program may be eligible to receive treatment services through Medicaid. No matter what women find in routine breast and cervical cancer screenings, it's important that they find out.

To be eligible, women must: • Be ages 40 to 64.

- Be legal residents of the United States.
- Live in Colorado.
- Have limited or no insurance to pay for these screenings.
- Meet low income qualifications.

To find out if they are eligible and to make an appointment, women should call 1-866-951-WELL (9355) or visit www.WomensWellnessConnection.org.

Colorectal Cancer Screening

COLORECTAL CANCER
Preventable. Treatable. Beatable!

Don't just sit on the problem…

Colorectal cancer is the second most common cause of cancer death in the United States. The American Cancer Society estimated more than 148,600 people will be diagnosed with colorectal cancer in 2008 and nearly 50,000 people will have died. Colorectal cancer occurs when small growths called polyps begin to grow abnormally. While not all polyps develop into colorectal cancer, nearly all forms of colorectal cancer are caused by polyps. One in three U.S. adults over the age of 65 have polyps which makes colorectal cancer screening extremely important. If every Coloradan over age 50 was screened for polyps, over half of the deaths from colorectal cancer could be prevented. Since the incidence of colorectal cancer is very high, and the screening rate is low, it has become imperative to significantly increase the number of people being tested. This is the second year that Colorado health plans have publicly reported their colorectal cancer screening rates. See how they scored below: ☐

Colorectal cancer screening

Healthy People 2010 Goal—
50% for adults aged 50 and over

How often should you be screened for colorectal cancer?

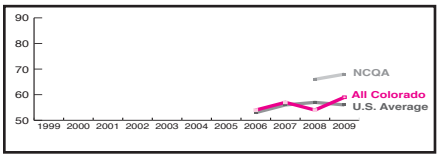
If you are 50 years of age or older, call your doctor to get one of the following screening options:

- Sigmoidoscopy—every 5 years
- Colonoscopy—every 10 years
- Fecal occult blood test (FOBT) should be performed annually

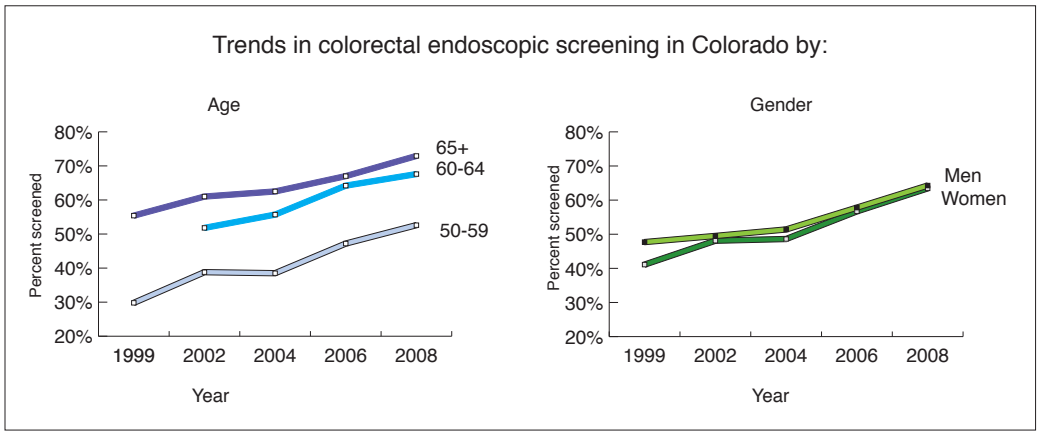
Percentage of members being tested

HMO	
Aetna Health Inc.	55%
CIGNA HealthCare of Colorado	57%
Denver Health Medical Plan	51%
HMO Colorado	60%
Kaiser Permanente	69%
PacifiCare of Colorado	65%
UnitedHealthcare	56%
NCQA Benchmark	68%
PPO* PPO sample rates may be lower than HMO due to differing methods of data collection.	
Aetna Health Inc.	48%
CIGNA HealthCare of Colorado	44%
HMO Colorado	29%
UnitedHealthcare	47%
NCQA Benchmark	45%

*PPO sample rates are calculated using claims data only, while some HMO meaures use a mix of chart and medical record review data allowing for more representative information.



Key to trend chart on page 28



Take Note:

- In the U.S. the lifetime risk of developing colorectal cancer:
  5.9% for men
  5.5% for women.
- 80% of people with colon cancer have no family history
- Symptoms are uncommon in the early stages of colorectal cancer; 70% of cases occur in people without any symptoms
- Over 90% of those diagnosed with colorectal cancer at an early stage survive more than five years
- After age 50 the chance of developing colon cancer doubles every ten years
- Top Cancers in Colorado 1998-2002 (by incidence):
  1. Breast
  2. Prostate
  3. Lung
  4. Colorectal
  5. Melanoma

Key Words:

Colon: also called the large intestine or bowel

Polyp: a small growth inside the colon

Colonoscopy: Test that allows the doctor to look inside your full colon and remove any polyps

Sigmoidoscopy: a test that allows the doctor to look at the lower part of your colon

FOBT-Fecal Occult Blood Test: a test used to find hidden blood in your stool

Are you living with diabetes?

Over 23.6 million Americans have diabetes

The Diabetes Epidemic

The number of people with diabetes in this country is continuing to rise. More than 23.6 million Americans are currently living with the disease. In Colorado alone, the number of patients with diabetes is in excess of 220,867. Much of the burden of illness and cost of diabetes treatment is attributed to potentially preventable long-term complications such as heart disease, blindness, kidney disease, and stroke. In order to prevent these long-term complications, diabetics should measure and control their HbA1c, blood sugar, cholesterol, and blood pressure along with getting regular eye exams and urine tests. While the majority of the burden for getting these tests is placed on the individual, health plans should be engaging the patients, providing reminders, and decreasing barriers for their diabetic enrollees. One way to measure health plan effectiveness in caring for patients with diabetes is by looking at the scores on pages 33 and 34. □

