Department of Regulatory Agencies

Report of the
Commissioner of Insurance

to

The Colorado General Assembly

of the

Pueblo Health Insurance Study

January 1, 2003 - December 31, 2006
in accordance with §10-16-132, C.R.S.

January 15, 2009

Department of Regulatory Agencies

Division of Insurance
Marcy Morrison
Commissioner of Insurance

Bill Ritter, Jr.
Governor

D. Rico Munn
Executive
Director

January 15, 2009

Dear Legislative Leadership and Committee Members,

I am pleased to submit the ***Pueblo Health Insurance Study*** pursuant to §10-16-132, C.R.S.

This report examines factors affecting the cost of health insurance in Pueblo. The Division surveyed the insurance industry for carrier-specific data used in this study, and contracted with the Colorado Health Institute to analyze the information. Their report follows.

I would like to thank the staff at the Colorado Health Institute and their subcontractor, Leif Associates, for their thorough analysis and detailed attention to this study.

Our mission is consumer protection, and we appreciate the opportunity to facilitate a study of important factors affecting Colorado consumers. If you have any questions, please contact me at the Division.

Sincerely,

Marcy Morrison
Commissioner of Insurance

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Acknowledgements

The Colorado Health Institute (CHI) wishes to thank Leif Associates for their assistance in producing the Pueblo Health Insurance Study. Staff at Leif Associates helped to frame the scope of the project, conducted the claims analysis and authored the study findings. In addition, Leif Associates provided much of the background information for the report including current rating practices in Colorado.

Amy Downs, Director for Policy and Research at CHI served as project manager and conducted the contextual analysis for the report. CHI President and Chief Executive Officer, Pam Hanes, PhD, provided overall project direction, framed the initial study design and oversaw the editorial process. Kindle Fahlenkamp-Morell, Senior Communications Specialist, provided graphic design and report formatting.

A number of individuals at the Colorado Division of Insurance (DOI) assisted in the production of the report. Commissioner of Insurance, Marcy Morrison, provided project guidance. Carol O'Bryan, Director of Market Regulation, Jo Donlin, Director of External Affairs, Craig Chupp, Chief Actuary, and Damion Hughes, Market Analyst, were responsible for administering the data call to the insurance carriers and providing important follow-up regarding the timely submissions of data. The staff at DOI provided valuable feedback on report drafts.

Finally, CHI would like to acknowledge Caring for Colorado Foundation for its generous grant to fund the Pueblo Health Insurance Study beyond the appropriation provided in the enabling statute.

January 15, 2009

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Executive Summary

About This Study

The Colorado Division of Insurance commissioned this study to examine the cost drivers associated with health insurance premiums in Pueblo County. The study was mandated by House Bill 07-1101. A relevant section of the bill is paraphrased below.

> Section 10-16-132. Study of factors driving health care costs in Pueblo County. The Division shall conduct an independent and objective study to gather and analyze data to identify:
>
> (I) The factors that drive health insurance costs for individuals and groups in Pueblo County;
>
> (II) The statistical interaction, relationships and dependencies of these factors;
>
> (III) The demographic, health services and other cost components of health insurance premiums for individuals and groups in Pueblo County;
>
> (IV) The role of modified community rating for Pueblo County; and
>
> (V) Whether health coverage for individuals and groups in Pueblo County is reasonably available.

The Division contracted with the Colorado Health Institute to perform the study. Leif Associates, Inc., a health care actuarial consulting firm, was engaged by the Colorado Health Institute to conduct the actuarial analysis for the study. The law specified that the study period for which data would be analyzed was January 1, 2003 through December 31, 2006. The claims and enrollment data are two to six years old. Therefore, the interpretation of findings should take this into account as health insurance costs can fluctuate from year to year.

Why Study Pueblo?

For many years, there has been a widespread perception that the cost of health care and health insurance in the Pueblo Metropolitan Statistical Area (MSA) [hereafter "Pueblo"] is higher than in other parts of Colorado. The purpose of this study is to determine whether this perception is based in fact, and if so, to identify the factors that contribute to these higher costs.

The key questions the study sought to answer include:

- Is the cost of health care higher in Pueblo than in other parts of Colorado?
- Is the cost of health insurance higher in Pueblo than in other parts of Colorado?
- Is there a link between the cost of health care and the cost of health insurance in Pueblo?
- If the cost of health care is higher in Pueblo, what are the reasons?
- Do health care providers charge more for the same services in Pueblo than in other parts of the state?

- Are residents of Pueblo less healthy than persons in other parts of the state? Is there a higher incidence of certain diseases, such as diabetes or cancer?
- Is there a demographic difference between Pueblo residents and those living in other parts of Colorado?

In order to answer these and other questions, it was necessary to include other geographic regions of the state in addition to Pueblo so that comparisons could be made. The comparison regions chosen for the study were: 1) the Greeley Metropolitan Statistical Area (MSA) [hereafter "Weld"], which is similar to Pueblo in that it is a densely populated Front Range MSA and 2) the Denver MSA [hereafter "Denver"], comprising Arapahoe, Adams, Broomfield, Denver, Douglas and Jefferson counties.

[NOTE: A glossary of terms used in this study can be found in Appendix III.]

KEY FINDINGS

Health insurance coverage was reasonably available in Pueblo during the study period

- Based on insurance carrier responses to an October 2007 Division of Insurance (DOI) survey, twenty-two insurance carriers sold individual health insurance coverage, twelve sold small group coverage, fifteen sold large group coverage and seven administered self-funded coverage in Pueblo. Therefore, it can be concluded that health coverage in 2006 was reasonably available in Pueblo relative to the rest of the state.
- There were an additional seventeen carriers selling health insurance in Colorado in 2006 that had no covered lives in force in Pueblo. Three of these were HMOs with service regions that did not include Pueblo (Kaiser, Colorado Choice and Denver Health).
- Insurance carriers offered the same variety of products in Pueblo that were available in other parts of the state during the study period.

Health insurance coverage was generally more costly in Pueblo than in Weld or Denver

- Average small group premiums were considerably higher in Pueblo than in Denver, averaging approximately 14% higher during the four-year study period. Conversely, premiums were 10% lower, on average, in Weld than in Denver, although the difference narrowed somewhat in the latter part of the period.
- Large group premiums were only slightly higher (2%) on average in Pueblo than in Denver; large group premiums in Weld were within 1% of Denver premiums, on average, during the study period.
- On average, during the four-year study period, individual health insurance coverage cost about the same in Denver and Pueblo and slightly less in Weld. Premiums rose faster in Weld (6% annually) than in Denver or Pueblo (3-4% annually).

Health care costs were higher in Pueblo for some market segments and lower for others

- Small group claim costs were on average 9% higher in Pueblo than in Denver. They were even higher in Weld, averaging 15% above Denver costs. This

contradicts the premium comparisons, which found that premiums were 14% higher in Pueblo while premiums were 10% lower in Weld than in Denver.

- Large group claim costs were nearly the same in Pueblo and Weld, both about 7-8% higher than in Denver. However, premiums were within a couple percentage points of each other for all three areas.
- Individual health insurance claim costs were significantly lower in Pueblo than in either Weld or Denver. This contradicts the earlier finding that individual premiums were approximately the same in Pueblo and Denver while Weld premiums were lower during the study period.
- Insurance carriers as a whole had better than expected claims experience in Pueblo and Denver and worse than expected claims experience in Weld during the study period. In summary, rates during this period were not set as high as needed in Weld, but were set higher than needed in Pueblo and Denver.

Multiple factors drove health insurance costs in Pueblo during the study period. Included among these were:

- A larger proportion of the population of Pueblo was enrolled in Medicaid, CHP+ or Medicare than in Weld or Denver. Cost-shifting from these public programs may have caused individuals covered by private insurance plans to pay more.
- Pueblo facility costs (inpatient and outpatient combined) on a per member per month (PMPM) basis were 17% higher than in Denver and 8% lower than in Weld. Facility costs represented 50% of total costs in Pueblo, 46% in Denver and 54% in Weld. It is likely that competition played a significant role in this distribution of costs as hospital costs appear to be lower when there are more hospitals in a community.
- Demographics also played a part in Pueblo's health care costs as the population was slightly older than in Denver and Weld. All other things being equal, claims in Pueblo were 5-6% higher than in Denver due, in some measure, to the age and gender distribution of the insured population.
- The differences found in the cost of the health care component of health insurance premiums between the geographic areas was due to the cost of care rather than different benefit plans being purchased. In each geographic area, the members' cost share was approximately 19% of total costs.
- Hospital inpatient costs were similar in Pueblo and Denver in 2006, but outpatient surgery costs were 47% higher in Pueblo due to much higher utilization. Both inpatient and outpatient costs were high in Weld. Inpatient costs in Weld were 28% higher than in Denver, while outpatient costs were 38% higher than in Denver.
- Emergency department utilization was similar in Pueblo and Denver but the cost of an ED visit was 22% higher in Pueblo. In Weld, ED utilization rates were 26% lower but the cost of a visit was 23% higher than in Denver.

- Utilization of brand name drugs rather than generics was much higher in Pueblo than in Denver or Weld. Drug prices and annual cost trends were similar in all three areas.
- In 2006, there were 45% more diabetes diagnoses in Pueblo per thousand insured members than either Denver or Weld, and Pueblo had twice the prevalence of emphysema. Pueblo also experienced the highest incidence of lung cancer and breast cancer among the three areas.
- The cost per patient for treating lung cancer and breast cancer were much higher in Pueblo than in the other areas, but the cost of treating diabetes and emphysema was lower during the study period.

Statistical interaction, relationships and dependencies of factors

- Research has shown that income levels and age of residents influence payer mix. Where there are lower income households and more people over age 65, there will be a higher percentage of the population on Medicare, Medicaid and CHP+, resulting in providers needing to shift more costs to commercial payers. In 2005, Pueblo had 41.7% of its population enrolled in these programs, where only 23.7% of Weld's population and 22.3% of Denver's population were similarly enrolled. This may be increasing the costs of commercial health insurance plans in Pueblo.
- Hospital care is the most costly component of health care. Using more hospital care in relation to other services increases the cost of health care and health insurance.
- When there are fewer hospitals, there is less competition. The large number of hospitals in Denver drives down costs, whereas in Pueblo there are only two hospitals and in Weld only one. To this point, 2006 hospital costs per day were 54% higher in Weld than in Denver; whereas during the same time period, hospital costs per day were 33% higher in Pueblo than in Denver.
- Older people use more health care services than younger people. The average age in Pueblo was higher than in Denver or Weld, resulting in a higher utilization of health care services.
- In Denver, there was one carrier that had a predominant presence and lower costs which can be assumed to impact the costs of health insurance by driving down average costs in the Denver market. If a similar scenario had been in place in Pueblo, it may have resulted in lower average costs.
- Hospital utilization is affected by the demographics of the population and the availability of hospital beds. Where there are fewer hospital beds available, the beds will be used for the sickest patients, resulting in longer stays and more costly care on a per capita basis.

The role of modified community rating

- Modified community rating was mandated for small employer coverage in 1995 and involved the use of a single rate for all small groups, modified only by a limited number of adjustments, including age, geographic location and family

size. Beginning in late 2003, carriers could also use health status and claims experience in rating practices for the small group health insurance market.

- The geographic rating provision of the small group rating law allows carriers to set different rates for Pueblo, Weld and Denver as well as other geographic regions in the state. It is clear from this study that health care costs in the three areas were quite different and that carriers were likely to have justification for establishing different rates because of differences in provider reimbursement and health care utilization.
- In hindsight, it is not apparent from this study that the carriers set geographic factors to reflect the cost of health care in the three geographic areas. There was little consistency between the carriers and the pricing of their products in the geographic rating in both Pueblo and Weld, with extremes in both directions for each county.

Study Methods and Data Sources

The general methods used for this study are outlined in the following paragraphs. Additional detail can be found in Appendix I.

Identification of the Insurance Market

The health insurers that covered the most persons in Pueblo in 2006 were identified from responses to a Division of Insurance (DOI) survey conducted in October 2007. The survey asked all carriers licensed to write health insurance in Colorado to report the number of lives and premium volume in health benefit plans in Colorado and in Pueblo.

