FY 07–08 Colorado Coordination of Care Phase I: Utilization of Services for Members Diagnosed With a Serious Mental Illness

August 2008

This report was produced by Health Services Advisory Group, Inc. for the Colorado Department of Health Care Policy & Financing.

HSAG Health Services Advisory Group

1600 East Northern Avenue, Suite 100 • Phoenix, AZ 85020

Phone 602.264.6382 • Fax 602.241.0757

CONTENTS

Introduction

The FY 07–08 Colorado Coordination of Care Focused Study Phase I: Utilization of Services for Members Diagnosed With a Serious Mental Illness (SMI) is part of a Colorado statewide initiative to improve communication between behavioral and physical health care providers treating individuals diagnosed with a serious mental illness.

The goal of this study was to provide baseline information on utilization of medical services by members diagnosed with an SMI and address the following question: *When members with an SMI access medical care, where and how frequently do they access this care and what are the three most common diagnoses?*

With this information, the Colorado Department of Health Care Policy & Financing (the Department) and health plans (Denver Health Medicaid Choice [DHMC], Rocky Mountain Health Plans [RMHP], the Primary Care Physician Program [PCPP], and fee for service [FFS]) will be better informed about the utilization patterns of this population and be positioned to develop effective interventions targeting improved coordination among health professionals treating those with an SMI.

Methodology

The study was performed using administrative claims data for the entire eligible population; sampling was not performed. The eligible population included all Medicaid members identified by the Department with a qualifying SMI diagnosis who were 21 years of age or older as of July 1, 2006. Members had to be continuously enrolled in the same Colorado Medicaid health plan (FFS, PCPP, DHMC, or RMHP) from July 1, 2006, through June 30, 2007, with one or more gaps in enrollment totaling no more than 60 days.

Summary of Findings

The results outlined below and in other sections of this report can serve as baseline data for a future study assessing the documentation of coordination of care. Table 1-1 provides a summary of results for the first three measures evaluated in the study. Results are displayed for Colorado Medicaid, by individual health plan, and by the health plans grouped together excluding FFS ("Health Plans & PCPP"). Specific comments pertaining to the analysis of "Health Plans & PCPP" results is provided in the Results section.

Table 1-1—Utilization of Services for Individuals With an SMI					
Health Plans	**Population Size**	**Measure 1 [A]**	**Measure 2 [B]**	**Measure 3a [C]**	**Measure 3b [D]**
RMHP	454	88.3%	45.6%	17.4%	2.0%
DHMC	1,095	71.2%	19.2%	6.1%	8.4%
PCPP	1,504	60.2%	27.3%	11.0%	3.3%
Health Plans & PCPP	3,053	68.4%	27.1%	10.2%	4.9%
FFS	7,388	52.3%	27.6%	10.5%	3.5%
Colorado Medicaid	**10,441**	**57.0%**	**27.4%**	**10.4%**	**3.9%**

[A] **Measure 1** = Percentage of members with an SMI diagnosis who had at least one preventive/ambulatory visit in an outpatient setting during the measurement period.
[B] **Measure 2** = Percentage of members with an SMI diagnosis who had at least one emergency room visit during the measurement period.
[C] **Measure 3a** = Percentage of members with an SMI diagnosis who had at least one inpatient admission in a physical health hospital during the measurement period.
[D] **Measure 3b** = Percentage of members with an SMI diagnosis who had at least one inpatient admission in a mental health hospital during the measurement period.

Overall, almost 6 out of 10 members diagnosed with an SMI had a preventive/ambulatory office visit with a primary care-type physician (Measure 1) during FY 06–07. Individual health plan rates ranged from 52.3 percent (FFS) to 88.3 percent (RMHP). Comparing each health plan's population size to its corresponding rate reveals an inverse relationship between the two. In other words, for Measure 1, the smaller the health plan's SMI population, the higher the rate of preventive/ambulatory visits.

Additionally, of the Colorado Medicaid members diagnosed with an SMI, 27.4 percent of the members had one or more emergency room visits during FY 06–07. RMHP had the highest rate (45.6 percent) and DHMC had the lowest rate (19.2 percent) among the health plans while FFS and PCPP had rates between those of RMHP and DHMC, and they were essentially the same (27 percent). A high rate of emergency room visits may suggest a need to evaluate outpatient management programs.

In general, 10.4 percent of Colorado Medicaid members diagnosed with an SMI had one or more inpatient admissions to a physical health hospital during the measurement period. The FFS and PCPP rates were similar to the overall rate at 10.5 percent and 11 percent, respectively. RMHP had the highest rate at 17.4 percent while DHMC had the lowest rate at 6.1 percent. These results suggest that health plans with a lower inpatient admission rate may have better outpatient medical management of members. In addition, this finding may reflect geographic differences among the health plans' network coverage.

Almost 4 out of 100 members diagnosed with an SMI had an inpatient admission to a mental health hospital during FY 06–07. Individual health plan rates ranged from 2 out of 100 (RMHP) members diagnosed with an SMI having an inpatient admission to a mental health hospital to slightly more than 8 out of 100 (DHMC). FFS and PCPP members diagnosed with an SMI had a similar rate—3.5 and 3.3 percent, respectively.

Table 1-2 displays the number of Colorado Medicaid members with an SMI diagnosis, the number of visits, average visits per member, and the three diagnoses that occur most frequently by health care delivery setting. Health plan-specific utilization is discussed in the Results section of this report.

Table 1-2—Visits per Member and Top Three Diagnoses for Individuals With an SMI

				Inpatient Admission	
		Preventive/ Ambulatory Visit	Emergency Room (ER) Visit	Physical Health Hospital	Mental Health Hospital[A]
Total number of SMI members		10,441	10,441	10,441	10,441
Total number of visits		44,688	8,737	1,691	410
Average visits per member		4.28	0.84	0.16	0.04
Top Three Diagnoses[B]					
Diagnosis 1	**Description**	*Diabetes mellitus* (250)	*Other symptoms involving abdomen and pelvis* (789)	*Pneumonia, organism unspecified* (486)	*Schizophrenic disorders* (295)
	N	2,362	629	62	197
	%	5.3%	7.2%	3.7%	48.0%
Diagnosis 2[C]	**Description**	*Other and unspecified disorders of back* (724)	*Symptoms involving respiratory system and other chest symptoms* (786)	*General symptoms* (780) *Symptoms involving respiratory system and other chest symptoms* (786)	*Episodic mood disorders* (296)
	N	1,930	573	56	148
	%	4.3%	6.5%	3.3%	36.1%
Diagnosis 3	**Description**	*Special investigations and examinations* (V72)	*General symptoms* (780)	*Disorders of fluid, electrolyte, and acid-base balance* (276)	*Adjustment reaction* (309)
	N	1,689	458	41	17
	%	3.8%	5.2%	2.4%	4.1%

[A] Only the member's first admission in the measurement period was tracked for mental health inpatient admissions.
[B] Diagnosis codes from the primary fields were assessed based on the first three digits of the ICD-9-CM codes.
[C] Categories with more than one diagnosis indicate a tie for the frequency of those diagnoses.