Know your ABC's of Diabetes and Heart Health

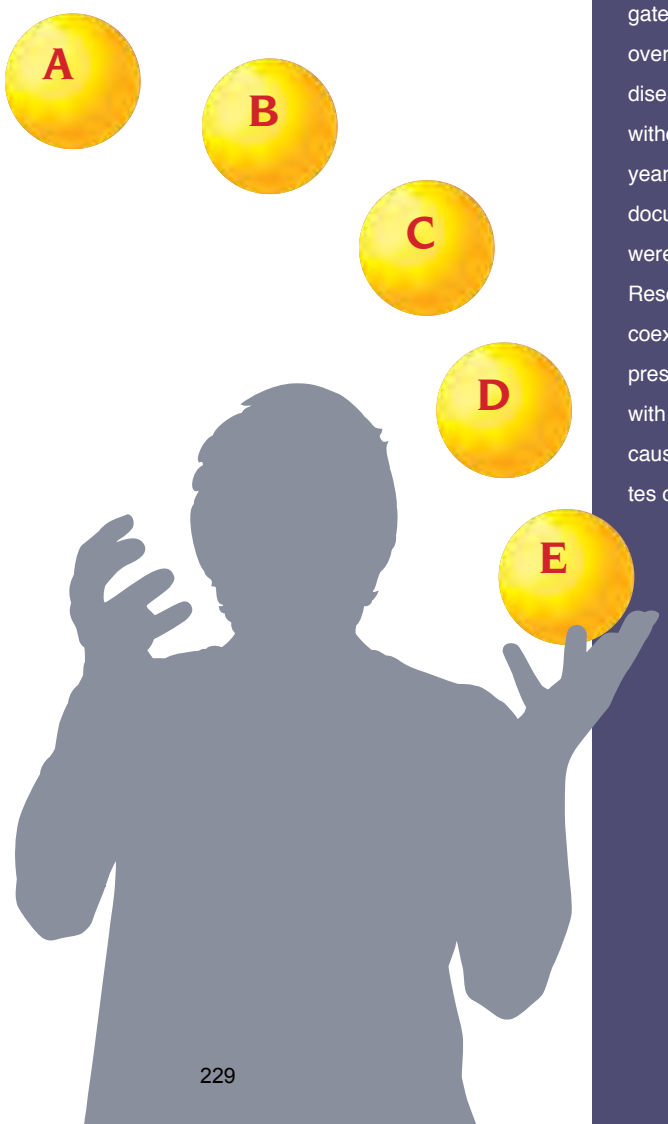
HbA1c (diabetes only blood test)
- Test results are expressed as a percentage, with four to six percent being normal in most cases. Diabetes patients should aim for less than seven percent
- Those with their diabetes under control can test their HbA1c levels less frequently. However, all diabetes patients should have their levels checked at least twice a year

Blood pressure
- See your doctor to have your blood pressure tested at least once every two years or more frequently if you have high blood pressure
- To prevent high blood pressure, exercise often, avoid high sodium foods, drink alcoholic beverages in moderation and find healthy ways to manage stress

Cholesterol
- Everyone over 20 years old should have their cholesterol checked at least once every five years
- To maintain healthy cholesterol levels, eat foods low in saturated fats. Your total daily fat intake should fall between 20-35 percent of your daily caloric intake

Diet
- A healthy diet is rich in fruit and vegetables, whole grains, lean meats and poultry
- In maintaining a healthy diet, eat fish at least twice a week and limit dairy intake to fat-free and one percent fat dairy products
- Limit foods which are high in fat or sugar and those foods which contain hydrogenated oils

Exercise
- To increase your everyday exercise, take these small steps:
  - ➤ Use the stairs, instead of the elevator or escalator
  - ➤ Park farther away from the office or store
  - ➤ Work in the garden, clean out the garage or mow the lawn
  - ➤ Go for short evening walks
  - ➤ With your physician's permission participate in activities like brisk walking, aerobics classes, swimming, running or jumping rope three to four times a week, for 30 minutes at a time.
- To know more, contact: your doctor, health plan web sites, Colorado Diabetes Association or the Colorado Heart Association.



Take Note:

• Diabetes is the sixth leading cause of death from disease in the United States

• Those living with diabetes have an increased chance of suffering from serious health complications

• Preventive care practices have been shown to be effective in decreasing both the incidence and progression of diabetes related complications

A study published in the journal Diabetes Care in 2005 investigated the effect of depression on overall mortality and coronary heart disease mortality in adults with and without diabetes. During the eight year study, 1,925 deaths were documented, 522 of those deaths were caused by heart disease. Researchers concluded that the coexistence of diabetes and depression is significantly associated with increased risk of death from all causes, beyond having just diabetes or just depression alone.

continued from page 32

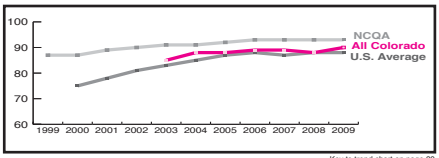
HbA1c — blood sugar screening

Why do I need an HbA1c test?

■ An HbA1c test shows the doctor how much glucose is sticking to the hemoglobin in your body's red blood cells. This test will give your physician a good idea of what your blood sugar levels are on a typical day. Based on individualized assessment, a hemoglobin A1c level less than 7% is a reasonable target for many patients, but not for all.

■ Diabetes patients who maintain near normal HbA1c levels can gain an average of five extra years of life.

HbA1c levels should be tested at least twice annually.



Key to trend chart on page 28

Percentage of members with diabetes who are being tested

HMO	
Aetna Health Inc.	88%
CIGNA HealthCare of Colorado	91%
Denver Health Medical Plan	87%
HMO Colorado	92%
Kaiser Permanente	93%
PacifiCare of Colorado	88%
UnitedHealthcare	88%
NCQA Benchmark	93%

PPO* PPO sample rates may be lower than HMO due to differing methods of data collection.

Aetna Health Inc.	83%
CIGNA HealthCare of Colorado	85%
HMO Colorado	81%
UnitedHealthcare	78%
NCQA Benchmark	80%

*PPO sample rates are calculated using claims data only, while some HMO meaures use a mix of chart and medical record review data allowing for more representative information.

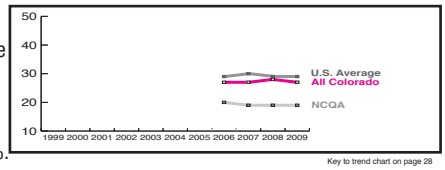
HbA1c - blood sugar control (lower percentage is better)

Now that I know my blood tests results, what should else should I know?

■ Lower percentages are better in this chart.

■ Every one percent reduction in HbA1c levels results in a 40% reduction in risk of developing eye, kidney, and nerve disease.

■ Lowering your blood sugar reduces the risk of eye disease by 78%, the risk of kidney disease by 54% and the risk of nerve disease by 69%.



Key to trend chart on page 28

Percentage of members with diabetes who have poor blood sugar control (HbA1c greater than 9)

HMO	
Aetna Health Inc.	28%
CIGNA HealthCare of Colorado	23%
Denver Health Medical Plan	30%
HMO Colorado	24%
Kaiser Permanente	33%
PacifiCare of Colorado	26%
UnitedHealthcare	28%
NCQA Benchmark	19%

PPO Results are not available

Eye exams for people with diabetes

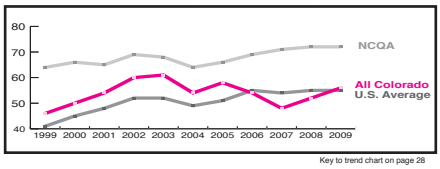
Why do I need an eye exam?

■ A dilated retinal examination (as opposed to a "vision test") by an eye specialist can detect eye complications related to diabetes.

■ Diabetes is the leading cause of blindness in people ages 20 to 74.

■ Annually 12,000 to 24,000 new cases of blindness can be attributed to diabetes.

Eye exams should be done annually.



Key to trend chart on page 28

Percentage of members with diabetes who are being tested

HMO	
Aetna Health Inc.	52%
CIGNA HealthCare of Colorado	51%
Denver Health Medical Plan	45%
HMO Colorado	62%
Kaiser Permanente	68%
PacifiCare of Colorado	61%
UnitedHealthcare	51%
NCQA Benchmark	72%

PPO* PPO sample rates may be lower than HMO due to differing methods of data collection.