The sixteen largest carriers in Pueblo comprised 95 percent of the reported covered lives. Those sixteen carriers, listed alphabetically, were:

- Aetna Health Inc.
- Aetna Life Insurance Company
- American Medical Security Life Insurance Company/
- Cigna Healthcare of Colorado, Inc.
- Connecticut General Life Insurance Company
- Golden Rule Insurance Company
- Great-West Healthcare of Colorado, Inc.
- Great-West Life & Annuity Insurance Company
- HMO Colorado, Inc.
- PacifiCare Life Assurance Company
- PacifiCare of Colorado, Inc.
- Rocky Mountain Healthcare Options, Inc.
- Rocky Mountain Health PlansHMO, Inc.
- Rocky Mountain Hospital and Medical Service, Inc. (Anthem Blue Cross Blue Shield)
- United Healthcare Life Insurance Company
- United Healthcare of Colorado, Inc.

DATA COLLECTED

House Bill 07-1101 specified that the data to be collected for the study would be for the period beginning on January 1, 2003 and ending December 31, 2006 and would include the following data elements:

- The amount of claims paid by health insurers in Pueblo;
- The rates charged for health insurance;
- The charges billed by licensed, certified or registered health care providers;
- The charges billed by all licensed health care facilities;
- The number of licensed, certified, or registered health care providers in Pueblo;
- The number of health insurers conducting business in Pueblo;
- Whether the practice patterns of health care providers in the Pueblo community differ from accepted standards and guidelines;
- Whether the health status of the Pueblo community drives health insurance costs; and
- Any other information determined necessary by the Commissioner.

The DOI sent out a data request to the sixteen carriers listed above as well as to Kaiser Permanente Insurance Company and Kaiser Foundation Health Plan of Colorado, because of Kaiser's significant presence in the Denver MSA. A copy of the data request is included as Appendix II.

METROPOLITAN REGIONS SELECTED FOR THE STUDY

Two comparison metropolitan areas were chosen to be included in the study. The two were the Greeley MSA [hereafter "Weld"] and the Denver MSA [hereafter "Denver"]. Weld was chosen because it is an MSA similar to Pueblo in that it is an area with significant population located along the Colorado Front Range outside of Denver. Denver was chosen because of its concentration of medical facilities and large population. With slightly more than150,000 residents in 2006, Pueblo had a smaller population base than Weld with nearly 240,000 residents and significantly smaller than Denver with its 2.4 million residents.[1]

The three regions included in this study experienced varying degrees of population growth throughout the study period. This is likely to have impacted the health care infrastructure in various ways.

- The population growth rate in Pueblo was 3%—the lowest of the three areas included in the study. All of the growth in Pueblo was in the adult population, with the number of children remaining flat throughout the four years of the study period.
- Between 2003 and 2006, Weld experienced a 12.8% increase in population. This significant rate of growth in Weld could have had a notable impact on the health care infrastructure in driving up demand for health care services.

[1] Colorado State Demography Office. Retrieved from ttp://dola.colorado.gov/dlg/demog/pop_cnty_estimates.html.

- Alternatively, population growth in Denver was 5.3% over the study period.

Summary of Aggregate Data

The DOI data request asked for insurance data for individual, small group and large group policies as well as self-insured claims and members administered by the company. The DOI received data from all of the carriers from whom they were requested. After verification of the reasonableness of each carrier's data submission, the carrier data was combined for the study. In order to protect the proprietary nature of the carrier data, this report does not include any carrier-specific data. Nearly $10 billion of usable claims data was provided for the three geographic areas. The magnitude of the usable data for the four-year period 2003 through 2006 by region for all market segments combined is shown in the following table. Leif Associates believes the findings to be statistically valid.

Table 1. Member months and paid claims data included in the Pueblo Health Insurance Study, 2003-2006[2]

	Year	Pueblo	Weld	Denver MSA	Combined
Member Months	2003	424,281	811,312	10,863,038	12,098,631
	2004	455,658	886,347	11,986,555	13,328,560
	2005	479,420	959,123	12,877,258	14,315,801
	2006	476,418	1,004,910	12,954,888	14,436,216
	Combined	1,835,777	3,661,692	48,681,739	54,179,208
Paid Claims	2003	$75,644,940	$144,798,292	$1,850,689,951	$2,071,133,182
	2004	$85,179,847	$175,459,897	$2,118,409,801	$2,379,049,545
	2005	$93,153,747	$192,607,533	$2,379,579,128	$2,665,340,407
	2006	$102,375,151	$214,764,125	$2,557,780,831	$2,874,920,107
	Combined	$356,353,684	$727,629,846	$8,906,459,711	$9,990,443,241

Source: Membership and claims data

Summary of Data by Market Segment

Data regarding membership and claims was allocated into the following market segments: individual, small group, large group and self-funded. The following paragraphs include a description of these market segments and the magnitude of the usable data available for each segment.

[2] Defined in the glossary in Appendix III.

1. Individual Market

The individual health insurance market is defined as health insurance policies that are sold directly to an individual rather than being made available through an employer. In Colorado, an applicant for individual health insurance is medically underwritten, meaning they are required to submit an application including their health history. A health insurer can reject the application if the individual's health status does not meet the insurer's underwriting standards.

In 2006, there were thirty carriers selling individual health insurance plans in Colorado, including twenty-two in Pueblo. The following table summarizes the data for the individual health insurance market that was included in this study.

Table 2. Member months and paid claims data for individual health insurance market included in the Pueblo Health Insurance Study, 2003-2006

	Year	Pueblo	Weld	Denver MSA	Combined
Member Months	2003	22,858	58,424	583,459	664,741
	2004	25,739	65,066	677,535	768,340
	2005	32,105	76,444	808,000	916,549
	2006	34,775	84,184	913,491	1,032,450
	Combined	115,477	284,118	2,982,485	3,382,080
Paid Claims	2003	$1,777,128	$4,869,181	$55,670,518	$62,316,827
	2004	$1,802,681	$6,428,262	$66,841,002	$75,071,945
	2005	$2,332,595	$9,623,224	$84,403,229	$96,359,048
	2006	$3,109,046	$11,069,288	$93,470,964	$107,649,298
	Combined	$9,021,449	$31,989,955	$300,385,712	$341,397,118

Source: Membership and claims data

Based on the 2007 DOI survey which included Pueblo and the statewide Colorado insured market, Leif Associates confirmed that the study data included 99 percent of the Pueblo individual market and 35 percent of the entire Colorado individual market. It can be seen from these data that:

- During the study period there was significant growth in the number of individuals covered in the individual market in all three areas, although the numbers remained small as a percent of the population and total insured lives.
- Individual plans accounted for 7.3% of 2006 insured lives in Pueblo, similar to Weld (8.4%) and Denver (7.1%).

2. Small Group Market

The small group health insurance market is defined in Colorado statutes as businesses with 50 or fewer employees. Colorado insurance law requires insurance carriers who

market to small employers to offer coverage to any small employer that applies. An employer cannot be denied coverage due to the health status of its employees, although during most of the period covered by this study (09/2003 through 12/2006) rates could reflect employees' health status within a limited range. More information about the health status rating factor is included later in this report.

In 2006, there were twenty carriers selling small group coverage in Colorado, including twelve in Pueblo. The following table summarizes the data from the small group health insurance market that was included in the study.

Table 3. Member months and paid claims data for the small group insurance market included in the Pueblo Health Insurance Study, 2003-2006

	Year	Pueblo	Weld	Denver MSA	Combined
Member Months	2003	61,730	162,160	1,957,811	2,181,701
	2004	58,567	170,455	1,884,403	2,113,425
	2005	62,596	175,090	1,920,245	2,157,931
	2006	60,023	175,871	1,916,749	2,152,643
	Combined	242,916	683,576	7,679,208	8,605,700
Paid Claims	2003	$12,490,789	$30,883,822	$317,236,753	$360,611,364
	2004	$10,328,935	$36,710,245	$339,803,459	$386,842,639
	2005	$12,154,419	$34,479,500	$351,679,715	$398,313,634
	2006	$12,704,950	$38,993,317	$375,196,144	$426,894,411
	Combined	$47,679,092	$141,066,884	$1,383,916,072	$1,572,662,048

Source: Membership and claims data

Based on the DOI's 2007 survey, Leif Associates confirmed that the 2006 data included 99 percent of the Pueblo small group market and about 48 percent of the entire Colorado small group market. It can be seen from these data that:

- During the study period, the small group market had relatively stable membership in all three areas.
- In 2006, small group plans accounted for 12.6% of insured lives in Pueblo, somewhat less than in Weld (17.5%) and Denver (14.8%).

3. Large Group and Self Funded Markets

The large group market is defined as employer-sponsored group insurance sold to employers with 50 or more employees. In this market segment, Leif Associates also included self-funded plans, which are most commonly offered by large employers.

In 2006, there were twenty-six carriers selling large group insurance coverage in Colorado, including fifteen in Pueblo. There were twelve insurers administering self-

funded plans, including seven in Pueblo. The following table summarizes the data for the large group and self-funded plan health insurance market that was included in the study.

Table 4. Member months and paid claims data for large group and self-funded health insurance markets included in the Pueblo Health Insurance Study, 2003-2006

	Year	Pueblo	Weld	Denver MSA	Combined
Member Months	2003	339,693	590,728	8,321,768	9,252,189
	2004	371,352	650,826	9,424,617	10,446,795
	2005	384,719	707,589	10,149,013	11,241,321
	2006	381,620	744,855	10,124,648	11,251,123
	Combined	1,477,384	2,693,998	38,020,046	42,191,428
Paid Claims	2003	$61,377,024	$109,045,289	$1,477,782,680	$1,648,204,993
	2004	$73,048,231	$132,321,389	$1,711,765,340	$1,917,134,960
	2005	$78,666,733	$148,504,809	$1,943,496,184	$2,170,667,725
	2006	$86,561,155	$164,701,519	$2,089,113,724	$2,340,376,398
	Combined	$299,653,142	$554,573,007	$7,222,157,927	$8,076,384,076

Source: Membership and claims data

Based on the 2007 DOI survey, Leif Associates confirmed that the 2006 data included 99 percent of the Pueblo large group and self-funded market and about 60 percent of the entire Colorado large group and self-funded market. It can be seen from these data that:

- During the study period, the large group market was by far the largest market segment in all three areas. All three experienced growth in membership, although the growth in Pueblo was slower than in the other two areas.
- In 2006, large group plans covered 80.1% of insured lives in Pueblo, somewhat more than in Weld (74.1%) and Denver (78.2%).

The distribution of members between the various market segments during the four-year study period is shown in the table below.

Table 5. Average monthly enrollment as a proportion of total covered lives by market segment, Pueblo Insurance Study, 2003-2006.

	Pueblo	Weld	Denver MSA	Total
Individual	3.4%	8.4%	88.2%	100.0%
Small	2.8%	8.3%	88.8%	100.0%
Large	3.4%	6.1%	90.6%	100.0%
Self-Funded	4.2%	7.9%	88.0%	100.0%
Total	**3.4%**	**6.8%**	**89.8%**	**100.0%**

Source: Membership data

In 2006, Pueblo comprised about 5.5 percent of the total population of the three regions, while Weld and Denver were approximately 8.5 percent and 86 percent respectively. However, as shown in the Table 5, Pueblo insured members comprised only 3.4 percent of the member population while Weld insured members comprised 6.8 percent of the member population. This is not an unexpected result, since the proportion of the population that was enrolled in public programs was higher in Pueblo and the number of uninsured was higher in Weld compared to Denver.

Availability of Health Coverage in Pueblo

The October 2007 DOI survey provided the following information regarding the health insurance market in Colorado and in the Pueblo MSA.

Choice of Carriers

The following table shows the number of insurance carriers that reported they were writing health benefit plans in Colorado or in Pueblo during the study period.

Table 6. Number of carriers selling health insurance in Colorado and Pueblo, 2006

	Individual Plans	Small Group Plans	Large Group Plans	Self Funded Plans
Colorado	30	20	26	12
Pueblo	22	12	15	7

Source: Colorado Division of Insurance Carrier Survey, 2007

The following thirty-two carriers reported that they sold health insurance plans in Pueblo in 2006.