Overall, members diagnosed with an SMI had a little more than four visits per member (4.28) in the preventive/ambulatory setting. Colorado Medicaid members diagnosed with an SMI are accessing preventive/ambulatory services for physical health care an average of 5 to 100 times more often

than the other health care delivery settings (ER, physical health inpatient admission, mental health inpatient admission). In fact, the total number of preventive/ambulatory visits was four times greater than all other settings combined. This finding suggests an opportunity to assess for documentation of coordination of care between physical and behavioral health providers in the preventive/ambulatory setting. Colorado Medicaid members diagnosed with an SMI were least likely to have a mental health inpatient admission (0.04 visits per member) as depicted in Table 1-2.

The three diagnoses that occurred most frequently for members in the preventive/ambulatory setting were *diabetes mellitus, other and unspecified disorders of back* and *special investigations and examinations.* Code V72 (*special investigations and examinations*) could be investigated to determine if provider/billing issues are present.

For the emergency room setting, the three diagnoses that occurred most frequently were *other symptoms involving abdomen and pelvis, symptoms involving respiratory system and other chest symptoms,* and *general symptoms.* Similar to Code V72, Code 780 (*general symptoms*) could be investigated to determine how a nonspecific ICD-9-CM code was entered as the primary diagnosis for an emergency room visit.

Pneumonia, organism unspecified; *general symptoms/symptoms involving respiratory system and other chest symptoms* (tied for second place); and *disorders of fluid, electrolyte, and acid-base balance* were the three diagnosis that occurred most frequently for physical health inpatient admissions.

The three diagnoses that occurred most frequently for mental health inpatient admissions were *schizophrenic disorders, episodic mood disorders,* and *adjustment reaction.* Several diagnoses were used to define the SMI population. It was clear that SMI members diagnosed with *schizophrenic disorders* and *episodic mood disorders* were more likely to have a mental health inpatient admission. For members diagnosed with an SMI, 84.1 percent of the mental health inpatient admissions analyzed had either *schizophrenic disorders* (48 percent) or *episodic mood disorders* (36.1 percent) as the primary diagnosis.

Conclusions and Recommendations

Conclusions

The primary findings from this focused study were the following (for a detailed analysis of health plan findings, refer to the Results section):

- Overall, almost 6 out of 10 members diagnosed with an SMI had a preventive/ambulatory visit in FY 06–07. Members diagnosed with an SMI had four times more visits to a preventive/ambulatory outpatient setting than they did to all other settings combined, with an average of 4.28 visits per member. This finding indicates that members diagnosed with an SMI were accessing preventive/ambulatory care more often than health care in other delivery settings. RMHP had the highest rate of preventive/ambulatory visits with almost 9 out of 10 members accessing ambulatory/preventive care within the study period.

- For emergency room visits, almost 5 out of 10 RMHP members diagnosed with an SMI had a visit compared to nearly 2 out of 10 for DHMC and almost 3 out of 10 for FFS and PCPP. The average number of emergency room visits for RMHP members diagnosed with an SMI was two to four times higher than the other health plans. This finding may reflect geographic differences among the health plans' network coverage.
- The Colorado Medicaid rate for members diagnosed with an SMI admitted to a physical health hospital was 10.4 percent. In addition, those members averaged 0.16 admissions per member during FY 06–07. RMHP members diagnosed with an SMI had approximately 1.5 times more admissions per member (0.24) than the other health plans (admissions per member ranged from 0.15 to 0.16).
- Overall, almost 4 out of 100 members diagnosed with an SMI had an inpatient admission to a mental health hospital. Colorado Medicaid members diagnosed with an SMI had 0.04 admissions per member. About 8 out of 100 DHMC members diagnosed with an SMI had a mental health inpatient admission compared to the other health plans, which had about 2 or 3 out of 100 members with an admission. In addition, DHMC had 2 to 4 times more admissions per member than the other health plans.

Recommendations

Based on the above conclusions, HSAG recommends the following:

- Of all the health care delivery settings analyzed for the Colorado Medicaid population diagnosed with an SMI, the ambulatory/preventive setting had the highest utilization. A future coordination-of-care study between physical and behavioral health providers could investigate documentation of coordination of care in the preventive/ambulatory setting.
- To facilitate coordination of care between behavioral health and physical health providers, the Department may consider providing each health plan with a list of its members diagnosed with an SMI on a predetermined time interval. This would allow health plans to identify health care needs for their members diagnosed with an SMI. In addition, the Department may consider having quarterly regional meetings between the health plans and behavioral health organizations.
- When health plans are able to identify their members with SMI diagnoses, future studies could compare the rates identified in this study with rates for members not diagnosed with an SMI.
- Codes V72 (*special investigations and examinations*) and 780 (*general symptoms*) may warrant further investigation to determine if there may be provider/billing issues among the health plans. Furthermore, any visits with a primary diagnosis that included *general symptoms* in the description could also be investigated. For the health care settings analyzed in this study, more specific primary diagnoses were anticipated.
- Health plans may want to further investigate the utilization of services for those members diagnosed with an SMI as identified by the Department.

Introduction

Coordination of care can be used to describe a variety of services provided to chronically ill individuals and their families. In the health care system, care coordination may involve planning treatment strategies; organizing care to avoid duplication of diagnostic tests and services; sharing information among health care professionals, other program personnel, and family; and facilitating access to services. Care coordination in the social service and public health systems may involve locating and accessing financial assistance programs and public health services. Care coordination in the home setting may mean organizing home nursing and therapy services, respite care, and adapting the home to support special technology such as a ventilator or a motorized wheelchair.[2-1]

For the purposes of this study, coordination of care refers to communication between the behavioral and physical health care providers of an individual diagnosed with a serious mental illness (SMI).