Aetna Health Inc.	31%
CIGNA HealthCare of Colorado	30%
HMO Colorado	27%
UnitedHealthcare	30%
NCQA Benchmark	36%

*PPO sample rates are calculated using claims data only, while some HMO meaures use a mix of chart and medical record review data allowing for more representative information.

Urine tests for people with diabetes

Why should I get a urine test?

Too much glucose in your blood is very hard on your kidneys. After a number of years, high blood glucose can cause the kidneys to stop working. If your kidneys stop working, you will need dialysis (using a machine or special fluids to clean your blood) or a kidney transplant.

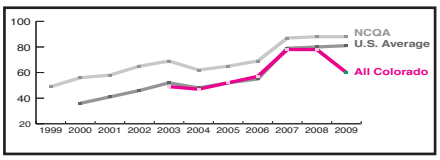
Make sure you have the following tests at least once a year to make sure your kidneys are working well:

• A urine test for protein, called the micro albumin test

• A blood test for creatinine

Some types of blood pressure medicines can help prevent kidney damage. Ask your doctor whether these medicines could help you.

Diabetes is the leading cause of kidney failure; it accounts for 45% of new kidney failure cases.



Key to trend chart on page 28

Percentage of members with diabetes who are being tested

HMO	
Aetna Health Inc.	82%
CIGNA HealthCare of Colorado	83%
Denver Health Medical Plan	83%
HMO Colorado	86%
Kaiser Permanente	93%
PacifiCare of Colorado	83%
UnitedHealthcare	81%
NCQA Benchmark	88 %

PPO* PPO sample rates may be lower than HMO due to differing methods of data collection.

Aetna Health Inc.	65%
CIGNA HealthCare of Colorado	74%
HMO Colorado	62%
UnitedHealthcare	64%
NCQA Benchmark	66%

*PPO sample rates are calculated using claims data only, while some HMO meaures use a mix of chart and medical record review data allowing for more representative information.

Is treating your diabetes becoming too costly?

Consumer Reports Best Buy Drugs will help you talk to your doctor about prescription drugs, and find the most effective and safe drugs that also give you the best value for your health care dollar. Consumer Best Buy Drugs aims to improve access to needed medicines for tens of millions of Americans—because they lack insurance coverage for prescription drugs; because the prices of many medicines today are so high; and because many consumers and physicians may not be aware of proven and affordable alternatives.

For more information on this program visit
www.ConsumerReportsHealth.org/BestBuyDrugs

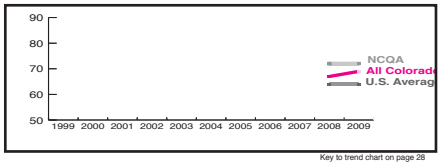
This is a public service notice.

Controlling high blood pressure

Why should I be concerned about my blood pressure?

■ Seventy percent of people with diabetes also have high blood pressure. High blood pressure raises the risk of heart disease.

■ If you control your blood pressure, you reduce your risk for diabetes related problems.



Key to trend chart on page 28

Percentage of members with diabetes whose blood pressure is controlled (under 140/90)

HMO	
Aetna Health Inc.	69%
CIGNA HealthCare of Colorado	70%
Denver Health Medical Plan	64%
HMO Colorado	75%
Kaiser Permanente	75%
PacifiCare of Colorado	61%
UnitedHealthcare	68%
NCQA Benchmark	72%

PPO **Results are not available**

Cholesterol — lipid screening rate

Why should I have my cholesterol levels tested?

■ Most people with diabetes also have high levels of LDL or "bad" cholesterol.

■ LDL deposits cause blockage inside blood vessel walls, which can lead to heart disease and stroke.

If you have not been tested for LDL levels it may be a good idea to do so. Early detection can help you manage your lifestyle risks so you can start protecting yourself from coronary heart disease.

LDL screening should be completed annually for people ages 18-75 with diabetes.

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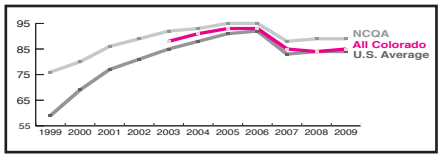


Key to trend chart on page 28

Percentage of members with diabetes who are being tested

HMO	
Aetna Health Inc.	86%
CIGNA HealthCare of Colorado	86%
Denver Health Medical Plan	77%
HMO Colorado	85%
Kaiser Permanente	89%
PacifiCare of Colorado	87%
UnitedHealthcare	83%
NCQA Benchmark	89%

PPO* PPO sample rates may be lower than HMO due to differing methods of data collection.

Aetna Health Inc.	77%
CIGNA HealthCare of Colorado	78%
HMO Colorado	74%
UnitedHealthcare	73%
NCQA Benchmark	75%

*PPO sample rates are calculated using claims data only, while some HMO meaures use a mix of chart and medical record review data allowing for more representative information.

Cholesterol—lipid control

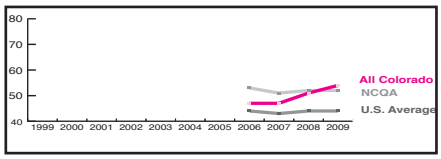
Why should I worry about controlling my cholesterol levels?

■ Controlling LDL levels in type 2 diabetes patients can reduce stroke, small blood vessel damage, and premature death.

■ Cholesterol control is reached through diet modifications and medication.

■ Improved control of cholesterol can reduce cardiovascular complications by 20 to 50 percent.

Is your LDL level below 100mg/dL? Talk to your physician about more ways to control your cholesterol levels.



Percentage of members whose cholesterol level (LDL-C) controlled with a lipid of less than 100

HMO	
Aetna Health Inc.	51%
CIGNA HealthCare of Colorado	57%
Denver Health Medical Plan	44%
HMO Colorado	54%
Kaiser Permanente	69%
PacifiCare of Colorado	51%
UnitedHealthcare	52%
NCQA Benchmark	52%

PPO **Results are not available**

Heart Health

More than 80.7 million Americans in 2005 had one or more forms of cardiovascular disease. So it comes as no surprise that cardiovascular diseases are the single largest killer of Americans and Coloradans, alike. In fact, every 26 seconds, an American suffers a coronary event and about every minute, an American dies from one. In Colorado alone, someone dies every hour from cardiovascular disease.

There are a few small steps you can take to reduce your risk of heart disease:

don't smoke,

control your blood pressure,

exercise regularly, and

eat a healthy diet.

Like diabetes, we can measure the effectiveness of health plans in managing their enrollees with cardiovascular disease by looking at the scores below. □

Advice to quit smoking

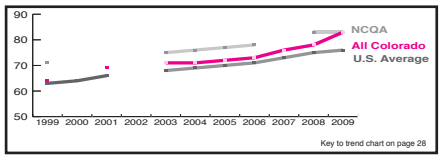
Why should I quit?