Table 7. Carriers selling health insurance plans in Pueblo, 2006

Company or Group	Individual Plans	Small Group Plans	Large Group Plans	Self Funded Plans
Aetna Health			X	
Aetna Life	X	X	X	X
American Family	X			

Company or Group	Individual Plans	Small Group Plans	Large Group Plans	Self Funded Plans
American Medical Security	X			
American National	X			
Anthem Blue Cross Blue Shield (Rocky Mountain Hospital and Medical Service, Inc.)	X	X	X	X
Celtic Insurance	X			
CIGNA			X	
Connecticut General Life			X	X
Corporate Health Insurance Company			X	
Fidelity Security Life	X			
Freedom Life	X			
Golden Rule	X			
Great-West Healthcare			X	
Great-West Life & Annuity			X	X
Guarantee Trust Life	X			
HMO Colorado		X	X	X
Imerica Life	X			
John Alden Life	X	X		
Mega Life & Health Ins Co	X	X		
Mid West National Life Ins Co of TN	X	X		
National Foundation Life	X			
PacifiCare Life Assurance Co	X	X	X	X
PacifiCare of Colorado	X	X	X	
Physicians Mutual	X			
Reserve National	X			
Rocky Mountain Healthcare Options	X	X	X	
Rocky Mountain HMO		X	X	
Sentry Life	X			
Time Insurance	X			
United Healthcare Insurance Co (CT)		X	X	X
United Healthcare of Colorado		X	X	

Source: Colorado Division of Insurance Carrier Survey, 2007

The following additional seventeen carriers reported that they sold health insurance plans in Colorado but not in Pueblo in 2006.

Table 8. Carriers selling health insurance plans in Colorado, but not in Pueblo, 2006

Company or Group	Individual Plans	Small Group Plans	Large Group Plans	Self Funded Plans
ACE American	X			
American Heritage			X	
Canada Life				X

Company or Group	Individual Plans	Small Group Plans	Large Group Plans	Self Funded Plans
Colorado Choice	X	X	X	X
Combined Insurance Company				X
Denver Health			X	
Guardian Life	X	X	X	X
Kaiser Foundation Health Plan	X	X	X	
Kaiser Permanente Insurance Company		X	X	
Mennonite Mutual	X			
Nippon Life			X	
Principal Life		X	X	X
Standard Life	X			
Standard Security Life			X	
Sunset Life	X	X	X	
Trustmark		X	X	
Union Security	X	X		

Source: Colorado Division of Insurance Carrier Survey, 2007

Three of these carriers (Kaiser, Colorado Choice, and Denver Health) are HMOs with service regions that did not include Pueblo.

Choice of Products

An additional source of information for this study was the rate filings submitted to the DOI by the insurance carriers during 2006. Leif Associates' review of these rate filings revealed that carriers offered a wide variety of products in Pueblo, including both PPO and HMO products with a variety of plan designs. Further, the carriers offered the same portfolio of products in Pueblo as they offered in other parts of the state. Leif Associates concluded from this information that health coverage for individuals and groups was reasonably available in Pueblo in 2006.

Cost of Health Insurance Coverage in Pueblo

Based on the premium data collected for this study, Leif Associates was able to determine the average PMPM premium paid for insurance coverage in Pueblo and compared it to the corresponding costs in Weld and Denver during the study period. Because of differences in products, underwriting and marketing, Leif Associates looked at each market segment separately.

Individual Market

Individual product premiums tend to be lower than group premiums for a couple of reasons. First, applicants are medically underwritten, resulting in a better health profile for the members enrolled. Second, individual products tend to have less generous benefits than group products, often excluding certain benefits such as maternity coverage and mental health treatment and limiting others such as prescription drugs.

Table 9. Average PMPM for individual market premiums, 2003-2006

	Year	Pueblo	Weld	Denver MSA
Premium PMPM	2003	$146.75	$132.83	$148.61
	2004	$154.30	$138.89	$152.98
	2005	$154.57	$146.87	$155.71
	2006	$166.65	$158.18	$163.27
	Combined	$156.60	$145.51	$156.02

Source: Membership and premium data

From this table it can be seen that:

- Individual health insurance premiums were approximately the same in Pueblo and Denver during the study period, while individual premiums were, on average, 7% lower in Weld.
- Premiums rose faster in Weld (6% annual average) compared to Pueblo (4%) and Denver (3%).
- The variance in premiums between Weld and Denver was nearly eliminated by the end of the study period. Premiums in Weld were 11% below Denver in 2003 and only 3% lower in 2006.

SMALL GROUP MARKET

Table 10 shows the average premiums for small group coverage during the study period.

Table 10. Average PMPM for small group market premiums, 2003-2006

	Year	Pueblo	Weld	Denver MSA
Premium PMPM	2003	$270.13	$191.59	$231.51
	2004	$333.91	$209.40	$252.15
	2005	$261.91	$260.85	$265.85
	2006	$316.76	$258.73	$281.87
	Combined	$294.91	$231.04	$257.73

Source: Membership and premium data

From this table, several observations can be made:

- Small group insurance coverage is significantly more costly than individual coverage (Table 9). This is most likely because of the guarantee issue requirements for this market segment compared to the medical screening that is used for individual coverage. Additionally, small group products have considerably more generous benefits than those in the individual market

- Average small group premiums were considerably higher in Pueblo than in Denver, averaging approximately 14% higher during the 4-year study period. Conversely, premiums in Weld were less than in Denver by 10%, on average, although the difference narrowed in the latter part of the study period.
- Average small group premiums in Pueblo were 28% higher than small group premiums in Weld.
- Small group premiums rose more slowly in Pueblo (5.5%) than in Denver (6.8%) or Weld (10.5%).

LARGE GROUP MARKET

The following table shows the average premiums for large group coverage during the study period.

Table 11. Average PMPM for large group market premiums, 2003-2006

	Year	Pueblo	Weld	Denver MSA
Premium PMPM	2003	$242.19	$231.98	$238.70
	2004	$251.30	$246.62	$238.81
	2005	$255.34	$247.05	$245.82
	2006	$277.12	$271.59	$268.18
	Combined	$254.05	$247.81	$248.00

Source: Membership and premium data

From this table, several additional observations can be made:

- Large group insurance coverage was less costly than small group coverage in both Pueblo (-14%) and Denver (-4%), while it was more costly in Weld (+7%).
- Large group premiums were only slightly higher (2%) on average in Pueblo than in Denver. Weld large group premiums were within 1% of Denver premiums.
- Large group premiums rose at about the same pace (4-5% annually) in all three areas during the study period.

HOUSEHOLD INCOME

Even when health insurance is available through an employer, it may not be affordable enough for certain employees to enroll. Table 12 summarizes the median household income for the total population in each of the three comparison MSAs for the period between 2003 and 2005.

Table 12. Median household income, Pueblo, Weld and Denver MSA, 2003-05[3]

	Pueblo	Weld	Denver MSA
2003	$35,130	$44,756	$55,456
2004	$35,693	$46,241	$56,264
2005	$37,129	$48,338	$56,607

Source: U.S. Census Bureau, Small Area Income and Poverty Estimates, 2006 - 2008

In 2003, the median household income in Pueblo was 78 percent of the household income in Weld and 63 percent of the household income in Denver. During this same year, median household income in Weld was 81 percent of that in the Denver MSA.

The differences in premiums relative to income do not take into account variations in the cost of living across the three areas. Based on cost-of-living calculations developed by the Colorado Fiscal Policy Institute which compared "self-sufficiency standards" across Colorado counties, substantial differences can be noted between the three study areas.[4] The self-sufficiency standard is based on family composition, geographic location and how much household income is needed to meet a family's basic needs without private or public subsidies. As Table 13 indicates, based on region-adjusted cost of living, the self-sufficiency standard in Pueblo is lower when compared to Weld and Denver.

Table 13. Self-sufficiency standard based on selected family compositions, Pueblo and Weld counties and Denver MSA, 2004

	Pueblo	Weld	Denver MSA
One adult	$15,477	$17,365	$19,289
One adult and one child in preschool	$23,736	$31,125	$35,911
Two adults, one child in preschool and one school-age child	$36,965	$43,868	$48,930

Source: Colorado Fiscal Policy Institute. (2004). "The Self-Sufficiency Standard for Colorado 2004: A Family Needs Budget"

A single adult with income at the self-sufficiency standard would still be required to pay a greater proportion of his or her income toward a health insurance premium in Pueblo compared to Weld and Denver. Table 14 summarizes the proportion of income that an adult with income at the self-sufficiency standard would be required to pay for the full cost of an average annual premium in each of the three areas included in the study. While Table 14 is useful for comparing the self-sufficiency standard relative to the cost of health insurance, it is important to note that individuals who receive health insurance coverage in the employer-sponsored market do not pay the full cost of their premium. Employer contributions typically account for 50 percent or more the employee's premium. This figure may be lower for dependents.

[3] 2005 is the most recent year available.
[4] 2004 is the only year during the study period for which data are available.

Table 14. Average annual premiums in the individual, small group and large group health insurance markets, as a percentage of the self-sufficiency standard for one adult, 2004

	Pueblo	Weld	Denver MSA
Individual market	12.0%	9.6%	9.5%
Small group market	25.9%	14.5%	15.7%
Large Group market	19.5%	17.0%	14.9%

Source: Colorado Fiscal Policy Institute. 2004. "The Self-Sufficiency Standard for Colorado 2004: A Family Needs Budget"

Components of Health Insurance Premiums

The three main components that make up the cost of health insurance include:

1) The cost of the health care services covered by the insurance policy;
2) The cost of administering the health insurance policy; and,
3) The additional charges included by the insurance carrier for profit or contribution to surplus.

Each of these components is discussed below.

The Cost of Health Care

The cost of health care services is the largest component of health insurance costs. Health care services generally include inpatient and outpatient hospital care, professional fees, prescription drug costs, ambulance services, physical therapy, home health care and so forth. Insurance premiums also reflect the fact that the cost of health care is shared between the insurer and the member in accordance with the benefit design of the policy. In other words, the member pays a portion of the health care costs by way of deductibles, coinsurance, co-pays, limited benefits and benefit exclusions.

In Pueblo and the two comparison areas of Weld and Denver, the average PMPM cost of health care services paid by commercial insurance in each of the three market segments is illustrated in the following tables.

Table 15. Average PMPM claims in the individual, small group and large group markets, 2003-2006

	Year	Pueblo	Weld	Denver MSA
Individual	2003	$77.75	$83.34	$95.41
	2004	$70.04	$98.80	$98.65
	2005	$72.66	$125.89	$104.46
	2006	$89.40	$131.49	$102.32
	Combined	$78.12	$112.59	$100.72

	Year	Pueblo	Weld	Denver MSA
Small Group	2003	$202.35	$190.45	$162.04
	2004	$176.36	$215.37	$180.32
	2005	$194.17	$196.92	$183.14
	2006	$211.67	$221.72	$195.75
	Combined	$196.28	$206.37	$180.22
Large Group	2003	$180.68	$184.59	$177.58
	2004	$196.71	$203.31	$181.63
	2005	$204.48	$209.87	$191.50
	2006	$226.83	$221.12	$206.34
	Combined	$202.83	$205.86	$189.96

Source: Membership and claims data

This table illustrates the following about the costs of claims in the three study regions:

- Individual policy claims were significantly lower in Pueblo than in either Weld or Denver. This seems to contradict the earlier finding that individual premiums were approximately the same in Pueblo and Denver, while premiums in Weld were lower. It is apparent that individual claims have risen very rapidly in Weld (16% per year on average), while the trend rate in Pueblo and Denver was under 5% during the study period.
- Small group policy claims were 9% higher, on average, in Pueblo than in Denver. They were higher still in Weld, averaging 15% above Denver costs during the study period. This again seems to contradict the premium comparison, which showed that premiums were 14% higher in Pueblo while premiums were 10% lower in Weld than Denver.
- Large group policy claim costs were nearly the same in Pueblo and Weld, both averaged about 7-8% higher than Denver, although premiums were within a couple percentage points of each other.

Another way to measure the relationship of claims to premiums is by calculating the medical loss ratio. The medical loss ratio represents the percentage of premium that goes towards providing health care services. Insurance carriers are required to report their anticipated medical loss ratio when filing rates with the DOI. If the medical loss ratio is higher than expected it will result in a loss to the insurer. If it is lower than expected, the insurer will realize a higher profit margin. From Leif Associates' review of the carrier rate filings for calendar year 2006, they found that the average expected medical loss ratios by market segment were as follows:

- Individual 71%
- Small Group 78%
- Large Group 85%

Table 16 shows the actual medical loss ratios experienced by the combined insurance carriers for the three market segments in Pueblo, Weld and Denver during the study period. The calculations include only those carriers that submitted both premium and claims for a product line. They do not include claims from self-funded health benefit plans.