Serious mental illness can be loosely defined as a mental illness that is so severe that it, in and of itself, is potentially disabling. Common SMI diagnoses include schizophrenia, major depression, and bipolar disorder.[2-2]

Several recent studies have found that individuals with SMI are more likely to have poor physical health than those who do not have mental illness.[2-3] This increased risk can be attributed to various factors. For example, individuals with SMI experience increased vulnerability due to homelessness, trauma, unemployment, poverty, and/or social isolation. Many antipsychotic medications used to treat SMI have side effects that include weight gain, diabetes, dyslipidemia, insulin resistance, and metabolic syndrome. Additionally, symptoms of mental illness can mask symptoms of medical/somatic illnesses. All of this can be compounded by the impact of symptoms associated with SMI such as fear of accessing care. Research has demonstrated that people with SMI die, on average, 25 years earlier than the general population.[2-4]

The Agency for Healthcare Research and Quality (AHRQ) reports that "schizophrenia and related disorders" and "affective disorders (depression and bipolar disorders)" ranked fourth and fifth,

---

[2-1] Care Coordination: Integrating Health and Related Systems of Care for Children With Special Health Care Needs [abstract]. *Pediatrics*. American Academy of Pediatrics Committee on Children With Disabilities. 1999; 104: 978–981. Available at: http://aappolicy.aappublications.org/cgi/content/full/pediatrics;104/4/978

[2-2] Crowly J, O'Malley M. *Profiles of Medicaid's High Cost Populations*. The Kaiser Commission on Medicaid and the Uninsured. December 1996.
Available at: http://www.kff.org/medicaid/upload/7565.pdf

[2-3] Semansky R, Koyanagi C, Director P, Center B. Improving the Coordination of Physical and Mental Health Care under Medicaid [abstract]. Academy Health Meeting.
Available at: http://gateway.nlm.nih.gov/MeetingAbstracts/102275077.html

[2-4] Parks J, Svendsen D, Singer P, Foti M. *Morbidity and Mortality in People with Serious Mental Illness*. National Association of State Mental Health Program Directors Medical Directors Council. October 2006. Available at: http://www.nasmhpd.org/general_files/publications/med_directors_pubs/Technical%20Report%20on%20Morbidity%20and%20Mortaility%20-%20Final%2011-06.pdf

respectively, as the most expensive conditions billed to Medicaid in 2004. These conditions accounted for more than $5 billion dollars in hospital charges.[2-5]

The Colorado Department of Health Care Policy & Financing (the Department) has made increased coordination of care between behavioral health and physical health care providers a high priority and has initiated activities within both systems to begin exploring ways to improve coordination of care for one of Colorado's most vulnerable populations.

Background

The Department hosted a joint discussion between the Medical Quality Improvement Committee (MQuIC) and Behavioral Quality Improvement Committee (BQuIC) in August 2007. Committee members shared ideas for a statewide performance improvement project (PIP) on coordination of care for Medicaid members. The behavioral health organizations (BHOs) subsequently initiated development of baseline PIPs on coordination of care for SMI beneficiaries.

After subsequent discussions between the Department and the physical health care plans, it was determined that the first activity toward improved coordination of care would be to gain a more comprehensive understanding of the Medicaid behavioral health care system and where and how members with SMI accessed medical care.

In an effort to immediately begin addressing the needs of the physical health plans, the Department arranged an educational presentation at the February 2008 MQuIC meeting. Representatives from the two BHOs most likely to provide services for members enrolled in the physical health plans (based on counties served in common) made presentations at the February MQuIC meeting. A Department BHO contracts manager and the executive director of the Colorado Behavioral Healthcare Council also participated.

The Department contracts manager provided an overview of the BHO system and how the BHOs are required to serve clients accessing mental health services. A map of the State identifying which counties are assigned to each BHO and a fact sheet summarizing Colorado Medicaid's behavioral health program were distributed to the health plans. Because the behavioral health system is not standardized across the various regions, BHO representatives provided brief overviews of how members access services at each of the organizations. They also provided the health plans with detailed contact lists for the BHOs and the community mental health centers with which each BHO contracts.

Throughout the course of this open discussion, participants shared concerns regarding medical records release, Health Insurance Portability and Accountability Act of 1996 (HIPPA) regulations, and other barriers to coordination of care. Participants also made suggestions for overcoming barriers, including establishing local problem-solving work groups and modifying intake forms to allow for documentation of a member's primary care physician (PCP) and/or behavioral health care provider. Representatives from both the physical health plans and the BHOs agreed to continue these discussions.

[2-5] The National Hospital Bill: The Most Expensive Conditions, by Payer, 2004. Available at: http://www.hcup-us.ahrq.gov/reports/statbriefs/sb13.pdf

Study Goals and Objectives

The goal of this study is to provide baseline information on utilization of medical services for members diagnosed with an SMI. This focused study will address the following question: *When members with an SMI access medical care, where and how frequently do they access this care and what are the three most common diagnoses?*

With this information, the Department and health plans will achieve the objective to be better informed and positioned to develop effective interventions to improve coordination with the behavioral health professionals treating this population.

Overview

The FY 07–08 Colorado Coordination of Care Focused Study Phase 1: Utilization of Services for Members Diagnosed With a Serious Mental Illness was conducted to provide baseline medical services utilization information to members diagnosed with an SMI. The FY 07–08 study addressed the following question: *When members with a serious mental illness access medical care, where and how frequently do they access this care and what are the three most common diagnoses?*

Measures

Four measures were developed collaboratively by the Department, Colorado Medicaid health plans, and HSAG. It was the intention of the group to design indicators that would yield information that could be used as the basis for future coordination-of-care studies.

The FY 07–08 Coordination of Care, Phase 1 focused study included the following measures:

Measure #1: **Percentage of members with an SMI diagnosis who had at least one preventive/ambulatory visit in an outpatient setting during the measurement period with a primary care type of provider**

- A primary care type of provider was defined as follows: family practice, general practice, internal medicine, obstetrics/gynecology, gerontology, nurse practitioner, physician assistant, and pediatrics.

Measure #2: **Percentage of members with an SMI diagnosis who had at least one emergency room visit during the measurement period**

Measure #3a: **Percentage of members with an SMI diagnosis who had at least one inpatient admission in a physical health hospital during the measurement period**

Measure #3b: **Percentage of members with an SMI diagnosis who had at least one inpatient admission in a mental health hospital during the measurement period**

Measure #4: Utilization of services by members with an SMI diagnosis during the measurement period

- Service utilization was defined as follows: number of visits, average visits per member, and the top three diagnoses for members by preventive/ambulatory care visits, emergency room visits, and physical and mental health inpatient admissions (only the member's first admission in the review period and its associated primary diagnosis was tracked for mental health inpatient admissions).

Data Collection

The eligible population included all Medicaid members identified by the Department with a qualifying SMI diagnosis. Members were 21 years of age or older as of July 1, 2006, and were continuously enrolled in the same Colorado Medicaid health plan (FFS, PCPP, DHMC, and RMHP) from July 1, 2006, through June 30, 2007, with one or more gaps in enrollment totaling no more than 60 days.