■ Over 23 percent of Americans 18 and older are current smokers. In Colorado, nearly 19 percent of those 18 or older are smokers

■ According to the Centers for Disease Control, 70 percent of smokers report that they would like to quit smoking, but only 62 percent of them received advice to quit from their healthcare provider

■ Smoking-induced conditions are some of the most preventable causes of death in the U.S. 440,000 current or former smokers die prematurely each year

■ The number of smoking related deaths is greater than the number of deaths caused by HIV, illegal drug use, alcohol use, motor vehicle injuries, suicides, and murders, combined.



Key to trend chart on page 28

Percentage of members who smoke who are advised to quit

HMO	
Aetna Health Inc.	81%
CIGNA HealthCare of Colorado	NA
Denver Health Medical Plan	NA
HMO Colorado	NA
Kaiser Permanente	84%
PacifiCare of Colorado	96%
UnitedHealthcare	80%
NCQA Benchmark	83%

PPO Results are not available

TakeNote:

COLORADO QUITLINE 800.639.QUIT

Smokers have two to three times the risk of suffering coronary heart disease.

In Colorado, someone dies every hour due to cardiovascular disease.

Thinking about quitting? Call the Quitline number.

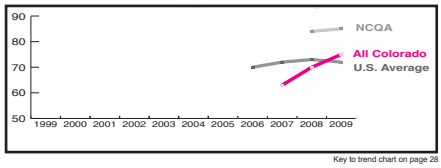
This is a public service notice.

Persistence of beta-blocker medication

Why is it important to continue taking beta-blockers following a heart attack?

■ First time heart attack survivors used a beta-blocker for 20 years following their heart attack, an estimated 62,000 heart attacks would have been prevented and 72,000 lives from heart disease would be saved

■ Adherence to beta-blockers is important for decreasing the risk of a second heart attack, but many patients stop taking their medication within one year of the initial heart attack



Key to trend chart on page 28

Percentage of members hospitalized after surviving a heart attack who persistently received a beta-blocker medication for six months after discharge

HMO	
Aetna Health Inc.	NA
CIGNA HealthCare of Colorado	NA
Denver Health Medical Plan	NA
HMO Colorado	73%
Kaiser Permanente	85%
PacifiCare of Colorado	80%
UnitedHealthcare	65%
NCQA Benchmark	85%

PPO* PPO sample rates may be lower than HMO due to differing methods of data collection.

Aetna Health Inc.	75%
CIGNA HealthCare of Colorado	60%
HMO Colorado	50%
UnitedHealthcare	74%
NCQA Benchmark	69%

*PPO sample rates are calculated using claims data only, while some HMO meaures use a mix of chart and medical record review data allowing for more representative information.

22%
of all deaths in Colorado
are caused by heart disease.

1.1 million
Heart attacks occur in the
U.S. annually.

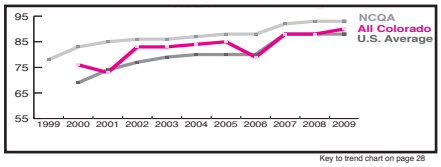
What you need to know about cholesterol

There are two major types of cholesterol. LDL is commonly referred to as "bad" cholesterol. LDL has been linked to the formation of blockages or plaques which narrow the arteries, raise blood pressure, and make the heart work harder. HDL on the other hand, is referred to as "good" cholesterol because it prevents formation of plaques within the arteries. High LDL levels coupled with low HDL levels is a strong indicator of cardiovascular disease, which can lead to increased risk of heart attack or stroke.

Cholesterol screening

Why is cholesterol screening and control important?

- LDL deposits block the flow of blood through blood vessels, which causes heart disease and stroke
- Over 100 million people in this country have cholesterol levels higher than desirable
- Research found that for every 10 point drop in cholesterol, the risk of heart disease dropped by 15-20 percent



Key to trend chart on page 28

Percentage of members with heart conditions who received cholesterol screening

HMO	
Aetna Health Inc.	91%
CIGNA HealthCare of Colorado	91%
Denver Health Medical Plan	NA
HMO Colorado	90%
Kaiser Permanente	95%
PacifiCare of Colorado	86%
UnitedHealthcare	89%
NCQA Benchmark	93%

PPO* PPO sample rates may be lower than HMO due to differing methods of data collection.

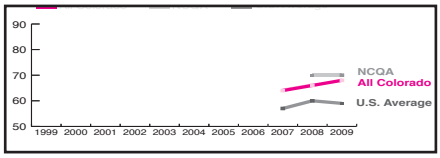
Aetna Health Inc.	80%
CIGNA HealthCare of Colorado	78%
HMO Colorado	80%
UnitedHealthcare	70%
NCQA Benchmark	75%

*PPO sample rates are calculated using claims data only, while some HMO meaures use a mix of chart and medical record review data allowing for more representative information.

Cholesterol control after heart attack

Why is cholesterol control important?

- Elevated LDL cholesterol is a major risk factor for heart disease.
- Aggressive lowering of cholesterol after a cardiac event can result in a 31 percent reduction of risk of heart attacks.
- Desirable cholesterol level—total cholesterol is less than 200 mg/dL; LDL is lower than 100 mg/dL.



Key to trend chart on page 28

Percentage of members with heart conditions whose LDL cholesterol level is controlled

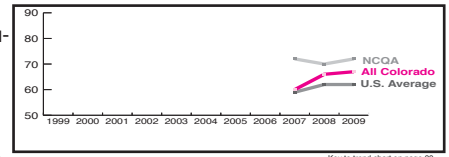
HMO	
Aetna Health Inc.	62%
CIGNA HealthCare of Colorado	70
Denver Health Medical Plan	NA
HMO Colorado	72
Kaiser Permanente	79%
PacifiCare of Colorado	64%
UnitedHealthcare	62%
NCQA Benchmark	70%

PPO Results are not available

Controlling high blood pressure

Why is it necessary to control high blood pressure?

- Hypertension (high blood pressure) doubles the lifetime risk of stroke
- High blood pressure also increases the risk of heart disease and other cardiovascular diseases
- In 2005 the death rates per 100,000 population from high blood pressure were 15.8 for white males, 52.1 for black males, 15.1 for white females and 40.3 for black females.



Key to trend chart on page 28

Percentage of hypertensive adults age 18 to 85 whose blood pressure is controlled (under 140/90)

HMO	
Aetna Health Inc.	66%
CIGNA HealthCare of Colorado	70%
Denver Health Medical Plan	58%
HMO Colorado	74%
Kaiser Permanente	69%
PacifiCare of Colorado	66%
UnitedHealthcare	69%
NCQA Benchmark	72%

PPO Results are not available

Prenatal & Postpartum Care

First Steps

Ten percent of Colorado babies are born with a low birth weight; this is higher than the national average of 9.2 percent. To prevent low birth weight and other complications, proper prenatal care provided by your doctor should begin in early pregnancy. Health plans should also emphasize the importance of prenatal care to prospective parents. Health plan effectiveness in regard to prenatal care can be measured using the scores below. ☐

Timeliness of prenatal care

Healthy People 2010 Goal — 90%

Why is early prenatal care important?