Table 16. Medical loss ratios in individual, small group and large group health insurance markets, 2003-2006

	Year	Pueblo	Weld	Denver MSA
Individual	2003	53.0%	62.7%	64.2%
	2004	45.4%	71.1%	64.5%
	2005	47.0%	85.7%	67.1%
	2006	53.6%	83.1%	62.7%
	Combined	49.9%	77.4%	64.6%
Small Group	2003	74.9%	99.4%	70.0%
	2004	52.8%	102.9%	71.5%
	2005	74.1%	75.5%	68.9%
	2006	66.8%	85.7%	69.4%
	Combined	66.6%	89.3%	69.9%
Large Group	2003	69.8%	80.4%	72.5%
	2004	74.9%	87.2%	73.0%
	2005	78.7%	89.3%	73.1%
	2006	81.3%	90.9%	75.5%
	Combined	75.7%	86.7%	73.6%

Source: Premium and claims data

In all three market segments, on a combined basis, the carriers experienced better than expected medical loss ratios in Pueblo and Denver, but worse than expected in Weld. This explains the disparities between the claims and the premiums in these three areas. In summary, rates during this period were not set as high as needed in Weld, but were set higher than needed in Pueblo and Denver.

Administrative Costs and Profit

Administrative costs for health insurance policies consist of claims administration, underwriting, overhead, broker commissions and premium taxes. Leif Associates' review of the rate filings submitted revealed the following average expected administrative expenses by market segment:

- Individual 26%
- Small Group 19%
- Large Group 12%

The primary drivers for the higher expenses within the small group and individual market segments are broker commissions and medical underwriting. The product lines also experience lower economies of scale in general administrative cost allocations than in the large group market.

In addition to the administrative percentages listed above, insurance carriers typically price their products to achieve 3-5 percent profit/contribution to surplus.

SUMMARY

In summary, the components of health insurance premiums would be expected to be as shown in Table 17 based on Leif Associates' review of carrier rate filings for the study period.

Table 17. Expected cost of claims, administration and profit as a percentage of premiums in the individual, small group and large group markets, 2006

Market Segment	Claims	Administrative Costs	Profit	Total
Individual	71%	26%	3%	100%
Small Group	78%	19%	3%	100%
Large Group	85%	12%	3%	100%

Source: Carrier rate filings submitted to the Colorado Division of Insurance, 2006

Based on the data analyzed for this study, Table 18 summarizes the actual cost of claims paid as a percentage of premiums in the three market segments. In addition, based on carriers' rate filings, Table 18 illustrates the *predicted* administrative costs as a percentage of premiums. It is important to note that the rate filings represent a prospective estimation of administrative costs and do not necessarily represent the actual administrative costs incurred.

After taking into account actual claims and estimated administrative costs, the remainder of the premium is assumed to be profit. Again, it is important to note that assumed profit is based on the *predicted* administrative costs from the rate filings. The extent to which actual administrative costs were different from predicted administrative costs would impact the profit estimates provided in Table 18.

It is also important to note that the results of this analysis varied significantly by insurance carrier and the totals may be skewed by the claim experience of one or more of the larger carriers. Further, the individual market claims may be skewed by recent growth in that product line.

Table 18. Actual claims and estimated administration and profit as a percentage of premiums in the individual, small group and large group health insurance markets in the three study areas, 2003-2006

Market Segment	MSA	Claims (actual)	Administrative Costs (estimated)	Profit (estimated)	Total
Individual	Pueblo	50%	26%	24%	100%
	Weld	77%	26%	-3%	100%
	Denver	65%	26%	9%	100%
Small Group	Pueblo	67%	19%	14%	100%
	Weld	89%	19%	-8%	100%
	Denver	70%	19%	11%	100%
Large Group	Pueblo	76%	12%	12%	100%
	Weld	87%	12%	1%	100%
	Denver	74%	12%	14%	100%

Source: Premium and claims data

Factors That Drive Health Care Costs

Employment and Insurance Status and Potential Cost Shifting

Because the health insurance market in the United States is largely an employer-based market, the extent to which individuals have access to health insurance coverage is largely dependent upon their employment status and, if employed, whether their employer offers health insurance coverage. Individuals who are not employed are more likely to be uninsured or enrolled in publicly-financed health insurance programs.

Throughout the study period, the unemployment rate declined in each of the three comparison regions. While it is not possible to draw specific conclusions about access to health insurance from unemployment data, these data provide context regarding the employment environment in the three regions included in the study. Table 19 indicates that the unemployment rate in Pueblo each year exceeded that experienced in Weld and Denver.

Table 19. Unemployment rates in Pueblo and Weld counties and the Denver MSA, 2003-06[5]

	Pueblo	Weld	Denver MSA
2003	7.5%	5.9%	6.4%
2004	7.5%	5.7%	5.8%
2005	7.0%	5.6%	5.3%
2006	5.7%	4.7%	4.5%

Source: Colorado Department of Labor and Employment

[5] Due to data limitations at the county level, data are not seasonally adjusted.

It is important to understand variations in the employment and insurance status of populations within communities around the state because such variations can influence the cost of health care and thus the cost of health insurance coverage. Providers often cite the challenges associated with receiving no or partial payment from self-pay individuals and individuals with public coverage such as Medicaid, Medicare or the Child Health Plan Plus (CHP+) program. If providers are not compensated or only partially compensated for their services, they may attempt to recoup these costs by increasing what is charged to commercially insured populations. This phenomenon is termed "cost shifting."[6] While it is beyond the scope of this study to prove the existence of cost shifting or to estimate the extent to which it occurs, Table 20 illustrates the percent of the population in each study area that was enrolled in publicly financed programs.

Table 20. Proportion of the population in Pueblo, Weld and Denver enrolled in Medicare, Medicaid, and CHP+, 2005

	Pueblo	Weld	Denver MSA
Medicare[7]	17.5%	9.2%	9.8%
Medicaid[8]	23.0%	12.8%	11.4%
CHP+	1.2%	1.7%	1.1%
Proportion of population	41.7%	23.7%	22.3%

Sources: Colorado Department of Health Care Policy and Financing, Centers for Medicare and Medicaid Services and Colorado State Demography Office

These data have a number of implications with regard to what may drive some portion of the health care costs observed in the three study areas:

- In 2005, the proportion of the population in Pueblo enrolled in Medicare, Medicaid or CHP+ was 41.7% compared to 23.7% and 22.3% in Weld and Denver respectively.
- The proportion of the population in Pueblo enrolled in Medicaid was more than double that of Denver.
- The proportion of the population in Pueblo enrolled in Medicare (17.5%) was significantly larger than that in Weld (9.2%) and Denver (9.8%).

In 2005, among the under 65 population, Colorado had an uninsurance rate of approximately 17.7 percent. The rate of uninsurance varied significantly between the three regions—21.6% in Weld, 13.2% in Pueblo and 16% in Denver.[9,10] The lower

[6] Davis, K. (March 3, 2003). "Time for Change: The hidden cost of a fragmented health insurance system." Invited testimony before the U.S. Senate Special Committee on Aging.
[7] Some individuals are enrolled in both Medicare and Medicaid. These "dual eligibles" are counted in both categories.
[8] Medicaid and CHP+ enrollment is based on state fiscal year (SFY) 2005-06 enrollment figures.
[9] U.S. Census Bureau. (2008), Small Area Health Insurance Estimates. 2005 is the only year within the study period in which sub-state estimates of the uninsured are available.
[10] Based on a 90% confidence level, the margin of error is +/- 1.9% for Pueblo and +/- 2.5% for Weld. The margin of error is not available for Denver.

uninsurance rate in Pueblo is likely due to the proportionately higher enrollment in Medicaid relative to the other two areas.

MIX OF SERVICES

The tables below show the total PMPM cost of health care for insured persons in the three study regions for all insurance carriers combined in 2006. The term "allowed costs" indicates the cost of care after negotiated discounts were applied, but before member cost sharing. Facility costs include hospitals, outpatient facilities, nursing homes and so forth. Medical costs include physician costs, home health care, ambulance, physical therapy and other professional services.

Table 21. Aggregate average allowed PMPM facility, medical and pharmacy rates, 2006

Allowed Cost Component	Pueblo	Weld	Denver MSA
Facility	$127.32	$137.94	$108.37
Medical	$85.15	$80.60	$86.33
Pharmacy	$43.98	$36.55	$39.76
Total	$256.46	$255.09	$234.46

Source: Membership and claims data

Observations from these data include:

- Facility costs represent approximately 50% of total costs in Pueblo, 46% in Denver and 54% in Weld.
- PMPM hospital costs in Pueblo were 17% higher than in Denver and 8% lower than in Weld.
- PMPM pharmacy costs were 11% higher in Pueblo than in Denver and 20% higher than in Weld.

MIX OF PROVIDERS

Table 22 provides an inventory of hospitals and staffed beds in each of the three study regions based on 2006 data (the most recent data available at the time this study was conducted). The most notable difference between the regions is in Pueblo where there were almost three times the number of staffed beds per 10,000 population than in Denver and Weld.

Table 22. Summary of total number of hospitals and staffed beds in Pueblo, Weld and Denver MSA, 2006

	Pueblo		Weld		Denver MSA	
	Number	Beds/10,000 population	Number	Beds/10,000 population	Number	Beds/10,000 population
Hospitals	2	N/A	1	N/A	26	N/A
Staffed hospital beds	491	32.0	322	13.6	4,072	17.0

Source: Colorado Hospital Association Databank Program, Special request October 18, 2008

It should be noted that PMPM hospital costs were lower in the study regions where there were more facilities available, lending support to the theory that hospital competition results in lower costs.

Access to care is impacted by individuals' access to health care providers. To that end, Table 23 compares the number of primary care and specialty physicians relative to the population in the three study areas.

Table 23. Primary care and specialty physicians per 10,000 Population, 2006[11]

	Pueblo	Weld	Denver MSA
Primary care physicians	8.5	5.1	6.7
Specialty physicians	15.4	6.6	18.3

Sources: Peregrine Management Corporation, Colorado Department of Regulatory Agencies and Colorado State Demography Office.

These data suggest a number of factors that may be in play in the three study regions:

- The number of primary care physicians per 10,000 population was 27% higher in Pueblo compared to Denver and 67% higher compared to Weld. Weld's limited primary care workforce relative to the population is likely due to its rapid population growth which probably outstripped the health professions' workforce growth during the same time period.
- These data suggest that Pueblo did not experience a notable shortage of primary care physicians compared to Weld and Denver in 2006.
- The number of specialty physicians relative to the population in Pueblo was more than twice that of Weld; however, these differences paled when compared when compared to Denver. Specifically, Denver had 18.3 specialty physicians per 10,000 population compared to 15.4 specialty physicians per 10,000 population in Pueblo and 6.6 per 10,000 in Weld.
- Although this analysis did not examine type of specialist, Pueblo had 16% fewer specialists per 10,000 population compared to Denver.

AGE

In understanding the utilization of health care services and their relationship to insurance costs, the age breakdown of the population is important because different age groups tend to utilize health care services differently. After the first three years of life, children tend not to utilize health care services at the same rate as adults over the age of 45 years, with the notable exception of pregnancy and delivery-related utilization. As individuals age, the expected demand for health care services increases. To illustrate this point, in 2004 the average per-capita personal health care spending for Americans 65 years and older was more than five times that of children18 years and

[11] Primary care physicians include physicians with specialties in pediatrics, internal, family or general medicine, according to the Peregrine Management Corporation's database.

younger and three times that of adults between the ages of 19 and 64 years.[12,13] Table 24 summarizes the average age distribution of the population in the three study regions.

Table 24. Distribution of population by age group, Pueblo, Weld and Denver MSA, 2006

Age group	Pueblo	Weld	Denver MSA
0-18	26.0%	29.2%	27.3%
19-44	35.1%	41.0%	38.4%
45-64	24.2%	21.3%	25.4%
65+	14.6%	8.4%	8.9%
Total	**100%**	**100%**	**100%**

Source: Colorado State Demography Office

A significantly higher proportion of residents in Pueblo were aged 65 and older (14.6%) compared to Weld (8.4%) and Denver (8.9%). This is likely to have impacted total health care costs in Pueblo.

In 2006, based on membership analysis, the average age for commercially insured Pueblo residents across all carriers was 34.3 years compared to 33.1 years in Denver and 31.6 years in Weld. Over 52 percent of Pueblo's insured population was over age 35 as compared to less than 50 percent in Denver and 47 percent in Weld. Total costs in Pueblo for males in the 20-39 year age bracket in 2006 were higher than the other two regions. Slightly higher costs for men over 40 years and significantly higher costs for women ages 15 to 44 years were experienced in Weld compared to Pueblo and Denver.

If each area had the same demographic distribution as Denver, Pueblo would be expected to have claims 5.5 percent lower than they did in 2006 and Weld would have been expected to have claims 2.5 percent higher. In other words, all other factors being equal, Pueblo claims would have been expected to be 5-6 percent higher due to the age and gender distribution of its insured population.