Using the supplied eligible populations for the fee-for-service (FFS) program and the Primary Care Physician Program (PCPP), HSAG obtained member utilization rates for all measures (except mental health inpatient admissions provided by the Department) using a programmed data pull from claims/encounter records. Rocky Mountain Health Plans (RMHP) and Denver Health Medicaid Choice (DHMC) determined member utilization rates for their eligible population and then submitted to HSAG a summary data file containing the numerators and denominators for all measures except mental health inpatient admissions. HSAG used the numerators and denominators provided by RMHP, DHMC, and the Department to calculate aggregated medical utilization rates for all measures.

Limitations

All studies are subject to potential limitation or bias. As such, it is important to consider this when interpreting the findings. This study relied on administrative data (claims and encounter data), which are subject to potential data biases, such as inaccurate or missing data elements. Providers who are not paid on a fee-for-service basis (e.g., capitated providers) may render services, but may neglect to submit the encounter to the managed care plan. Therefore, the reported utilization rates may be slightly lower than actual rates. In addition, the Department's mental health inpatient admission data (used for rate setting and not quality assurance activities) did not contain the level of detail to determine if a member had multiple mental health inpatient admissions. Furthermore, the identified SMI population was not adjusted for case-mix or comorbidities.

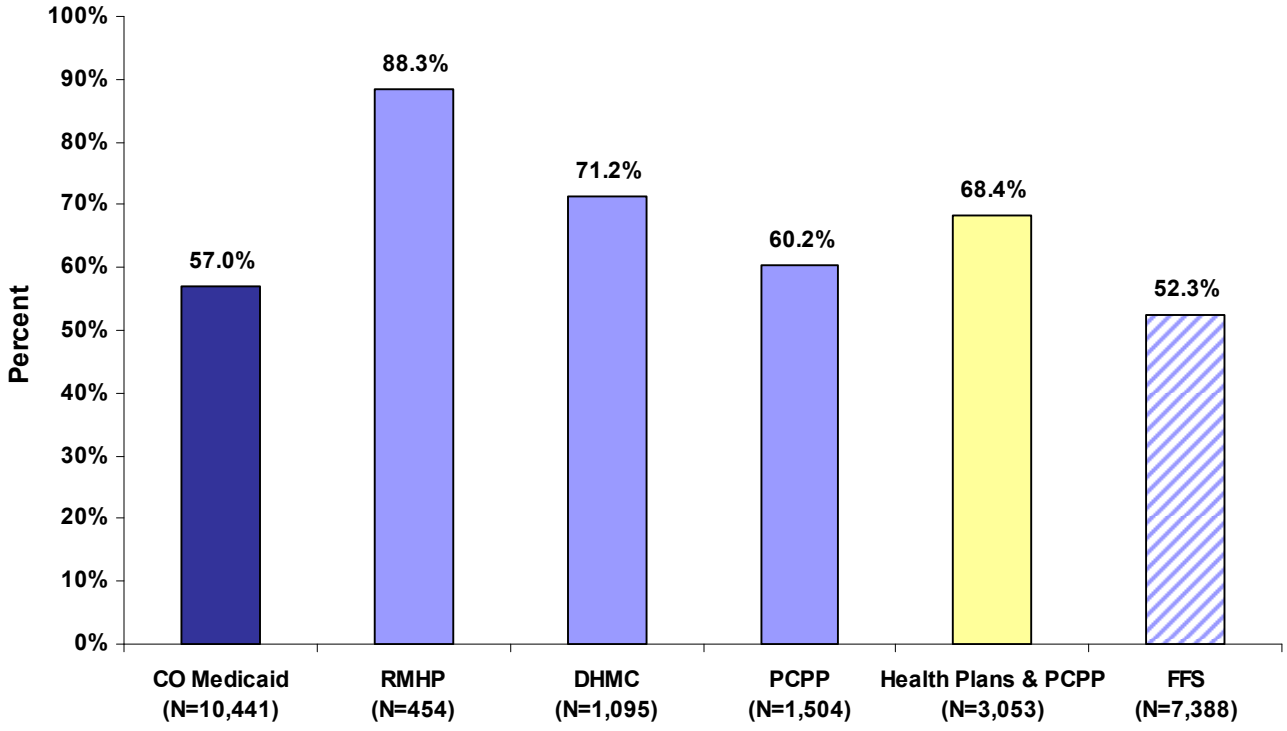
Key Findings

The following measures were selected to identify areas to assess documentation of coordination of care for a future study as well as determine baseline data. In addition, the measures analyzed together provide relational patterns of care that could be further explored in future studies.

Measure 1: Percentage of Members With an SMI Diagnosis Who Had at Least One Preventive/Ambulatory Visit in an Outpatient Setting During FY 06–07

Figure 4-1 illustrates program comparisons between all health plans, including and excluding FFS, for members diagnosed with an SMI who had a physician office visit with a primary care-type provider. The intent of this measure was to determine to what extent members diagnosed with an SMI were accessing physical health providers for routine preventive/ambulatory care. Future studies may assess documentation of coordination of care between behavioral health and physical health providers resulting from preventive/ambulatory visits.