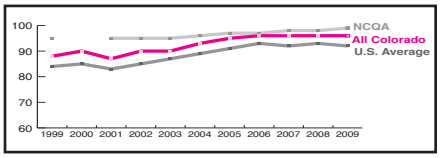
- Proper care provided by your doctor, beginning in early pregnancy, is the best preventive medicine for a healthy baby.
- Proper prenatal care ensures that the mother is living a healthy lifestyle, has a proper diet and is taking vitamins for best outcomes in birth weight and overall health of the baby.
- Comprehensive prenatal care has been shown to reduce low birth weight incidence and infant mortality.
- The chance of death for a low birth weight baby is 40 times higher in the first four months of life than for an average weight baby.
- Women who receive no prenatal care are three to four times more likely to die from complications related to pregnancy than women who received prenatal care.

Percentage of members receiving timely prenatal care

HMO

Aetna Health Inc.	94%
CIGNA HealthCare of Colorado	97%
Denver Health Medical Plan	96%
HMO Colorado	98%
Kaiser Permanente	95%
PacifiCare of Colorado	96%
UnitedHealthcare	96%
NCQA Benchmark	99%

PPO Results are not available



Key to trend chart on page 28

The eight weeks after giving birth is a period of physical, emotional and social changes for the mother during a time when she is also adjusting to caring for her new baby. The American College of Obstetricians and Gynecologists recommends that women see their health care provider at least once between four and six weeks after giving birth so that they can be evaluated and receive any necessary assistance. The first postpartum visit includes a physical examination and also offers an opportunity for the health care provider to answer parents' questions, provide family planning guidance and nutrition counseling.

Postpartum care

Why is postpartum care important?

- Proper care provided by your doctor, beginning in early pregnancy, is the best preventive medicine for a healthy baby.
- Proper prenatal care ensures that the mother is living a healthy lifestyle, has a proper diet and is taking vitamins for best outcomes in birth weight and overall health of the baby.
- Comprehensive prenatal care has been shown to reduce low birth weight incidence and infant mortality.
- Women who receive no prenatal care are three to four times more likely to die from complications related to pregnancy than women who received prenatal care.

Postpartum Care between 21 and 56 days of delivery

HMO

Aetna Health Inc.	89%
CIGNA HealthCare of Colorado	88%
Denver Health Medical Plan	69%
HMO Colorado	86%
Kaiser Permanente	90%
PacifiCare of Colorado	79%
UnitedHealthcare	86%
NCQA Benchmark	90%

PPO* PPO sample rates may be lower than HMO due to differing methods of data collection.

Aetna Health Inc.	54%
CIGNA HealthCare of Colorado	55%
HMO Colorado	50%
UnitedHealthcare	56%
NCQA Benchmark	46%

*PPO sample rates are calculated using claims data only, while some HMO meaures use a mix of chart and medical record review data allowing for more representative information.

Take Note Do you know a child or pregnant woman who needs health insurance? They may qualify for Child Health Plan Plus. Visit http://www.cchp.org/ or for more information or call 303-692-2229 or 1-800-688-7777.

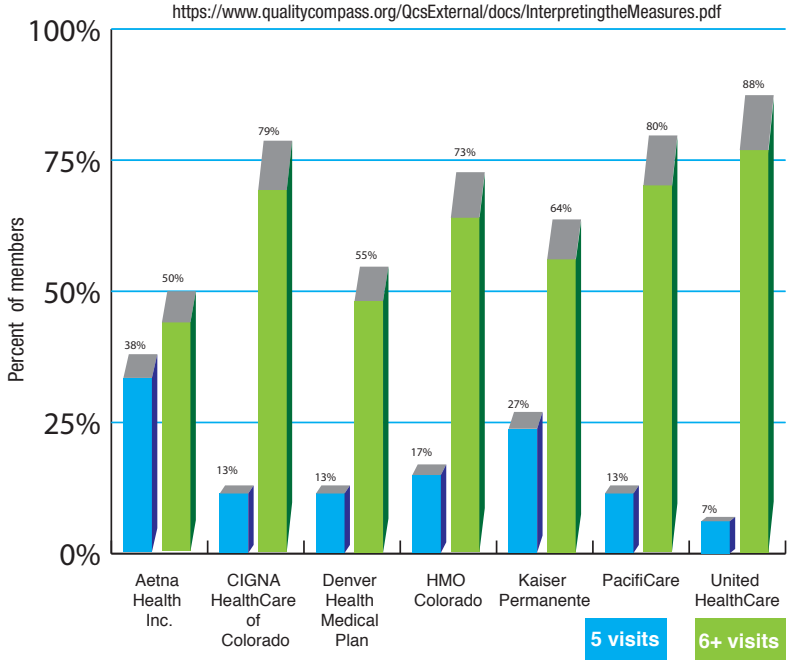
Infant Care

Childhood is a time of rapid growth and change, and it is important to monitor your child's development during the first years of life. Even if children are not ill, they should see a healthcare provider on a regular basis.

Well-child visits can help children stay healthy because each visit includes a complete physical examination to assess growth and development and to detect potential problems early. You will be asked specific questions about how your child is doing. As a parent, you are the most important source of information about your child's health so well-child visits are key opportunities to communicate with your child's health-care provider. During your visit, expect to receive information about normal development, nutrition, sleep, safety, immunizations and other important topics for parents. ☐

Well-child Visits in the First 15 Months of Life

The American Academy of Pediatrics (AAP) recommends six well-child visits in the first year of life.
https://www.qualitycompass.org/QcsExternal/docs/InterpretingtheMeasures.pdf



Appropriate immunizations and vaccinations in early childhood ensure cost-effective disease and illness prevention. Many diseases are preventable through early childhood vaccination including varicella (chicken pox), measles, mumps, hepatitis A and B, and meningitis. While the decision to immunize a child is ultimately up to the parents, health plans should encourage infant immunization as an effective way to prevent potentially severe illness. Health plan performance in regard to infant immunization is measured using the scores below.

Infant immunization rate

Healthy People 2010 Goal — 90%

Why is vaccination and immunization important?

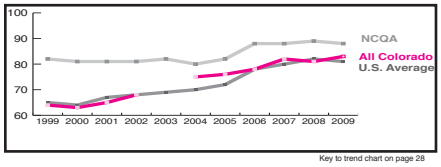
■ Vaccination is the safest, simplest, and most cost-effective way to protect children from disease and illness. In addition to saving lives, vaccinations prevent the pain, suffering and disability of illness.

■ More than 90 percent of people who have not been vaccinated for measles will get the virus if exposed to it.

In 2006, Colorado ranked in the bottom half of states in overall vaccination rates of children.

■ More than 60 percent of vaccine-preventable diseases occur in children one year and younger.

■ If vaccines were not routinely used, Colorado could expect more than 70,000 cases of vaccine-preventable infections in children each year.



Key to trend chart on page 28

Percentage of infants being immunized

HMO	
Aetna Health Inc.	79%
CIGNA HealthCare of Colorado	87%
Denver Health Medical Plan	78%
HMO Colorado	82%
Kaiser Permanente	90%
PacifiCare of Colorado	81%
UnitedHealthcare	81%
NCQA Benchmark	88%

PPO* PPO sample rates may be lower than HMO due to differing methods of data collection.