CARRIER PRESENCE

In all three MSAs, there were numerous carriers present. All eighteen of the carriers participating in this study had at least some members in all three areas. No carrier had more than 38 percent of the market in any of the three areas. In Denver, there was one carrier that had a predominant presence and lower costs which can be assumed to impact the costs of health insurance by driving down average costs in the Denver market. If a similar scenario had been in place in Pueblo, it may have resulted in lower average costs.

[12] Hartman, M. et al. (2008). "U.S. health spending by age, selected years through 2004." *Health Affairs,* 27(1).

[13] Personal health care spending includes goods and services rendered to treat or prevent a disease or condition; it does not include program administration and investments such as capital formation and research and development.

MEMBER COST SHARING

An analysis was done by MSA for total allowable claims versus total paid claims. The allowed-to-paid claims ratio for all areas was similar, approximately 119 percent. Table 25 shows that as of 2006, the paid claims differences in the three areas were due to the cost of care rather than different benefit plans being sold in each area.

Table 25. Allowed and paid claims, cost sharing and premiums, 2006

All Carriers	Pueblo	Weld	Denver
Allowed PMPM	$256.46	$255.09	$234.46
Paid PMPM	$214.89	$213.71	$197.44
Cost share	19.3%	19.4%	18.8%
Difference due to cost of care	9.4%	8.8%	0.0%
Difference due to benefit plan	-0.5%	-0.5%	0.0%
Total paid claim difference	8.8%	8.2%	0.0%
PMPM Premium	$270.14	$248.10	$259.10
PMPM premium difference	4.3%	-4.2%	0.0%

Source: Membership, premium and claims data

UTILIZATION AND PROVIDER REIMBURSEMENT RATES

Inpatient Hospital

In general, the average length of stay decreased in all regions during the study period. In 2006 however, the average length of stay in Pueblo increased from 2.07 to 2.28 while admissions per 1,000 dropped by 20 percent. This is in contrast to a decrease in the average length of stay from 1.84 to 1.80 and 2.02 to 1.87 in Denver and Weld respectively. Admissions per 1,000 increased 4-5 percent in Denver and Weld between 2005 and 2006. This disparity between the regions could be due to unusually low utilization in Pueblo in 2006 or it could be related to data quality issues.

Ignoring the 2006 data, days per 1,000 lives in Pueblo decreased approximately 4 percent per year during the study period, while they increased in Denver about 1 percent per year and held steady in Weld.[14] In 2005, similar days per 1,000 lives were found in Denver and Pueblo while there was a 12 percent higher number of days per 1,000 lives in Pueblo than in Weld.

In general, costs per day increased 6-8 percent annually for all regions during the study period. In 2006, the allowable costs per day was 5 percent higher in Pueblo than in Denver and 29 percent lower than in Weld. In general, costs per admission increased 4-9 percent annually for all three regions. In 2006, allowable costs per admission was 33 percent higher in Pueblo than in Denver and 13 percent lower than in Weld.

[14] 2006 data were not included in this part of the analysis due to inconsistencies in the data submitted.

Overall, in 2005, when combining the allowable costs per day and actual utilization, PMPM inpatient hospital costs were 2 percent higher in Pueblo than in Denver and 17 percent lower than in Weld. However, in 2006, PMPM inpatient hospital costs were 8 percent lower in Pueblo than in Denver and 28 percent lower than in Weld. This was due to the low hospital utilization rates in Pueblo in 2006.

Table 26. In-patient costs and utilization, 2005 and 2006

	2005			2006		
	Pueblo	Weld	Denver	Pueblo	Weld	Denver
Admissions per 1,000 lives	248	227	278	200	239	289
Allowed/Admit	$2,873	$3,770	$2,506	$3,417	$3,940	$2,560
Days per 1,000 lives	513	459	511	455	448	520
Allowed/Day	$1,390	$1,866	$1,365	$1,498	$2,103	$1,422
PMPM Costs	$59.43	$71.31	$58.14	$56.84	$78.57	$61.58

Source: Membership and claims data

Outpatient Surgery

Outpatient surgery utilization decreased on an average annual basis by 5 percent in Denver and 7 percent in Weld and Pueblo during the study period. Although in 2006, outpatient surgery utilization in Pueblo was significantly higher than in both Denver and Weld (59% and 44% respectively).

The allowed cost per surgery increased, on average, 2 percent in Pueblo, 4 percent in Denver and 1percent in Weld on an annual basis during the study period. 2006 outpatient surgery costs in Pueblo were 8 percent lower than in Denver and 27 percent lower than in Weld.

Overall, the 2006 PMPM total cost for outpatient surgery in Pueblo was 47 percent higher than in Denver and 6 percent higher than in Weld. This was due to utilization in Pueblo being 59 percent higher than in Denver and 44 percent higher than in Weld. The allowed amount was 8 percent lower in Pueblo than in Denver and 27 percent lower than in Weld.

Table 27. Outpatient surgery costs and utilization, 2006

2006 Outpatient Surgery	Pueblo	Weld	Denver MSA
Surgeries per 1,000 lives	82.6	57.2	52.0
Allowed per surgery	$2,009	$2,736	$2,175
Total PMPM	$13.82	$13.04	$9.42

Source: Membership and claims data

Emergency Department

In general, emergency department (ED) utilization decreased significantly in Pueblo and Weld during the study period. In Denver, utilization increased slightly in 2004 and 2005 and then decreased back to 2003 levels in 2006. In 2006, ED utilization in Pueblo was 1 percent higher than in Denver and 37 percent higher than in Weld.

Average ED costs per visit increased about 6 percent in Pueblo and Denver and 9 percent in Weld. Costs in Pueblo in 2006 were 22 percent higher than in Denver and 1percent lower than in Weld.
Overall, the PMPM costs for ED utilization in Pueblo were 23 percent higher than in Denver and 35 percent higher than in Weld. This is likely due to utilization being significantly lower in Weld than in Pueblo and Denver's cost per visit being far below that charged in Pueblo.

Table 28. Emergency department costs and utilization, 2006

2006 Emergency Department	Pueblo	Weld	Denver
ED visits per 1,000 lives	100.6	73.6	99.3
Allowable cost per ED visit	$916	$925	$752
Total PMPM	$7.68	$5.67	$6.22

Source: Membership and claims data

Physician Office Visits

In general, physician office visit utilization decreased slightly annually (<2%) in all three regions during the study period. In 2006, physician office visit utilization in Pueblo was higher than in Denver and Weld by 15 percent and 17 percent respectively.

Average annual cost per office visit increased by 3 percent in Pueblo, 1percent in Weld and decreased by 2 percent in Denver. In 2006, costs per office visit in Pueblo were still 3 percent below Denver and 2 percent below Weld.

Overall, the 2006 PMPM cost of an office visit in Pueblo was 11percent higher than in Denver and 15 percent higher than in Weld, mainly due to utilization differences.

Table 29. Physician office costs and utilization, 2006

2006 Office Visits	Pueblo	Weld	Denver MSA
Office Visits per 1,000	3,188	2,714	2,783
Allowed per visit	$86	$88	$89
Total PMPM	$22.78	$19.79	$20.57

Source: Membership and claims data

Prescription Drugs

In 2006, utilization of brand name drugs was 26% higher in Pueblo than in Denver and 21percent higher than in Weld. Brand name drug utilization dropped about 8 percent per year for all regions during the study period. Generic drug utilization was 1 percent lower in Pueblo than in Denver and 18 percent higher than in Weld. A slower growth in generic brand utilization at 6 percent was experienced in Pueblo relative to 7 percent in Denver and 11 percent in Weld. Overall, prescription drug utilization remained relatively constant (combining generic and brand) with utilization being 9 percent higher in Pueblo than in Denver and 19 percent higher than in Weld during the study period.

Table 30. Brand name and generic prescription drug trend and utilization, 2006

	Rx	Pueblo	Weld	Denver MSA
Scripts per year (2006)	Brand	2.91	2.40	2.30
	Generic	4.07	3.46	4.11
Annual Trend	Brand	-8%	-8%	-8%
	Generic	6%	11%	7%
% Utilized (2006)	Brand	42%	41%	36%
	Generic	58%	59%	64%

Source: Membership and claims data

Brand name drug costs per script in 2006 were 6 percent lower in Pueblo than in Denver and 1 percent higher than in Weld. Costs increased the most in Pueblo at 15 percent per year in contrast to 14 percent in Weld and 13 percent in Denver. 2006 generic costs per script in Pueblo were 5 percent lower than in Weld and 10 percent lower than in Denver. A lower rate of increase at 6 percent per year was experienced in Pueblo as compared to 8 percent in Denver and 7 percent in Weld. Combining cost per script for both brand name and generic drugs, it can be seen that drugs costs were relatively similar between the three study regions, costs were only 2 percent and 1percent higher in Pueblo than in Denver and Weld respectively.

Table 31. Brand name and prescription drug costs, annual trend and proportion of total cost, 2006

Reimbursement	Rx	Pueblo	Weld	Denver MSA
Cost per script (2006)	Brand	$142.25	$140.38	$150.80
	Generic	$27.75	$29.19	$30.95
Annual Trend	Brand	15%	14%	13%
	Generic	6%	7%	8%
% of Cost (2006)	Brand	79%	77%	73%
	Generic	21%	23%	27%

Source: Membership and claims data

In general, PMPM prescription drug costs increased in all three regions between 6-7 percent per year during the study period. Overall prescription drug costs experienced in

Pueblo, as measured by PMPM costs, were 11percent higher than in Denver and 20 percent higher than in Weld. The higher PMPM costs in Pueblo were mainly due to a higher utilization of brand name drugs.

DISEASE PREVALENCE

Population-based health status and health risk factors

Table 32 summarizes three health status indicators that are known to affect health care costs. The estimates were derived from the 2003-04 data from the Behavioral Risk Factor Surveillance System maintained by the Colorado Department of Public Health and the Environment. The three health status indicators were found to be significantly different for the Pueblo and Denver populations at the 95 percent level.[15] Accounting for small sample sizes, there were no significant differences between the populations in Pueblo and Weld.

Table 32. Selected health status indicators in Pueblo, Weld and Denver MSA, FY 2003-04[16]

	Pueblo	Weld	Denver MSA
Percentage of population that was obese[17]	24.5%	25.4%	15.8%
Percentage of population diagnosed with diabetes	9.1%	3.9%	4.1%
Percentage of population that reported being in poor health	6.1%	3.5%	2.0%

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

- Approximately 25% of Pueblo's population reported that they were obese, compared to 16% in Denver. There were no statistical differences between Pueblo and Weld. Medical expenditures related to obesity have been shown to have a significant influence on overall health care costs.[18]
- The percentage of Pueblo residents with diabetes was twice that of residents in Denver, again, with no statistical differences with Weld. Based on a national analysis conducted by the Lewin Group, average per-capita health care

[15] Obesity rates for Weld and the Denver MSA were statistically different. No other statistically significant differences were found between the regions.
[16] It is important to note that this comparative analysis of health status indicators is based on estimates of the population in Pueblo and Weld and the Denver MSA. A subsequent analysis in this report documenting the prevalence of diabetes, morbid obesity, emphysema and lung and breast cancer is based on claims that were submitted by the insurance carriers as part of this study.
[17] Individuals with a Body Mass Index (BMI) greater than or equal to 30 are considered obese. BMI is calculated by dividing an individual's weight in kilos by the square of his or her height in meters.
[18] Finkelstein, E.A. et al. (2004). "State-level estimates of annual medical expenditures attributable to obesity." *Obesity Research.* 12: 18-24.

expenditures for people diagnosed with diabetes were 2.3 times higher than per-capita expenditures in the absence of the disease.[19]

- The proportion of the population that reported being in poor health was roughly three times higher in Pueblo than in Denver and two times higher than in Weld.

Other health status indicators and risk factors that could affect the cost of health care were also examined. No statistically significant differences were found between the three comparison regions with regard to the following indicators:

- Percentage of the population that smoked cigarettes;
- Percentage of the population that was overweight[20]; and
- Percentage of the population that had asthma, high blood pressure or high cholesterol.

In 2005-06, disparities in the rate of diabetes persisted between Pueblo, Denver and Weld. The statistical significance in obesity rates, however, was eliminated.