Figure 4-1—Percentage of SMI Members With a Preventive/Ambulatory Visit



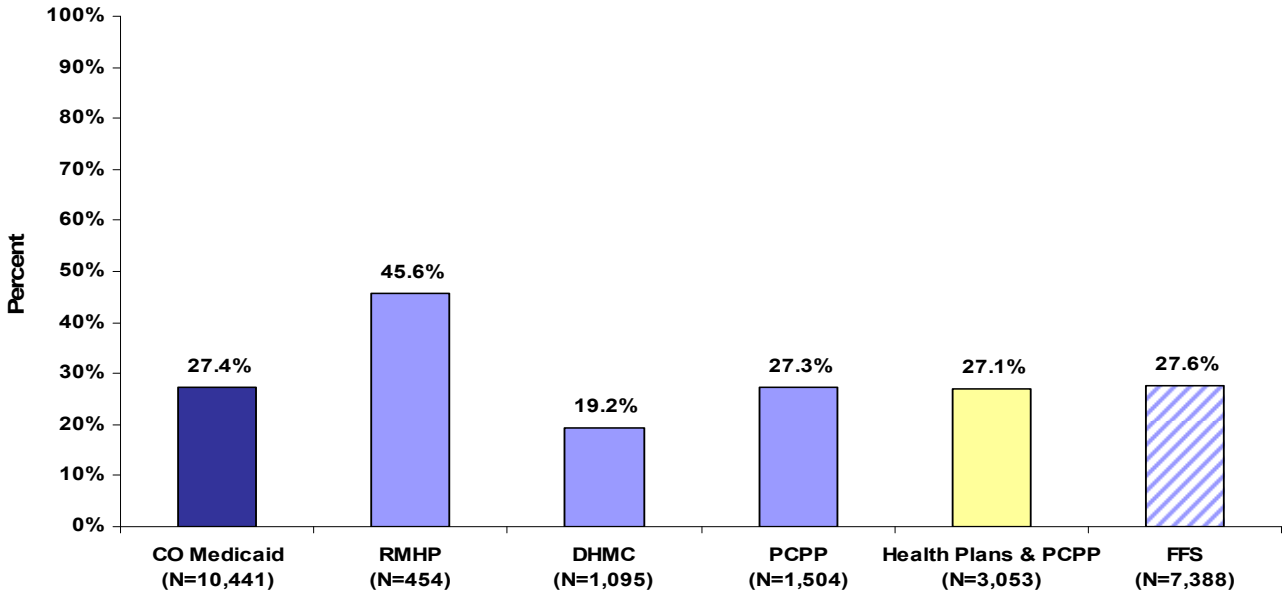
Nearly 6 out of 10 (57 percent) Colorado Medicaid members diagnosed with an SMI had a physician office visit with a primary care-type provider. The Health Plans & PCPP rate was 68.4 percent, with the FFS program removed from the results. The 11.4 percentage-point difference between the overall Colorado Medicaid rate (57 percent) and the Health Plans & PCPP rate (68.4 percent) was caused by the low 52.3 percent rate for the FFS program, which accounts for 70.8 percent of the overall SMI population.

Comparing rates between health plans demonstrates that RMHP's rate was highest among the health plans. The other plans' rates ranged from 17.1 (DHMC) to 36 percentage points (FFS) lower than RMHP. DHMC had the second-highest rate behind RMHP with 71.2 percent. The PCPP rate (60.2 percent) was 11 percentage points below the DHMC rate and almost 8 percentage points above the FFS rate.

Measure 2: Percentage of Members With an SMI Diagnosis Who Had at Least One Emergency Room Visit During FY 06–07

Figure 4-2 illustrates program comparisons between all health plans, including and excluding FFS, for members diagnosed with an SMI who had an emergency room visit. Higher results for this measure may point to an opportunity to explore outpatient management programs.

Figure 4-2—Percentage of SMI Members With at Least One Emergency Room Visit



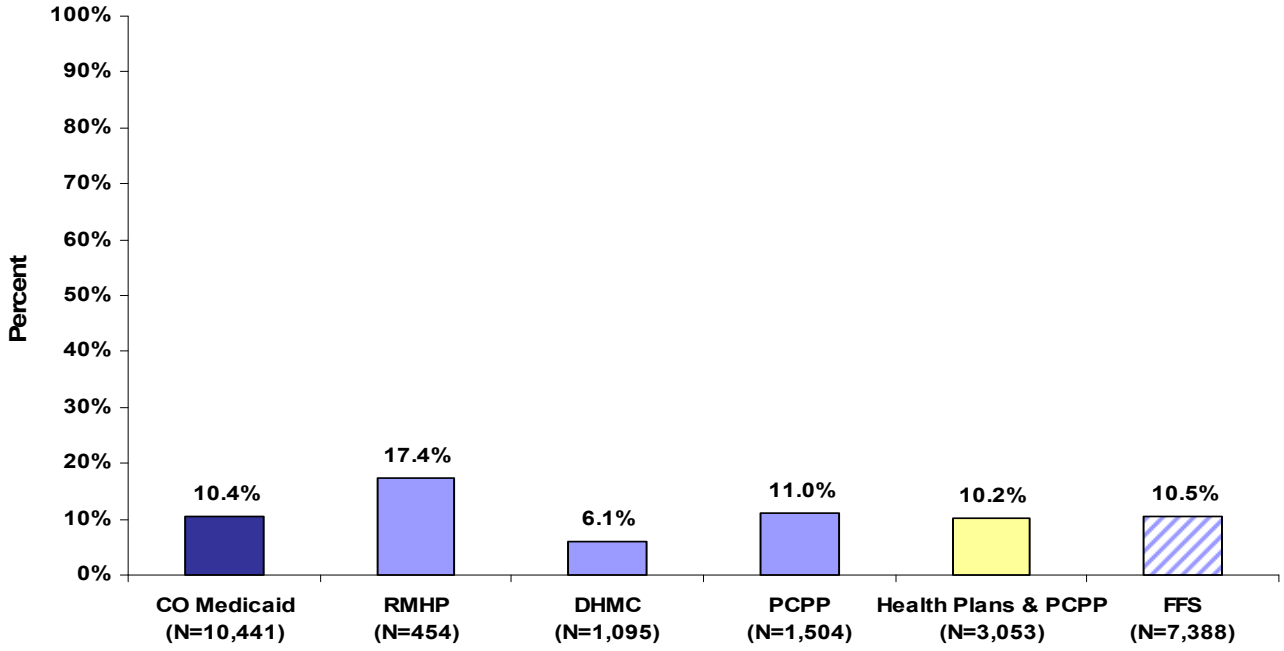
More than one quarter (27.4 percent) of Colorado Medicaid members diagnosed with an SMI had an emergency room visit during FY 06–07. RMHP had the highest percentage of SMI members utilizing the emergency room (45.6 percent), which was nearly 20 percentage points higher than the rates exhibited by PCPP and FFS (27.3 percent and 27.6, respectively). DHMC had the lowest rate (19.2 percent) of SMI members with an emergency room visit.

The overall Colorado Medicaid, PCPP, FFS, and Health Plans & PCPP rates were all about 27 percent. Lower rates for health plans may indicate better management of SMI members in the physician's office while higher rates may suggest an opportunity for case management. Geographic differences among the health plans may contribute to a higher rate of emergency room visits.

Measure 3a: Percentage of Members With an SMI Diagnosis Who Had at Least One Inpatient Admission in a Physical Health Hospital During FY 06–07

Figure 4-3 illustrates program comparisons between all health plans, including and excluding FFS, for members diagnosed with an SMI who had at least one inpatient admission to a physical health hospital. The intent of this measure was to identify areas of focus for coordination of care. In addition, a high percentage of inpatient admissions may indicate an opportunity to review outpatient management programs.