Aetna Health Inc.	28%
CIGNA HealthCare of Colorado	NR
HMO Colorado	18%
UnitedHealthcare	39%
NCQA Benchmark	31%

*PPO sample rates are calculated using claims data only, while some HMO meaures use a mix of chart and medical record review data allowing for more representative information.

You remember to protect your child's head. What about the rest of the body? Remember immunizations. They're the most important action parents can take to protect their children against 13 serious childhood diseases– including the flu. Make sure your children get all their shots by age two. Providers can access the online Colorado Immunization Information System. CIIS allows a clinician to use the system for vaccination documentation and helps ensure that children get the shots they need. Contact The Colorado Children's Immunization Coalition (303) 864-5340 OR ccicoffice@tchden.org OR www.childrensimmunization.org/.

No Health without

Mental Health

Depression is a biological illness, which goes deeper than just feeling sad from time to time. Major depressive disorder is the leading cause of disability in the United States and in market economies worldwide. While depression is a serious medical condition that affects a person's physical and mental health, most sufferers can be relieved from their depression with appropriate treatment. One in four adults—or 57.7 million Americans—suffers from mental illness. The following scores gauge health plan performance in regard to the management of depression and mental illness.

Dealing with Depression?

Depression is a leading cause of decreased productivity, lost workdays from absenteeism and disability, which incur an annual cost of $44 billion. Important things to keep in mind about depression:

- It is not a character weakness
- It can be successfully treated
- Antidepressants are not addictive

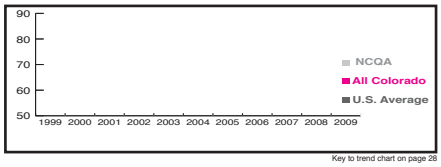
Studies show that the majority of persons with depression SHOULD but do not:

- See their doctor or mental health professional as often as recommended
- Take their medication as prescribed
- Complete the proper course of treatment ☐

Follow-up after hospitalization for mental illness within 7 days

Why is follow-up important?

■ About 1.9 million Americans are hospitalized for mental illness each year.
■ More than half of first time psychiatric patients are readmitted within two years.
■ After a person is discharged from the hospital they should have an outpatient visit with a mental health practitioner within 30 days. This helps the patient return back to their home and work and helps prevent further hospitalizations.



Key to trend chart on page 28

Percentage of members who get follow-up appointments within 7 days

HMO	
Aetna Health Inc.	58%
CIGNA HealthCare of Colorado	57%
Denver Health Medical Plan	NA
HMO Colorado	64%
Kaiser Permanente	85%
PacifiCare of Colorado	61%
UnitedHealthcare	66%
NCQA Benchmark	73%

PPO* PPO sample rates may be lower than HMO due to differing methods of data collection.

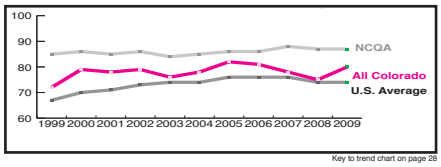
Aetna Health Inc.	52%
CIGNA HealthCare of Colorado	54%
HMO Colorado	33%
UnitedHealthcare	60%
NCQA Benchmark	50%

*PPO sample rates are calculated using claims data only, while some HMO meaures use a mix of chart and medical record review data allowing for more representative information.

Follow-up after hospitalization for mental illness within 30 days

Why is follow-up important?

■ About 1.9 million Americans are hospitalized for mental illness each year.
■ More than half of first time psychiatric patients are readmitted within two years.
■ After a person is discharged from the hospital they should have an outpatient visit with a mental health practitioner within 30 days. This helps the patient return back to their home and work and helps prevent further hospitalizations.



Key to trend chart on page 28

Percentage of members who get follow-up appointments within 30 days

HMO	
Aetna Health Inc.	68%
CIGNA HealthCare of Colorado	78%
Denver Health Medical Plan	NA
HMO Colorado	76%
Kaiser Permanente	95%
PacifiCare of Colorado	79%
UnitedHealthcare	84%
NCQA Benchmark	87%

PPO* PPO sample rates may be lower than HMO due to differing methods of data collection.

Aetna Health Inc.	73%
CIGNA HealthCare of Colorado	71%
HMO Colorado	45%
UnitedHealthcare	82%
NCQA Benchmark	71%

*PPO sample rates are calculated using claims data only, while some HMO meaures use a mix of chart and medical record review data allowing for more representative information.

Did you know there is a way to get confidential help?
http://www.CareManagementForDepression.org/

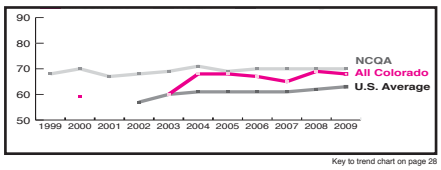
Take Note:

- *Adults are not the only ones affected by depressive disorders.*
- *According to the Center for Mental Health Services one in 33 children and one in eight teens have depression. Inability to cope with depression leads many children and young adults to tragic ends. In Colorado, suicide is the 4th leading cause of death for children age 1-14 and the second leading cause of death for young adults age 15-24. If you think your child may be suffering from depression, talk to them about their feelings and educate yourself on depression. If symptoms persist for more than two weeks, consult a mental health professional or a physician for treatment options.*

Managing medication for depression — the first 3 months

Why is this important?

■ 40 to 50 percent of primary care patients diagnosed with depression discontinue treatment within the first three months.
■ Premature discontinuation of treatment is associated with higher rates of depression relapse and major depressive episodes.
■ Total medical costs are reduced in patients remaining on antidepressants for at least 90 days.



Key to trend chart on page 28

Percentage of members with diabetes who stay on their medications for 3 months

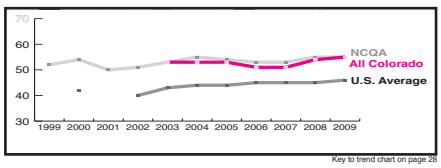
HMO	
Aetna Health Inc.	64%
CIGNA HealthCare of Colorado	65%
Denver Health Medical Plan	65%
HMO Colorado	68%
Kaiser Permanente	90%
PacifiCare of Colorado	64%
UnitedHealthcare	61%
NCQA Benchmark	54%
PPO* PPO sample rates may be lower than HMO due to differing methods of data collection.	
Aetna Health Inc.	64%
CIGNA HealthCare of Colorado	67%
HMO Colorado	70%
UnitedHealthcare	67%
NCQA Benchmark	63%

*PPO sample rates are calculated using claims data only, while some HMO meaures use a mix of chart and medical record review data allowing for more representative information.

Managing medication for depression — the first 6 months

Why is this important?

■ Patients discontinuing antidepressant treatment within six months accumulated $432 in higher medical costs per year than med-compliant patients.
■ Depression is the highest medical cost for all behavioral conditions and results in more days of disability than chronic medical conditions such as heart disease, hypertension, diabetes and lower back pain.