Claims analysis of Specific Health Conditions

Claims data for five specific conditions were analyzed as part of the study. The conditions were diabetes, morbid obesity, emphysema, lung cancer and breast cancer. Overall in 2006, these conditions accounted for 4 percent of the costs in Pueblo, 3 percent of the costs in Denver and 2 percent of the costs in Weld. Prescription drugs costs related to these conditions were not included in this part of the study. The following table shows the percent of total 2006 costs (not including prescription drugs) from the various conditions.

Table 33. Diagnosis of selected health conditions, 2006

Specific Health Condition	Pueblo	Weld	Denver MSA	Combined
Diabetes	1.0%	0.7%	0.8%	0.8%
Morbid obesity	0.2%	0.2%	0.3%	0.3%
Emphysema	0.0%	0.0%	0.0%	0.0%
Lung cancer	0.6%	0.4%	0.4%	0.4%
Breast cancer	2.0%	1.0%	1.6%	1.6%
Total	**3.8%**	**2.4%**	**3.1%**	**3.1%**

Source: Claims data

In 2006, a 45 percent higher incidence of diabetes diagnosis was found in Pueblo than in either Denver or Weld and twice the incidence of emphysema than the other two study regions. Below is a summary of diagnoses per 1,000 members for 2006.

[19] Dall, T. et al. (2008). The Lewin Group, prepared on behalf of the American Diabetes Association. "Economic costs of diabetes in the U.S. in 2007." *Diabetes Care.* 31: 596.
[20] Individuals with a BMI between 25.0 and 29.9 are considered overweight.

Table 34. Diagnoses of select health conditions relative to members, 2006

Specific Conditions	Pueblo	Weld	Denver MSA	Combined
Diabetes	40.1	27.8	27.5	28.0
Morbid obesity	1.3	1.2	1.6	1.5
Emphysema	1.6	0.8	0.8	0.8
Lung cancer	0.7	0.5	0.6	0.6
Breast cancer	5.1	3.6	4.7	4.7

Source: Membership and claims data

2006 costs per patient were analyzed for five health conditions, significantly higher costs associated with treating lung cancer and breast cancer were found in Pueblo than the other two study regions, while significantly lower costs for treating emphysema and morbid obesity were also observed. Table 35 shows these annual per patient costs for each health condition examined.

Table 35. Cost per patient for treatment of select health conditions, 2006

Specific Conditions	Pueblo	Weld	Denver MSA	Combined
Diabetes	$628	$654	$667	$664
Morbid obesity	$3,490	$5,286	$4,005	$4,062
Emphysema	$430	$604	$773	$740
Lung cancer	$22,689	$17,348	$15,990	$16,322
Breast cancer	$9,875	$7,381	$7,913	$7,956

Source: Membership and claims data

Overall, these selected health conditions added two dollars to the PMPM cost in Pueblo relative to Denver and three dollars more than in Weld. Of the two dollar difference between Denver and Pueblo, $0.57 was for diabetes and one dollar was for the treatment of breast cancer.

Highest Cost Diagnostic Groups

The distribution of costs by major diagnostic groupings was analyzed based on the 2006 claims data. The highest cost diagnostic groups were the same for all three regions and accounted for nearly 50 percent of the total costs, excluding prescription drugs. Table 36 displays the top five diagnostic groups with the percent of the PMPM associated with each excluding prescription drug costs.

Table 36. Cost of treatment for highest cost diagnostic groups as a percentage of total PMPM, 2006

Diagnostic Group	Pueblo	Weld	Denver MSA	Combined
Musculoskeletal System & Connective Tissue	13.7%	14.6%	13.4%	13.5%
Digestive System	10.9%	11.6%	10.0%	10.2%
Circulatory System	8.2%	9.2%	9.8%	9.7%
Injuries, Poisonings & toxic effects of drugs	8.3%	8.4%	9.1%	9.0%
Respiratory System	7.1%	6.0%	6.8%	6.7%
Total	48.2%	49.8%	49.1%	49.1%

Source: Membership and claims data

The highest costs experienced in Pueblo were in the respiratory system diagnostic group, which likely corresponds with the higher costs associated with lung cancer and high utilization rates for emphysema as seen in the "Specific Conditions" section above. The most common diagnoses for all three study regions were diseases and disorders of the respiratory system and diseases and disorders of the musculoskeletal system. Below are the cases per 1,000 lives for the top seven most common diagnostic groups based on 2006 claims data.

Table 37. Cases per 1,000 covered lives for select diagnostic groups, 2006

Diagnosis Grouping	Pueblo	Weld	Denver MSA	Total
Respiratory System	289.7	273.6	283.8	283.3
Musculoskeletal system & Connective tissue	211.6	199.9	204.9	204.8
Skin, Subcutaneous Tissue & Breast	158.7	155.6	179.2	176.9
Injuries, Poisonings & toxic effects of drugs	133.2	133.9	141.3	140.6
Endocrine, Nutritional & Metabolic	170.3	124.7	133.7	134.2
Digestive System	135.0	128.1	131.3	131.2
Circulatory System	139.6	107.3	121.3	120.9

Source: Membership and claims data

Much higher utilization rates for the endocrine, circulatory and musculoskeletal diagnostic groups were experienced in Pueblo when compared to the other two regions, although there was considerably higher utilization in Denver for the skin and injuries diagnostic groups than the other regions. The lowest utilization rates for nearly all of the top utilized diagnostic groups were found in Weld.

Preventive Care

Although mammograms and prostate screenings were a small percentage of total costs, they are often used as an indicator of the population's awareness and utilization of preventive health care services. Pueblo members experienced much higher mammogram utilization rates in 2006 and slightly higher utilization rates for prostate screening than in Weld or Denver with much lower costs per patient for both.

Table 38. Mammography utilization, cost per procedure and PMPM cost, 2006

Mammography	Pueblo	Weld	Denver MSA	Total
Utilization per 1,000	102.6	76.3	81.6	81.9
Cost per procedure	$68.25	$86.73	$118.23	$114.12
Total PMPM	$0.58	$0.55	$0.80	$0.78

Source: Membership and claims data

Table 39. Prostate screening utilization, cost per procedure and PMPM cost, 2006

Prostate Screening	Pueblo	Weld	Denver MSA	Total
Utilization per 1,000	34.3	23.0	34.0	33.2
Cost per procedure	$21.09	$31.72	$33.39	$32.89
Total PMPM	$0.06	$0.06	$0.09	$0.09

Source: Membership and claims data

Relationships between Cost Factors

In this study, a number of factors that affect the cost of health care and health insurance have been analyzed from claims and enrollment data. The interactions between several of these factors are discussed below.

Payer Mix

Payer mix is affected by income levels and the age of a population. According to the U.S. Census Bureau, 14.3 percent of Pueblo families were living below the federal poverty level in 2006. This compares to 9-10 percent in Weld and Denver.

In 2005, 18 percent of the Pueblo population was Medicare beneficiaries compared to 9-10 percent in Weld and Denver. Further, in Pueblo, 42 percent of the population was enrolled in the Medicare, Medicaid or the CHP+ program, a much higher percentage than in Weld (24%) or Denver (22%).[21]

[21] Some individuals are dually eligible in Medicaid and Medicare. Due to regional data limitations, they are counted in both health insurance categories.

These state and federal programs reimburse health care providers at significantly lower levels than commercial insurance so that providers will often shift the shortfall to commercial payers to make up the difference. Although it was not possible to quantify the extent of cost-shifting in this study, some impact is likely present. Cost-shifting results in higher health care costs for commercial payers than would otherwise occur on a more level playing field.

Mix of services

The most expensive component of health care is inpatient and outpatient hospital care. In Pueblo, inpatient and outpatient hospital care accounted for 50 percent of total health care costs during the study period, the percentage was less in Denver and higher in Weld.

Mix of providers

Research has shown that when there are fewer hospitals, there is less competition. The larger number of hospitals in Denver in all likelihood drives down overall hospital costs, whereas in Pueblo there are only two hospitals and in Weld there is only one. To this point, Weld had the highest hospital costs and Denver had the lowest during the study period.

Population demographics

On average, older adults use more health care services. The average age in the Pueblo insured population was higher than in Denver or Weld.

Carrier presence

There were no carriers in Pueblo that had a disproportionate market share or significantly higher or lower health care costs during the study period. In Denver, there was one carrier that had a predominant presence and lower costs which can be assumed to impact the costs of health insurance by driving down average costs in the Denver market. If a similar scenario had been in place in Pueblo, it may have resulted in lower costs.

Member cost sharing

The portion of health care costs paid by the member in the form of deductibles, coinsurance and co-payments affects the average cost of health insurance. Leif Associates found no significant differences between the three areas in the percentage of member cost-sharing.

Hospital utilization

Hospital utilization is affected by the demographics of the population and the availability of hospital beds. Where there are fewer hospital beds available, they will be used by the sickest patients, resulting in longer stays and more costly care.

CARRIER RATING PRACTICES

An analysis of carrier rating practices was conducted based on their 2006 rate filings submitted to the DOI. Carriers are required to file rates in Colorado on the three main lines of business: individual, small group and large group markets. For both indemnity

and PPO insurance and HMO filings, very similar rating methods were applied. The following section summarizes the carriers' rating methods for each market segment.

Individual Market

All of the carriers' rating methods in the individual market consisted of using the following core rating factors: base rates, plan design factors or rates, age, gender, geographic region and health status. Health status could include medical underwriting with or without specific inclusion of tobacco use.

Small Group Market

All carriers consistently took into account core rating factors similar to the large group market with the exception of gender. A few small group carriers used industrial classification factors. The core rating factors consisted of a carrier's base rate plus plan design, age, geographic region, family size, trend factors and administrative load. Most carriers also took into account the health status of individuals in a group. Health status usually is assessed with a health status questionnaire. Four carriers recently began using a new claim predictor method known as a "Risk Adjustor." This method uses the group's claims from each individual and their related diagnosis to assign the group an overall risk score in its rate setting process. Health status can no longer be used in small group rating beginning in January 2009 as a result of HB 1355, passed in the 2007 legislative session.

Large Group Market

All carriers consistently took into account core rating factors. These core rating factors consisted of group-specific experience and/or a carrier's base rate plus plan design, age and gender, geographic region, industrial classification and family size. Trend factors and an administrative expense load were then applied. For smaller accounts, credibility factors were applied.[22] A few carriers applied a group size factor and one carrier also applied participation and contribution factors in its rate setting process.

RISK CLASSIFICATION

One of the basic principles of developing rates for insurance products is risk classification. Risk classification is the process of grouping individuals or entities with similar risk characteristics so that differences in costs are recognized in setting insurance rates.

In a voluntary competitive health insurance market such as we have in the U.S., risk classification is vital to ensuring individual equity and the financial soundness of the system. Economic incentives such as the avoidance of adverse selection have led to the development of complex risk classification systems. Adverse selection is defined as the actions of individuals, acting in their own best interest or that of their families who are motivated directly or indirectly to mitigate the individual effects of these risk classification systems. The term underwriting is used to describe the process of classifying risks to manage the financial impact of adverse selection.

[22] A credibility factor is a measure of the statistical predictability of claims experience.

The need for risk classification systems to avoid the financial consequences of adverse selection in health insurance varies by market component. For each of the three major components of the health insurance market, risk classification has somewhat unique characteristics.

1. The Individual Market. Because we have a voluntary system of health insurance in the U.S., any person can forego the purchase of a health insurance policy and then later decide to purchase it. In most states, including Colorado, there are a number of HMOs and other insurance carriers that sell individual health insurance products. Adverse selection for these products comes in the form of individuals who do not have health insurance coverage but have acquired it with the knowledge that they have a physical condition that will require health care treatment. In the absence of a risk classification system, a person could essentially wait until they were ready to be admitted to a hospital and then purchase health insurance coverage to cover the cost. If such actions were allowed to happen, the rates for individual coverage would be unaffordable for all. As a result, the individual health insurance risk classification system requires that persons applying for coverage submit an application disclosing their health status and any known conditions. The individual insurance carriers are allowed to reject an applicant whose known health conditions are an indication that the cost of care for that person will result in a financial loss for the insurance company. Rates in this market typically vary by age, gender, geographic location, tobacco use and often by health status.

2. The Small Group Market. The small group market is defined in Colorado statutes as businesses with 50 or fewer employees; in Colorado, this includes business groups of one. This market experiences some of the same adverse selection characteristics as the individual market, especially with the smallest of businesses. Small business owners can decide to purchase or not purchase health insurance coverage for their employees. In the smallest of businesses, employees might also be family members. A change in health status for the owner or a family member can result in a change in the perceived need for health insurance, leading to adverse selection. For the small group insurance market to be financially viable, risk classification systems have been developed. However, because of some extreme rating practices employed by insurance carriers in the 1980's, this market became the focus of much legislative activity aimed at providing some level of protection for small businesses in the purchase of coverage for their employees with particular attention to affordability. This legislative activity and its consequences are discussed later in this report.