Figure 4-3—Percentage of SMI Members With at Least One Physical Health Inpatient Admission

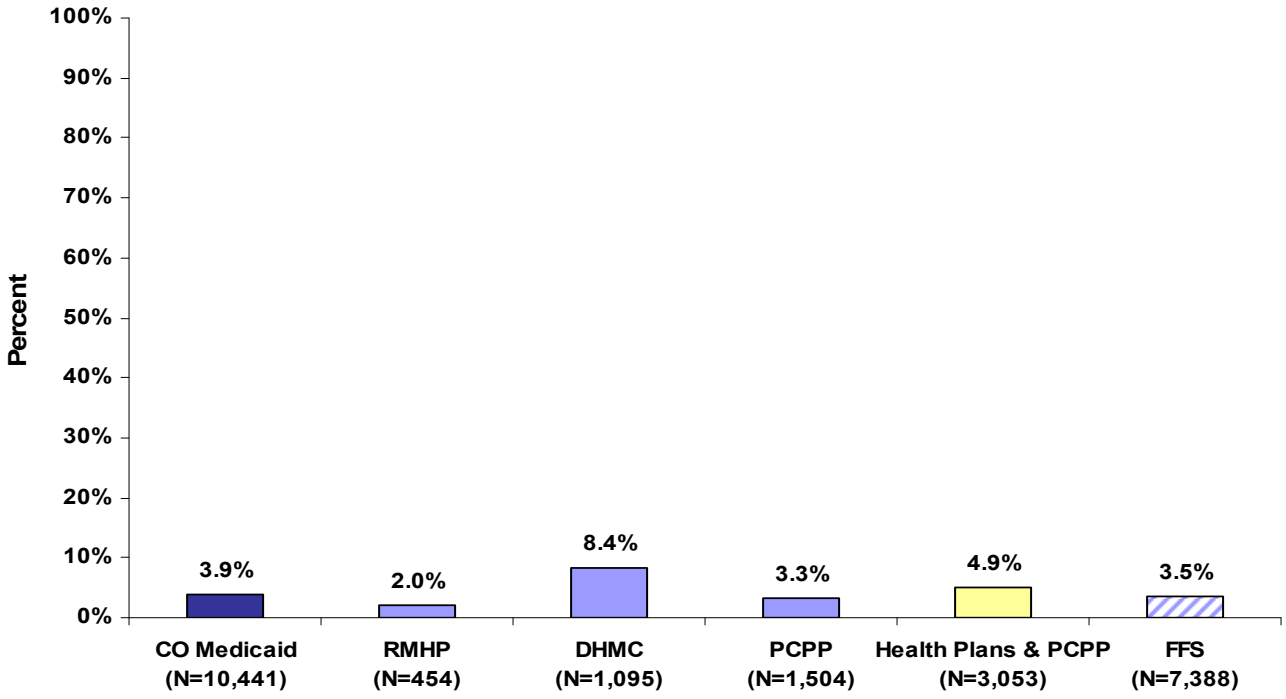


The overall Colorado Medicaid rate was 10.4 percent, which was similar to the FFS rate of 10.5 percent. Almost three quarters (70.8 percent) of Colorado Medicaid members diagnosed with an SMI were FFS members. The large percentage of FFS members influenced the overall Colorado Medicaid rate, as evidenced by the Colorado Medicaid and FFS rates being essentially the same. FFS and PCPP had similar rates of 10.5 and 11.0 percent, respectively. DHMC's rate was a little more than half of the PCPP and FFS rates.

Measure 3b: Percentage of Members With an SMI Diagnosis Who Had at Least One Inpatient Admission in a Mental Health Hospital During FY 06–07

Figure 4-4 illustrates program comparisons between all health plans, including and excluding FFS, for members diagnosed with an SMI who had at least one inpatient admission to a mental health hospital. A low percentage of mental health inpatient admissions may indicate effective management of patients' behavioral health needs.

Figure 4-4—Percentage of SMI Members With at Least One Mental Health Inpatient Admission



Fewer than 4 out of 100 (3.9 percent) Colorado Medicaid members who were diagnosed with an SMI had an inpatient admission to a mental health hospital. This rate was low compared to Measure 3a, which resulted in 10 out of 100 members with an inpatient admission to a physical health hospital—more than double the number of members with an inpatient admission to a mental health hospital. DHMC had the highest rate at 8.4 percent, a little more than 4 times higher than the rate for RMHP (2.0 percent). PCPP and FFS had essentially the same rates—3.3 and 3.5 percent, respectively. The Health Plans & PCPP rate (4.9 percent) was 1.4 percentage points above the FFS rate (3.5 percent).

Measure 4: Utilization of Services by Members with an SMI Diagnosis During FY 06–07

The following utilization tables provide a comprehensive baseline view of care delivered to members diagnosed with an SMI in the preventive/ambulatory, emergency room, physical health inpatient, and mental health inpatient settings. Benchmarks were not available for members diagnosed with an SMI in these settings. Therefore, comparisons were performed among the health plans.

Table 4-1 displays the number of members with an SMI diagnosis, number of visits, average visits per member, and the top three diagnoses for members in the preventive/ambulatory care setting during FY 06–07. The table uses preventive/ambulatory visits as they are defined in Measure 1.

Table 4-1—Preventive/Ambulatory Utilization for Individuals With an SMI

		CO Medicaid	RMHP	DHMC	PCPP	Health Plans & PCPP	FFS
Total number of SMI members		10,441	454	1,095	1,504	3,053	7,388
Total number of visits		44,688	3,101	5,484	7,121	15,706	28,982
Average visits per member		4.28	6.83	5.01	4.73	5.14	3.92
Top Three Diagnoses[A]							
Diagnosis 1	**Description**	*Diabetes mellitus* (250)	*Diabetes mellitus* (250)	*Special investigations and examinations* (V72)	*Diabetes mellitus* (250)	*Diabetes mellitus* (250)	*Diabetes mellitus* (250)
	N	2,362	213	350	463	963	1,399
	%[B]	5.3%	6.9%	6.4%	6.5%	6.1%	4.8%
Diagnosis 2	**Description**	*Other and unspecified disorders of back* (724)	*General symptoms* (780)	*Diabetes mellitus* (250)	*Essential hypertension* (401)	*Essential hypertension* (401)	*Other and unspecified disorders of back* (724)
	N	1,930	149	287	354	672	1,333
	%[B]	4.3%	4.8%	5.2%	5.0%	4.3%	4.6%
Diagnosis 3	**Description**	*Special investigations and examinations* (V72)	*Other and unspecified disorders of back* (724)	*Essential hypertension* (401)	*Other and unspecified disorders of back* (724)	*Other and unspecified disorders of back* (724)	*Special investigations and examinations* (V72)
	N	1,689	141	179	308	597	1,139
	%[B]	3.8%	4.5%	3.3%	4.3%	3.8%	3.9%

[A] Diagnosis codes from the primary fields were assessed based on the first three digits of the ICD-9-CM codes.
[B] Percentages were based on the total number of diagnoses.