Key to trend chart on page 28

Percentage of members who stay on their medicine for a full course of treatment

HMO	
Aetna Health Inc.	53%
CIGNA HealthCare of Colorado	53%
Denver Health Medical Plan	57%
HMO Colorado	51%
Kaiser Permanente	78%
PacifiCare of Colorado	52%
UnitedHealthcare	44%
NCQA Benchmark	55%
PPO* PPO sample rates may be lower than HMO due to differing methods of data collection.	
Aetna Health Inc.	48%
CIGNA HealthCare of Colorado	51%
HMO Colorado	51%
UnitedHealthcare	50%
NCQA Benchmark	46%

*PPO sample rates are calculated using claims data only, while some HMO meaures use a mix of chart and medical record review data allowing for more representative information.

Resources

Page 4 — Urban hospital quality ratings
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Page 5 — Colorado rural hospitals
Colorado Rural Health Center
http://www.coruralhealth.org

Page 6 — Rural hospital quality ratings
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http://www.leapfroggroup.org

Page 7 — Hospital mortality
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Page 12 — Obesity & disease management
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Pages 13-14 — How much will it cost?
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Page 16 — Choosing the right plan for you
Premium:
This is the amount paid each month for your health insurance.
Sometimes your employer pays a portion of the premium and you pay the rest.
"Out of pocket":
(In addition to your monthly premium, you may pay other expenses)
Coinsurance:
You pay a percentage of the cost of covered services. The most common is where insurance covers 80 percent of the cost and your "out of pocket" responsibility is 20 percent.
Copayment (or Copay):
You pay a specified flat amount per unit of service (e.g., $20 per visit) or unit of time (e.g., $100 per day), while the insurer pays the remaining costs. The amount paid by the covered individual does not vary with the cost of the service (unlike coinsurance which is payment of a percentage of the cost.)
Deductible — Two common forms of deductibles:
(1) You will pay a certain dollar amount before the insurance plan will pay anything, or
(2) you will pay your coinsurance or copayment amounts up to a certain amount, and then the insurance will pay costs after that.

Page 27 — Recognizing quality healthcare
To learn about features and programs, visit health plan websites interested in quality.
Aetna Inc. .....http://www.aetna.com
CIGNA HealthCare of Colorado.....http://www.cigna.com
Denver Health Medical Plan.....http://www.denverhealth.org
HMO Colorado.....http://www.anthem.com
Kaiser Permanente HMO .....http://www.kaiserpermanente.org
PacifiCare of Colorado .....http://www.pacificare.com
Rocky Mountain Health Plans .....http://www.rmhp.org
UnitedHealthcare.....http://www.unitedhealthcare.com

Page 28 — Does your health plan measure up?
"Back pain facts"
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Pages 29-30 — Cancer Screening
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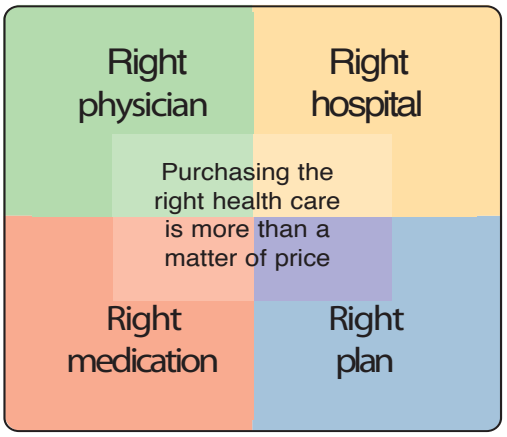
COLORADO BUSINESS GROUP ON HEALTH

CBGH is about empowering purchasers of healthcare to demand quality in the healthcare marketplace.



Tamara Kirk, MBA, SPHR, CEBS, CCP

Benefits Supervisor, Colorado Springs Utilities

"Before I became a member of CBGH I was used to focusing most on the rising cost of healthcare and addressing it through benefit design, disease management programs, and adjusting premiums. Brokers typically focus on these areas too. But, healthcare cost addressed only in this manner, is destined to continue growing uncontrolled, unless quality issues are included in the strategy. Today, CBGH is core element for our healthcare management strategy. CBGH introduces members to quality concepts, such as, patient safety, medical errors, and provider quality metrics. Members work together to develop solutions to the added cost burden of poor quality and redundancy. CBGH has built a coalition of employers committed to quality, safety, and accountability in the places where healthcare services are actually provided; in local doctor offices and hospitals. CBGH has provided its member organizations a forum to drive value in healthcare, through collaboration and engagement with all the stakeholders. We leverage purchasing power and prioritize in those areas with greatest potential for savings, while demanding accountability and transparency. Together we engage physicians, hospitals, insurance carriers, and health plans, and government, in quality and safety reporting. We engage physicians in chronic disease management with quality based incentive programs, recognizing those who provide highest quality care in our communities. We educate our plan members about wellness, quality, price and value. I'd like to invite your organization to join us and begin benefiting from the work already done, and, to partner with us to shape sustainable high quality healthcare in the local communities where we live and work." ☐

What does the CBGH do?

We engage the healthcare marketplace through leadership and active participation, driving positive changes to address quality and realize savings.

Here's how we are doing this:

- Restructuring and reforming healthcare delivery systems
- Creating uniform standards of care
- Improving accountability and data about providers and hospitals
- Improving accountability and data from insurance plans and carriers
- Providing data about high performing providers and hospitals so lower performing entities are inspired to improve
- Focusing on key strategies for managing cost such as wellness, demand management, and incentive design; developing incentives and benefits focused on rewarding quality
- Advancing use of technology to reduce redundancy, increase quality, improve patient outcomes, and engage employees in their own health
- Engaging consumers/employees in purchasing decisions based on quality and price
- Reducing redundancy and the risk of medical errors
- Improving the health of our employees

Why would employers join CBGH?

- To step up and lead positive changes in the healthcare marketplace locally and regionally to address the above areas
- To stay up to date on developments in healthcare reform; be at the front of the curve
- To engage your employees, consumers, about the importance of quality in the purchasing decision
- To unite together in joint purchasing projects with other employers in order to leverage purchasing opportunities and our influence on the healthcare market
- To collaborate, prioritize, and leverage those initiatives that have the greatest impact on healthcare cost management and quality
- To add quality to your arsenal, providing a fundamental strategy for cost management.