3. The Large Group Market. The potential for adverse selection diminishes for larger businesses because purchasing decisions are typically based on considerations other than the health condition of the owner or of one or more employees. The decision-makers in most large businesses recognize the need to provide health insurance coverage as an employee benefit in order to attract and retain a productive and committed work force. As a result, the methods used by the health insurers for risk selection in this market are much less complex than in the small employer and individual markets. They are also less regulated, since the

purchase of health insurance coverage is viewed by regulators as a transaction between a sophisticated buyer and seller and is often subject to significant negotiation and customization. Typically, rates for employees within a large group will vary only by family size.

THE HISTORY OF SMALL GROUP RATE REGULATION IN COLORADO

In the early 1980's, the typical underwriting approach to small group insurance was similar to that of individual coverage. A small firm employer who applied for insurance coverage would be required to submit health status information for all employees and dependents. The insurance carrier could decline to provide the coverage if it chose to do so. However, until about the mid-1980's this was not a significant problem for employers, since health care costs were not extremely high and coverage was readily available for most employers who wanted to purchase it. Small employer rates at that time typically varied by age, gender and geographic location.

In the mid-1980's, the cost of health care began to rise precipitously. The small employer health insurance market started to experience significant financial losses and health insurance carriers began to develop approaches to stem these losses. In addition to strengthening the underwriting criteria and accepting fewer employer applicants for coverage, the carriers began to aggressively manage the financial losses of groups that were currently insured.

Small employer coverage has traditionally been required by insurance law to be guaranteed renewable. This means that once coverage is purchased, it cannot be terminated unless the insurance company terminates all policies of the same type in that state. Since insurers could not terminate a group that represented a financial loss to the company, they developed a new rating approach known by a variety of names such as pooling, tier rating or rate banding. In this rating approach, the insurance company established a number of different rate levels (or pools, tiers, or bands) and assigned each group to that rate level based on its claims experience. The assignment was typically made based on the loss ratio of the group. Loss ratio is defined as the ratio of claims to premium and typically a loss ratio exceeding 80 percent represented a financial loss to the insurer.

Insurers also used *duration* as a risk classification factor during that period. Duration means the length of time a group has been insured by the carrier. Because the health status of employees was reviewed prior to the original issue of coverage and unhealthy groups were declined, it was expected that the claims experience of an accepted group would be good during the first few years of coverage and then gradually deteriorate over time. As a result, rates were set at a lower level initially and the rate changes from year to year were increased.

While in concept, this approach seemed to be just a further refinement of a rate classification system, it had no limits. Insurers began to impose extreme rate increases such that small firm groups could realize a 100 percent rate increase or more from one year to the next. If a person with a serious health condition underwent treatment in such a group, the employer would be forced to stay with the current insurer and pay

exorbitant premiums in order to maintain coverage since other insurers would decline to cover them. These extreme cases led to bad publicity for the insurers and caught the attention of business groups and legislators throughout the country.

Small group reform laws began to be passed in various states in the early 1990's. The purpose of these laws was generally to ensure that small employers could purchase health insurance coverage regardless of the health conditions of their employees and that there would be limits on rate increases. The laws took various but generally similar forms.

In Colorado, the initial small group reform law was passed in 1994 and was implemented on January 1, 1995. The bill, House Bill 94-1210, although passed over ten years ago, is still referred to by many as "1210." The key components of the new law were as follows:

- All small groups with 2 through 50 employees would be able to purchase, regardless of employee health status, one of two plan designs that had to be offered by all small group carriers. The plan designs were called the Basic and Standard plans.
- Rates for all small group plans could only vary by certain case characteristics: 1) age of employees in designated age bands; 2) geographic location of the employer limited to a separate rate for each metropolitan statistical area, one rate for all counties with 20,000 or fewer residents and one rate for all other counties; and 3) family size using four tier rate categories.
- The use of claim experience, health status, and duration of coverage or any other characteristic not specifically allowed in the law were no longer permitted in setting rates.

This rating approach was known as "modified community rating", meaning that a single rate applies to all small groups with only limited adjustments for specified population characteristics. This is in contrast to pure community rating which does not allow rating by any demographic characteristic and is currently used only in the State of New York.

The new law also included a definition of "Business Group of One" which essentially means a self-employed person. Business Groups of One were added to the definition of a small group beginning January 1, 1996 and were thereafter subject to the guarantee issue and rate limitation requirements of the law pertaining to small groups.

In July 1997, the small group provisions of the federal Health Insurance Portability and Accountability Act (HIPAA) were enacted in Colorado small group insurance law, requiring guarantee issue of all small group plan designs, not just the Basic and Standard plans.

After the implementation of the new laws, a few insurer-identified issues arose that led to further legislative refinement. Among the most troublesome to insurers were:

- The addition of Business Groups of One in 1996 introduced an element of adverse selection to the small group market that was of great concern to insurance carriers. Self-employed individuals with just an affidavit saying they owned a business suddenly had guaranteed access to small group coverage. Healthy self-employed individuals could obtain individual coverage, often at a lower rate, while the non-healthy individuals could purchase small group coverage. For established, larger insurance carriers who had a large block of business over which to spread risk, the impact was minimal. For smaller carriers who were new to the market during this time, and for whom Business Groups of One represented a large portion of their small group business, the impact was significant. It was well known and acknowledged that at least two carriers left the small group market in Colorado because of financial losses associated with, in part, Business Groups of One. This issue was eventually addressed by the legislature through the addition of more stringent documentation requirements and limited guarantee issue based on an open enrollment period.
- The geographic rating requirement also caused problems for carriers, especially those marketing on a statewide or rural basis. The specific issue was that the law required the grouping of non-MSA counties based only on population, not claims experience. A basic principle of risk classification is that subsidies will result when the price paid by an individual or a class of individuals fails to reflect differences in costs among the risk classes. There is no inherent cost difference between populations based geographic region alone. In other words, just because a county has 20,000 or fewer residents does not mean they have similar health care costs to other counties with 20,000 or fewer residents. As a result, counties in the resort regions of Colorado with well-documented higher health care costs were grouped with remote rural counties with lower health care costs. The geographic regions were not a logical basis for risk classification and led to unaffordable and unjustifiably high rates in low cost regions of the state in order to subsidize some of the highest cost regions. This problem was partially resolved with the passage of legislation in 2002 that allowed insurers to subdivide regions with appropriate cost documentation to be approved by the Insurance Commissioner.

Subsequent to the initial passage of Colorado's small group reform laws, there was pressure from insurance carriers to revise these laws to allow some recognition of health status in the setting of rates. Colorado's perceived lack of rating flexibility resulted in some national carriers avoiding the Colorado market. However, there was resistance from the business community that feared the return to pre-1980 rating practices. After efforts in numerous legislative sessions to implement some form of rating flexibility, the following changes were made to the law:

- Beginning on September 1, 2003, carriers could use additional factors in setting small group rates including smoking status, health status, claims experience and standard industrial classification.
- For the first year post-implementation (until 9/30/2004), small group insurers could give a discount of up to 15 percent based on the health status, claims experience and standard industrial classification of a small group. After

September 30, 2004, the rates could range from a discount of 25 percent to a rate increase of 10 percent based on these factors.

After a few years of this "rating flexibility," the legislature voted to reverse it based largely on the fact that overall rates continued to increase in the small group market and growing numbers of small employers were dropping coverage. Beginning on January 1, 2008, carriers could continue to provide a discount of 25 percent but not increase rates based on health status or claim experience. After January 1, 2009, rate discounts for health status or claim experience would no longer be allowed in Colorado.

GEOGRAPHIC RATING FACTOR

In Leif Associates' analysis of the geographic rating factor, geographic rating factors in Pueblo and Weld were normalized by comparing them to the Denver MSA. The carrier-weighted averages for the Pueblo geographic factor for individuals, small groups and large groups were 15.5 percent, 2.6 percent and 5 percent above Denver. With respect to Weld, the Pueblo area geographic factors were 11 percent higher for individuals and 8.9 percent and 16 percent lower than Weld for the small and large group businesses. The table below shows the normalized averages and range of weighted factors from 2006 filings.

Table 40. Summary of carrier geographic rating factors, 2006

	Summary of Carrier Geographic Factors					
	Pueblo		Denver MSA		Weld	
Market Segment	Weighted Average	Range	Weighted Average	Range	Weighted Average	Range
Individual	1.155	0.950 to 1.334	1.000	1.000	1.041	0.850 to 1.400
Small Group	1.026	0.940 to 1.114	1.000	1.000	1.126	0.940 to 1.428
Large Group	1.050	0.940 to 1.449	1.000	1.000	1.250	0.966 to 1.443

Source: Carrier rate filings submitted to the Colorado Division of Insurance, 2006

The geographic rating factor provision of small group rating laws allowed carriers to set a different rate for Pueblo, Weld and the Denver MSA, as well as any other MSA in the state. It is clear from this study that health care costs in the three regions were quite different and that carriers were likely to have justified establishing different rates, in part, based on provider reimbursement and utilization differences between the study areas. However, it is not readily apparent that the carriers set the geographic rating factor to reflect the actual costs of health care in the geographic areas included in the study. What is apparent is that there is little consistency among the carriers in the geographic rating of both Pueblo and Weld, with extremes observed in both directions for each MSA.

Appendix I. Detailed Study Methodology

The Colorado Division of Insurance provided four years of detailed claims, enrollment and summary premium data, along with historical rate filings from 2006 for purpose of this review. Leif Associates did not audit the data for completeness or accuracy. Enrollment data were used to the extent that membership could be tied to one of the geographic regions being studied. Leif Associates assumed that the carriers provided accurate Zip codes and geographic regions as requested by the DOI. Premiums, claims and membership data were initially reviewed for reasonability in terms of loss ratios and PMPM premiums and claims. Any carrier's data that could not be validated as reasonable was excluded from the analysis. It is the opinion of Leif Associates that the findings of this study were not significantly impacted by the exclusion of questionable data. Had the excluded data been used, it could have skewed the results, increased the expense of conducting the analysis and delayed the completion of the study.

In total, the DOI provided over 500 files and 45 gigabytes of data containing detailed claims, premium and enrollment information for 2003, 2004, 2005 and 2006.

All year references in this report are on an incurred basis, meaning they represent when the services were rendered and not necessarily when paid. No estimate of incurred but not reported (IBNR) was added as adequate claims runout was provided. The findings presented are based on actual findings from the data provided.

Detailed claims data were used to the extent that the claims could be tied to valid enrollment data for the month of service.

Geographic regions were determined based on Zip codes at the member level. Thus all claims associated with a member were assigned to the Pueblo (or other regions) regardless of where the services were actually rendered.

For various statistical results, Leif Associates was limited to the data provided. For example, data without a birth date was excluded from the age analysis, data without gender was excluded from the gender analysis, data without revenue code was excluded from utilization analysis and so forth. All carrier data was used for each reporting statistic unless noted otherwise.

Ages were calculated based on dates of birth and month of coverage during which the service was incurred.

Hospital lengths of stay for inpatient claims were calculated based on counting the difference between the start and end dates of service, omitting the date of discharge. Same day stays were counted as a length of stay of one.

Office visits were defined by CPT procedure codes starting with 992. Mammograms were defined by professional claims with CPT codes 76090 through 76092, 77051 through 77057 and G020 through G0207. Prostate screenings were defined by professional claims with CPT codes G0102, G0103 and 84152 through 84154.

Services paid via capitation by the carriers were included as appropriate in various tables. If fee- for-service equivalents were provided, that data were used for utilization summaries.

Emergency room visits and outpatient surgery costs were limited to claims with specific revenue codes for those services and did not include all associated costs for physicians, labs and the hospital if billed separately.
Utilization counts were based on counts of unique claims with allowed amounts greater than zero.

Generic and brand name drug identification was based on the coding as provided. For scripts not clearly identified as generic or brand, the drug was considered brand.

Allowed amounts were as provided in the claims data or the sum of the amount paid plus the member cost share plus any other payer share.

Summaries of the specific diseases (diabetes, morbid obesity, emphysema, lung cancer and breast cancer) were based on professional and facility claims with the disease shown as primary ICD9 code. Pharmacy claims were not included in the specific disease analysis.