On average, Colorado Medicaid members diagnosed with an SMI had slightly more than four ambulatory/preventative visits (4.28) during FY 06–07. RMHP members had the highest average number of ambulatory/preventative visits (6.83) among the health plans. DHMC and PCPP, at 5.01 and 4.73 average visits per member, respectively, had about 2 fewer visits per member than RMHP. The FFS program had the lowest average number of ambulatory/preventative visits at 3.92, which was approximately one visit on average below DHMC and PCPP (5.01 and 4.73 average visits per member, respectively). The average number of ambulatory/preventative visits for the three health plans excluding FFS (Health Plans & PCPP) was 5.14.

The overall top three diagnoses for a preventive/ambulatory visit for members diagnosed with an SMI were *diabetes mellitus*, *other and unspecified disorders of the back*, and *special investigations and examinations*, occurring in 5.3, 4.3, and 3.8 percent of the visits, respectively. All health plans reported *diabetes mellitus* as one of the top two diagnoses, and three of four health plans (RMHP, PCPP, and FFS) reported it as the most frequent diagnosis. In addition, three of the four health plans (RMHP, PCPP, and FFS) reported *other and unspecified disorders of the back* as one of the top three diagnoses, and one health plan (FFS) reported it as the second-most-frequent diagnosis. *Essential hypertension* and *special investigations and examinations* were reported in the top three diagnoses for DHMC and PCPP but were not reported by RMHP or FFS as one of their top three diagnoses. *General symptoms* was reported by RMHP as the second-highest-reported diagnosis but was not reported by the other health plans. Code V72 (*special investigations and examinations*), reported by DHMC as the most frequent diagnosis, may merit further investigation to determine if provider billing/coding issues are present.

Table 4-2 displays the number of members with an SMI diagnosis, the number of visits, average visits per member, and the top three diagnoses for members with emergency room visits during FY 06–07. The table uses emergency room visits as they are defined in Measure 2.

Table 4-2—Emergency Room Utilization for Individuals With an SMI							
		CO Medicaid	RMHP	DHMC	PCPP	Health Plans & PCPP	FFS
Total number of SMI members		10,441	454	1,095	1,504	3,053	7,388
Total number of visits		8,737	735	423	1,074	2,232	6,505
Average visits per member		0.84	1.62	0.39	0.71	0.73	0.88
Top Three Diagnoses[A]							
Diagnosis 1[B]	**Description**	*Other symptoms involving abdomen and pelvis* (789)	*Symptoms involving head and neck* (784)	*General symptoms* (780) *Symptoms involving respiratory system and other chest symptoms* (786)	*General symptoms* (780)	*Symptoms involving respiratory system and other chest symptoms* (786)	*Other symptoms involving abdomen and pelvis* (789)
	N	629	72	39	77	154	478
	%[C]	7.2%	9.8%	9.2%	7.1%	6.9%	7.3%
Diagnosis 2	**Description**	*Symptoms involving respiratory system and other chest symptoms* (786)	*Other symptoms involving abdomen and pelvis* (789)	*Other symptoms involving abdomen and pelvis* (789)	*Symptoms involving respiratory system and other chest symptoms* (786)	*Other symptoms involving abdomen and pelvis* (789)	*Symptoms involving respiratory system and other chest symptoms* (786)
	N	573	65	18	71	151	419
	%[C]	6.5%	8.8%	4.3%	6.6%	6.8%	6.4%
Diagnosis 3[B]	**Description**	*General symptoms* (780)	*Symptoms involving respiratory system and other chest symptoms* (786)	*Asthma* (493) *Other and unspecified disorders of back* (724)	*Other symptoms involving abdomen and pelvis* (789)	*General symptoms* (780)	*Other and unspecified disorders of back* (724)
	N	458	44	15	68	144	338
	%[C]	5.2%	6.0%	3.5%	6.3%	6.4%	5.2%

[A] Diagnosis codes from the primary fields were assessed based on the first three digits of the ICD-9-CM codes.
[B] Categories with more than one diagnosis indicate a tie for the frequency of those diagnoses.
[C] Percentages were based on the total number of diagnoses.

Colorado Medicaid members diagnosed with an SMI averaged 0.84 emergency room visits during FY 06–07. RMHP had the highest average number of visits per member (1.62), about four times greater than the lowest health plan average of 0.39 (DHMC). The PCPP and FFS average visits per member (0.71 and 0.88, respectively) were about halfway between the averages for DHMC and RMHP.

The three most frequent Colorado Medicaid diagnoses for emergency room visits were *other symptoms involving abdomen and pelvis* (7.2 percent), *symptoms involving respiratory system and other chest symptoms* (6.5 percent), and *general symptoms* (5.2 percent). *Symptoms involving respiratory system and other chest symptoms* and *other symptoms involving abdomen and pelvis* were reported as one of the top three diagnoses in the emergency room setting for all health plans. Three out of four health plans (RMHP, DHMC, and FFS) reported *other symptoms involving abdomen and pelvis* in their top two diagnoses. *Asthma* was reported as one of the top three diagnoses. This finding may indicate the need to explore care management programs for effectiveness in preventing emergency room visits as asthma is recognized as a controllable condition. In addition, the health plans reported *other and unspecified disorders of back* as one of their top three diagnosis, suggesting that members are seeking care in the emergency room that they could get in an office setting. Investigating these findings was beyond the scope of this study and could be considered for future studies.

Table 4-3 displays the number of members with an SMI diagnosis, the number of admissions, average number of admissions per member, and the top three diagnoses for members with physical health inpatient admissions during FY 06–07. The table uses physical health inpatient admissions as defined in Measure 3a.

Table 4-3—Inpatient Physical Health Utilization for Individuals With an SMI							
		CO Medicaid	RMHP	DHMC	PCPP	Health Plans & PCPP	FFS
Total number of SMI members		10,441	454	1,095	1,504	3,053	7,388
Total number of inpatient admissions		1,691	107	162	241	510	1,181
Average inpatient admissions per member		0.16	0.24	0.15	0.16	0.17	0.16
Top Three Diagnoses[A,B]							
Diagnosis 1	**Description**	*Pneumonia, organism unspecified* (486)	*Symptoms involving respiratory system and other chest symptoms* (786)	*General symptoms* (780)	*Pneumonia, organism unspecified* (486)	*General symptoms* (780)	*Pneumonia, organism unspecified* (486)
	N	62	6	15	12	26	45
	%[C]	3.7%	5.6%	9.3%	5.0%	5.1%	3.8%
Diagnosis 2[B]	**Description**	*General symptoms* (780) *Symptoms involving respiratory system and other chest symptoms* (786)	*Other symptoms involving abdomen and pelvis* (789)	*Other diseases of lung* (518)	*Disorders of fluid, electrolyte, and acid-base balance* (276) *General symptoms* (780)	*Other diseases of lung* (518)	*Symptoms involving respiratory system and other chest symptoms* (786)
	N	56	5	9	9	19	38
	%[C]	3.3%	4.7%	5.6%	3.7%	3.7%	3.2%
Diagnosis 3[B]	**Description**	*Disorders of fluid, electrolyte, and acid-base balance* (276)	*Disorders of fluid, electrolyte, and acid-base balance* (276) *Pneumonia, organism unspecified* (486)	*Other cellulitis and abscess* (682) *Symptoms involving respiratory system and other chest symptoms* (786)	*Asthma* (493) *Intestinal obstruction without mention of hernia* (560)	*Disorders of fluid, electrolyte, and acid-base balance* (276) *Symptoms involving respiratory system and other chest symptoms* (786)	*General symptoms* (780)