Colorado Business Group on Health
699 Byrant Street, Suite 200
Denver, CO 80204-4142

Creating a state of quality

Right physician | Right hospital
COLORADO BUSINESS GROUP ON HEALTH
Right medication | Right plan

Your partners in quality

The Colorado Business Group on Health is a non-profit coalition representing large purchasers of one of your most important benefits — health care services. By working together, we can assure that consumers have the best possible information on health care quality. The CBGH and Colorado health plans have been working on the "big picture" of health care quality since 1996. Healthcare is a service that is delivered locally; the only way to successfully incorporate value-driven principles into our healthcare since 1996.

www.ColoradoHealthOnline.org
303-922-0939

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Boulder Valley School District
City of Colorado Springs
Colorado College
Colorado Public Employees' Retirement Association (PERA)
Colorado Springs School District 11
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State of Colorado
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Memorial Health System
Merck & Co., Inc.
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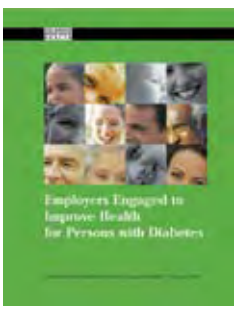
Rocky Mountain Cancer Centers
sanofi-aventis us
The Denver Hospice
Wyeth

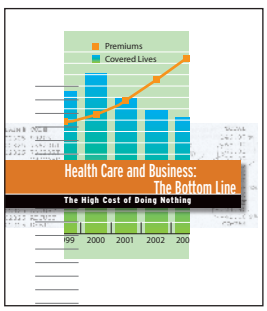
CBGH publications available at no cost

Employers Engaged to Improve Health for Persons with Diabetes
CBGH helps Colorado employers improve the health status and reduce the healthcare costs of their workforce. Colorado Springs employers take the next logical step and draw power from their collaborative efforts.

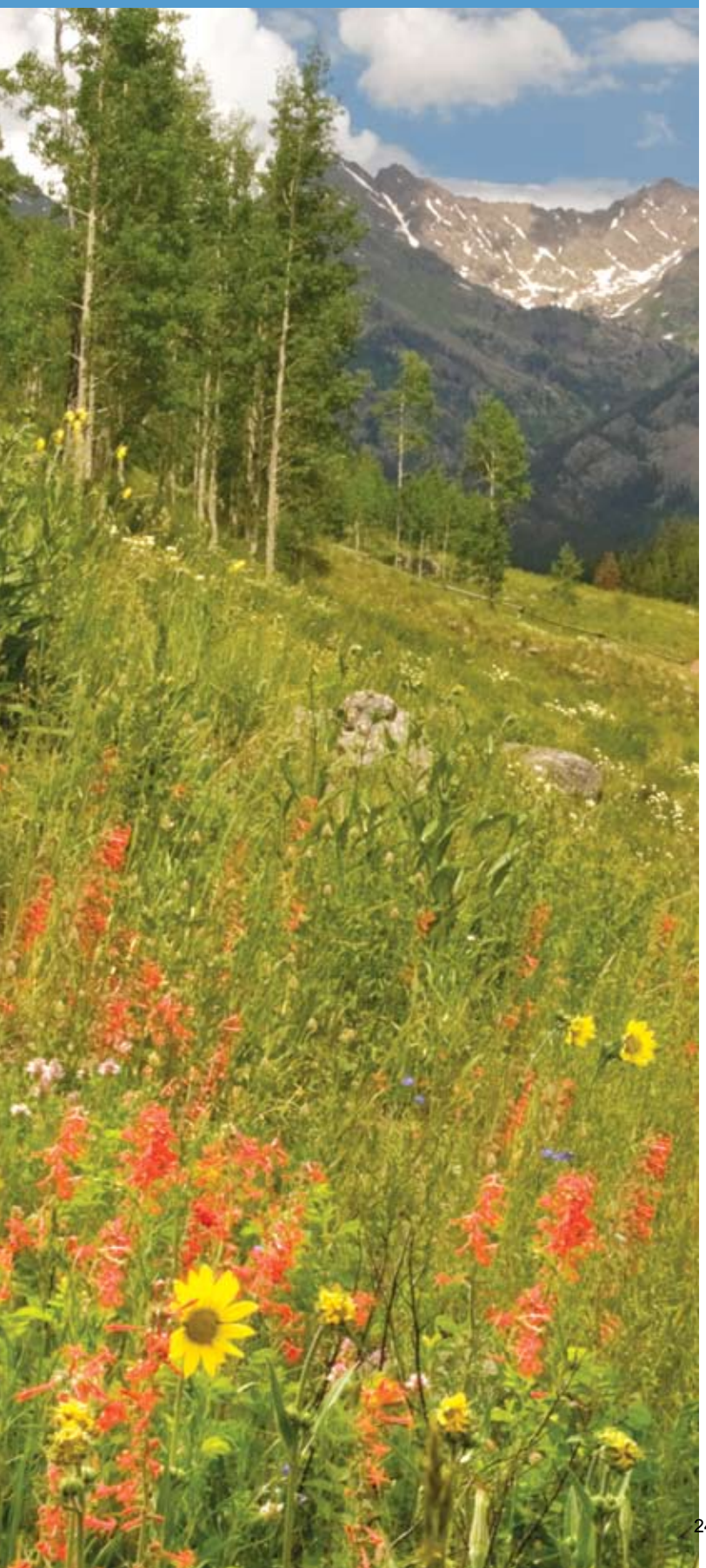


Colorado Type 2 Diabetes Report 2009
An analysis featuring demographic, utilization, charges and pharmacotherapy data. The report also provides state and national benchmarks.

Health Care and Business: The Bottom Line
Healthcare costs have risen fast in Colorado. What is the high cost of doing nothing to restrain growth?



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".

For more information contact:

Reeves Brown
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:

Lou Ann Wilroy
Executive Director
303.832.7493
www.coruralhealth.org

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.

For more information contact:

Cathy Shull
Executive Director
970.867.9167
www.progressive15.org

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.

For more information contact:

Ben Rainbolt
Director RMFU Foundation
303.283.3536.
www.RMFU.org/foundation

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.

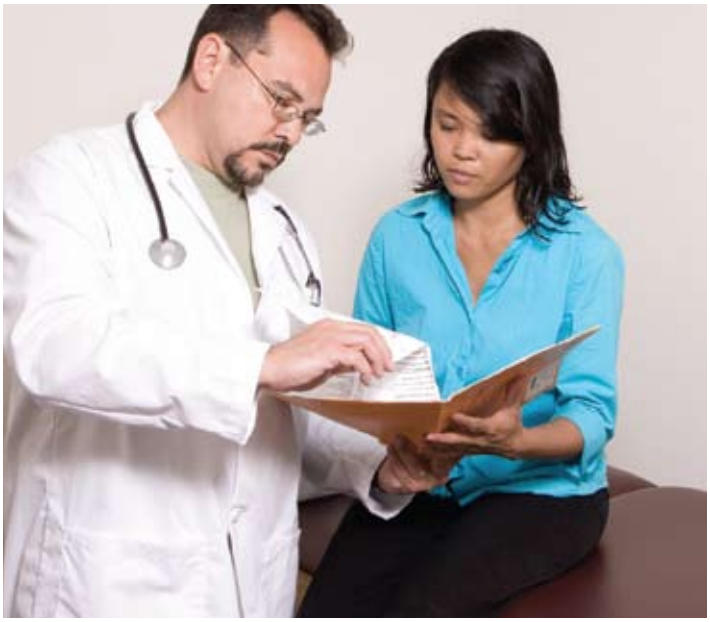
5) Provider participation. It is often difficult to locate a rural provider who accepts Medicaid, Medicare or CHP+ in rural Colorado. (Colorado Rural Health Center, 2003c).

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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