The DOI also provided over 1,100 insurance carrier rate filings for 2006. The rate filings were those that had been submitted directly to the DOI (not via the SERFF system) and included all lines of business including non-health insurance products. Leif Associates limited its review only to those rate filings applicable to this study.

Leif Associates was provided the DOI survey results from its October 1, 2007 Pueblo Survey.

Throughout this report most of the findings were obtained from the analysis of the detailed data, the rate filings or the survey results. Other sources are either cited in the report or detailed below.

For the Payer Mix Table, i.e., *Relationships between Cost Factors* the data sources include:

- Number of facilities and employees based on 2002 Federal Census data
- Count of beds was based on CMS 2002 data

Appendix II. Carrier Data Request

DATA CALL FOR THE PUEBLO HEALTH INSURANCE STUDY
Colorado Division of Insurance
Due June 16, 2008

General Formatting Instructions

1. All information being requested is for your company's individual, small group, and large group lines of business within the following geographic regions:
   - Pueblo MSA: Pueblo County
   - Denver MSA: Adams, Arapahoe, Broomfield, Denver, Douglas, and Jefferson counties
   - Greeley PMSA: Weld County

   A person's information should be provided if that person's policy is rated based on one of these geographic regions. For example, if a person has an individual policy or is a member of a large group, geographic area would be determined by the person's place of residence. If a person is a member of a small group, the geographic area for that person would be determined by the employer's location.

2. Please provide all claims involving any type of health care rendered, including medical, mental health, and pharmacy claims.

3. Please include all claim lines with any payment by any party (carrier, member, or third party). Include all claim lines that include adjustments. Include all claim lines with positive or negative payments. It is the carrier's choice to include or exclude denied claims.

4. Include information for both self-funded and fully insured groups and individuals.

5. Please include all claims incurred from 1/1/03 through 12/31/06, processed through 3/31/08.

6. No specifications will be made on the field names or field characteristics such as length or data type (numeric/text). Removal of such criteria will hopefully expedite the data dump process.

7. Please include field names within each data set.

8. Data elements may be in any order in the file; they do not need to match the order in this document.

9. While this document provides a list of data elements that we believe will be needed in order to conduct the analysis, please provide any additional fields that would make your company's particular data more meaningful and understandable.

10. Possible file types include text, Access, or Excel. Please contact us if you have questions about submitting the data in an alternative format. If the data is supplied in text format, use a standard delimiter, such as tab or the pipe | character, to separate fields. Do not use a comma or space as the delimiter.

11. Data should be supplied electronically. The transfer of data can be via email, CD or diskette Data is to be submitted by June 16, 2008. Submit data to:

Colorado Division of Insurance
Attn: Carol O'Bryan
market.analysis@dora.state.co.us
1560 Broadway, #850
Denver, CO 80202
303-894-7481

Membership Data

1. The membership data should contain a historical snapshot of membership activity. This must include information for all members covered any time during 1/1/03 to 12/31/06.

2. It is logical that the membership database could contain multiple rows per member. We would expect that the Member Effective Date field would contain the date on which the member became effective in a particular zip code and line of business, and the Member Termination Date would be the last date on which the member was effective with that zip code and line of business. Please inform us if your company's data should be interpreted differently.

3. There should be only one line for each person at any one point in time. Time periods for a person should not overlap in multiple lines.

4. We must obtain at least one line for each member; dependents need to be separated onto their own lines with their own unique member ID #s.

5. Each member should only ever have one Unique Member ID #, throughout all membership and claims data.

Data Element	Description
Unique Member ID #	Identifies each unique member. This ID for each member must be consistent throughout all other requested databases.
Member Date of Birth	
Member Gender	
Relationship	Subscriber, Spouse, Dependent Child

Zip Code	This is the zip code used for rating. i.e., the member's zip code for individuals and large groups, or the employer's zip code for small groups.
Line of Business	Individual, small group, large group, or other
Member Effective Date	Effective start date for each zip code/line of business combination
Member Termination Date	Last date for each zip code/line of business combination

Facility Claims (Billed on UB)

Please provide facility claims data incurred 1/1/03 through 12/31/06, processed through 3/31/08.

Claims Data Element	Description
Claim Number	
Claim Line Number / Sequence Number	Provide a key to whether the line number has specific meaning for adjustment purposes.
Unique Member ID #	Identical to membership file member ID
Facility ID #	Tax ID number
Facility Name	
Facility Zip Code	
Billed Amount	
Allowed (Contracted) Amount	Amount allowed per any provider network contracts that may apply
Amount Paid by Member	Copay + Deductible + Coinsurance, plus another other member payments
Amount Paid by Plan	
Any Other Dollar Amount Paid	Any other amount paid, such as COB or subrogation payment
Date Paid	
Claim Service 'From' Date	Start of incurred date
Claim Service 'To' Date	End of incurred date
Place of Service Code	
Place of Service Description	
Service Quantity	
Primary Diagnosis ICD9 Code	Provide up to 5 digits where possible.
Primary Diagnosis Description	Optional
Secondary Diagnosis ICD9 Code	Provide if 2nd ICD9 is available.
Secondary Diagnosis Description	Optional

Procedure Code	CPT4, HCPC, or other procedure code, including modifiers if any
Revenue Code	
DRG Code	Provide if available

Professional Claims (Billed on HCFA)

Please provide professional claims data incurred 1/1/03 through 12/31/06, processed through 3/31/08.

Claims Data Element	Description
Claim Number	
Claim Line Number / Sequence Number	Provide a key to whether the line number has specific meaning for adjustment purposes.
Unique Member ID #	Identical to membership file member ID
Provider ID #	Tax ID number
Provider Name	
Provider Zip Code	
Billed Amount	
Allowed (Contracted) Amount	Amount allowed per any provider network contracts that may apply.
Amount Paid by Member	Copay + Deductible + Coinsurance, plus another other member payments
Amount Paid by Plan	
Any Other Dollar Amount Paid	Any other amount paid, such as COB or subrogation payment
Date Paid	
Claim Service 'From' Date	Start of incurred date
Claim Service 'To' Date	End of incurred date
Place of Service Code	
Place of Service Description	
Service Quantity	
Primary Diagnosis ICD9 Code	Provide up to 5 digits where possible.
Primary Diagnosis Description	Optional
Secondary Diagnosis ICD9 Code	Provide if 2nd ICD9 is available.
Secondary Diagnosis Description	Optional
Procedure Code	CPT4, HCPC, or other procedure code, including modifiers, if any
Cap Indicator	Yes/No

Fee-for-service Equivalent	If no payment is made by the Plan because the service is capitated, then either provide a fee-for-service equivalent field in the professional claims database, or provide a separate capitation database, as requested on page 5.
DRG Code	Provide if available

Pharmacy Claims

Please provide prescription drug claims data incurred 1/1/03 through 12/31/06, processed through 3/31/08.

Claims Data Element	Description
Claim Number	
Claim Line Number / Sequence Number	Provide a key to whether the line number has specific meaning for adjustment purposes.
Unique Member ID #	Identical to membership file member ID
Pharmacy ID #	Tax ID number
Pharmacy Name	
Zip Code	
Billed Amount	
Allowed (Contracted) Amount	Amount allowed per any contracts that may apply.
Amount Paid by Member	Copay + Deductible + Coinsurance, plus another other member payments
Amount Paid by Plan	
Any other dollar amount paid	Any other amount paid, such as COB or subrogation payment
Date Filled	
Date Paid	
NDC Code	
Drug Name	
Generic/Brand Indicator	
Days Supply	
AHFS Therapeutic Classification	

Premium Data

Provide information for all premiums billed for the period of coverage from 1/1/03 through 12/31/06.

Data Element	Description
Billed Premium Amount	
Zip Code	This is the zip code used for rating and determining premium. I.e., the member's zip code for individuals and large groups, or the employer's zip code for small groups.

Line of Business	Individual, small group, large group, or other
Year	Year it was billed or earned

Capitation Data

1. Provide information for all capitation payments paid 1/1/03 through 12/31/06.

2. If your company paid capitation amounts during this time period, we need to obtain an estimation of those payments by geographic region and line of business. Your company may decide whether to provide us with the "Fee-for-service Equivalent" field in the detailed professional claims data for those claims that were capitated, or instead, provide us with the following database.

Data Element	Description
Capitation Amount	
Zip Code	This is the zip code of the provider.
Line of Business	Individual, small group, large group, or other
Year	Year it was incurred

Other Information

Please provide us with contact information for a person within your company who will be our contact for obtaining this information.

Appendix III. Glossary of Terms

Adverse Selection. The actions of individuals, acting on their own behalf or that of others and who are motivated directly or indirectly to act in their own best interest with regard to the risk classification system.

Allowed Costs. Typically, billed charges are reduced to a lower "allowed" level of charges because of contractually agreed upon provider reimbursement discounts or fee schedules. It is at the allowed level that carrier and member payment liability is determined.

Anticipated Medical Loss Ratio. The ratio of claims to premiums that is expected in a forthcoming rating period.

Benefit Limitations. Maximum payment, visit, or day limits placed on specific benefits provided in a health plan.

Claim Costs. Payments made by insurance carriers for allowable claims submitted.

Claims Experience. The historical claims of an insured group related to the premiums received.

Coinsurance. A form of medical cost-sharing in a health insurance plan that requires an insured person to pay a stated percentage of medical expenses after a deductible amount, if any, has been paid.

Co-pay. A form of medical cost sharing in a health insurance plan that requires an insured person to pay a fixed dollar amount when a medical service is rendered.

Contribution Factor. A risk factor that is used in the rate setting process to reflect the claim risk associated with the employees' portion of the rate that an employee pays.

Cost of Health Care. In the case of setting health insurance premiums, it is an aggregate measure of health expenditures that includes the claims expenditures and utilization of services of a population being insured.

Cost of Health Insurance. Expenditures made on behalf of employers and individuals to pay for a health insurance policy.

Credibility Factor. A measure of the statistical predictability of claims experience.

Deductible. A fixed dollar amount which an insured party must pay before the insurer starts to make payments for covered medical services.

Family Size. The number and type of family members represented in a premium rate billed by an insurance carrier.

Geographic Area. Specified county(s) or zip code(s) that are used as a rating criterion.

Geographic Rating. A rate setting factor that applies geographically-based risk factors to base rates in establishing a final premium rate.

Guarantee Issue. An insurance policy provision under which all eligible persons who apply for insurance coverage and who meet certain conditions are automatically issued an insurance policy.

Incidence. The frequency with which something, such as disease, appears in a particular population or area.

Individual Market. An insurance market segment comprising individuals that are not insured through an employer and not eligible for Medicare or Medicaid but are instead covered under an individual contract for health coverage.

Industrial Classification Factor. A risk factor applied to group insurance products that reflects the claim risk associated with a certain industry.

Large Group Market. An insurance market segment comprising employers with more than 50 employees. Often, the large group market is exempted from state laws because it self-insures against health care claims and then falls under federal jurisdiction, specifically the Employee Retirement Security Act (ERISA).

Limited Benefits. Health insurance coverage that includes service restrictions related to annual payments, number of visits or days per calendar year and reimbursements per visit or hospitalization day.

Medical Loss Ratio. The ratio of claims paid to premiums received.

Medical Screening. The part of the underwriting process where applicants are required to pass a medical examination prior to their approval for coverage.

Medical Underwriting. The evaluation of health questionnaires submitted by all proposed plan members to determine the insurability of a group.

Member. An individual covered by a health insurance policy.

Member Months. The number of months of coverage accrued by insured members during a specific period of time.

Paid Claims. The dollar amount of payments made for patient claims during a specified time period.

Paid Loss Ratio. The ratio of claims paid to premiums received.

Participation Factor. The rating factor used in group rate setting that reflects the claims risk associated with the employees and dependants enrolled in a group plan.

Per Member per Month (PMPM). A metric used to calculate the claims costs and/or premiums over a specific period of time by dividing claims or premium dollars by enrolled member months.

Profit / Contribution to Surplus. The net surplus resulting from premium revenues less claims and administrative expenses.

Rating Factors. Rating criteria that includes age, gender, smoking status, health status, geography, claims experience and industrial classification based on standard industrial classification codes (SIC) and others.

Risk Adjustment. A statistical adjustment to account for risk factors that are independent of the quality of care provided and beyond the control of the plan or provider, such as a patient's gender and age or the seriousness of a patient's illness or illnesses.

Small Group Market. A health insurance market segment comprising employers with 50 or fewer employees.

Trend Factor. A rating factor that reflects the rate of change in health care costs or utilization over time.

Underwriting. The process of identifying and classifying risks that are associated with an individual or group.