Table 4-3—Inpatient Physical Health Utilization for Individuals With an SMI							
		CO Medicaid	RMHP	DHMC	PCPP	Health Plans & PCPP	FFS
			Disorders of menstruation and other abnormal bleeding from female genital tract (626)				
	N	41	4	8	8	18	30
	%[C]	2.4%	3.7%	4.9%	3.3%	3.5%	2.5%

[A] Diagnosis codes from the primary fields were assessed based on the first three digits of the ICD-9-CM codes.
[B] Categories with more than one diagnosis indicate a tie for the frequency of those diagnoses.
[C] Percentages were based on the total number of diagnoses.

Colorado Medicaid members diagnosed with an SMI averaged 0.16 inpatient admissions to a physical health hospital during FY 06–07. RMHP had the highest average number of admissions per member at 0.24. DHMC, PCPP, and FFS all had about the same average admissions per member. Health Plans & PCPP (0.17) was essentially the same as Colorado Medicaid.

The overall top three diagnoses in the physical health inpatient setting were *pneumonia organism unspecified* (3.7 percent), *general symptoms/symptoms involving respiratory system and other chest systems* (tied at 3.3 percent), and *disorders of fluid electrolyte and acid-base balance* (2.4 percent). *Symptoms involving respiratory system and other chest systems* was one of the top three diagnoses for three of the four health plans (RMHP, DHMC, and FFS). *Pneumonia, organism unspecified* was also one of the top three diagnoses for three of four health plans (RMHP, PCPP, and FFS), as well as g*eneral symptoms,* which DHMC, PCPP, and FFS reported as one of their top three diagnoses.

Table 4-4 displays the number of members with an SMI diagnosis, the number of admissions, average admissions per member, and the top three diagnoses for members with an inpatient mental health admission during FY 06–07. The table uses inpatient mental health admissions as they are defined in Measure 3b.

Table 4-4—Inpatient Mental Health Admissions for Individuals With an SMI							
		CO Medicaid	RMHP	DHMC	PCPP	Health Plans & PCPP	FFS
Total number of SMI members		10,441	454	1,095	1,504	3,053	7,388
Total number of inpatient admissions[A]		410	9	92	49	150	260
Average inpatient admissions per member		0.04	0.02	0.08	0.03	0.05	0.04
Top Three Diagnoses[B]							
Diagnosis 1	**Description**	*Schizophrenic disorders* (295)	*Schizophrenic disorders* (295)	*Schizophrenic disorders* (295)	*Schizophrenic disorders* (295)	*Schizophrenic disorders* (295)	*Schizophrenic disorders* (295)
	N	197	5	56	25	86	111
	%	48.0%	55.6%	60.9%	51.0%	57.3%	42.7%
Diagnosis 2	**Description**	*Episodic mood disorders* (296)	*Adjustment reaction* (309)	*Episodic mood disorders* (296)	*Episodic mood disorders* (296)	*Episodic mood disorders* (296)	*Episodic mood disorders* (296)
	N	148	2	28	19	48	100
	%	36.1%	22.2%	30.4%	38.8%	32.0%	38.5%
Diagnosis 3[C]	**Description**	*Adjustment reaction* (309)	*Episodic mood disorders* (296) *Anxiety, dissociative and somatoform disorders* (300)	*Drug-induced mental disorders* (292) *Other nonorganic psychoses* (298) *Depressive disorder, not elsewhere classified* (311)	*Depressive disorder, not elsewhere classified* (311)	*Adjustment reaction* (309) *Depressive disorder, not elsewhere classified* (311)	*Adjustment reaction* (309)
	N	17	1	2	2	4	13
	%	4.1%	11.1%	2.2%	4.1%	2.7%	5.0%

[A] Only the member's first admission in the measurement period was tracked for mental health inpatient admissions.
[B] Diagnosis codes from the primary fields were assessed based on the first three digits of the ICD-9-CM codes.
[C] Categories with more than one diagnosis indicate a tie for the frequency of those diagnoses.

Overall, Colorado Medicaid members diagnosed with an SMI averaged 0.04 inpatient admissions to a mental health hospital during FY 06–07. The averages for RMHP, PCPP, and FFS were similar, at 0.02, 0.03, and 0.04 admissions per member, respectively. DHMC members had two to four times

more admissions per member (0.08) than the other health plans. The average number of mental health inpatient admissions for Health Plans & PCPP and Colorado Medicaid were essentially the same—0.05 and 0.04, respectively.

Overall, *schizophrenic disorders* (48 percent), *episodic mood disorders* (36.1 percent), and *adjustment reaction* (4.1 percent) were the top three diagnoses for mental health inpatient admissions. The top two diagnoses clearly demonstrated the Pareto Principle that a small proportion of diagnoses account for a large proportion of admissions.[4-1] *Schizophrenic disorders* (48 percent) or *episodic mood disorders* (36.1 percent) were reported in 84.1 percent of all admissions. This principle was not only true for the overall Colorado Medicaid program, but also for each health plan, ranging from 77.8 percent (RMHP) to 91.3 percent (DHMC). In addition, members diagnosed with *schizophrenic disorders* or e*pisodic mood disorders* were more likely to have a mental health inpatient admission than other SMI members.

Schizophrenic disorders was the top diagnosis for all health plans, ranging from 42.7 percent (FFS) to 60.9 percent (DHMC). *Episodic mood disorders* was reported in the top three diagnoses for all health plans, with three out of four health plans (RMHP excluded) reporting it as the second-most-frequent diagnosis. Two out of four health plans (DHMC and PCPP) reported *depressive disorder, not elsewhere classified* as the third-most-frequent diagnosis.

[4-1] Scholtes PR. *The Team Handbook*. Madison, WI: Joiner Associates Inc.; 1995:2-25.