The All Payer Claims Database Project: Montana Medicaid Pilot

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Key Findings

- Eleven percent of Montana's non-institutionalized population is enrolled in Medicaid.

- In 2010, 60 percent of all Medicaid spending was on the aged and disabled, although these two groups account for less than 30 percent of total Medicaid beneficiaries.

- Based on a random sample of 25,000 Montana Medicaid beneficiaries:

    - ✓ Children represent the largest group of Medicaid beneficiaries, accounting for almost 60 percent of the sample population,
    - ✓ More than 80 percent of the disabled and elderly population are eligible for all 12 months, whereas only 38 percent of adults are eligible for all 12 months,
    - ✓ Mean months of eligibility by demographic category are 11.1 months for the disabled and elderly, 10.6 months for children, and 8.3 months for adults,
    - ✓ Adjusting for age and gender, the relative risk score for Montana Medicaid enrollees shows they are 4 percent healthier than the U.S. Medicaid population,
    - ✓ Adjusting for clinical risk, however, indicates that the Montana Medicaid population is less healthy than the national norm,
    - ✓ Montana's disabled Medicaid population is nearly 400 percent above the risk scores for the disabled Medicaid population nationally,
    - ✓ Twelve aggregated health conditions deviate from the national norm in terms of the rate per 10,000 beneficiaries, with the greatest deviations in eyes, developmental disability, cardio-respiratory arrest, and cognitive disorders,
    - ✓ Mental disorders account for 25 percent of all Medicaid spending during 2011-2012,
    - ✓ Rehabilitative services account for 14 percent of total Medicaid spending,
    - ✓ Average per member per month costs for medical care are $357, and per member per month average costs for pharmaceutical are $67,
    - ✓ When adjusted for age and gender, four eligibility categories have higher than average risk compared to the overall Montana Medicaid population; two have risk that is 91 percent and 69 percent higher than the total Montana Medicaid population (?????QMBDisabled and the State Funded Eligibility categories),

- ✓ When adjusted for clinical risk, QMB Disabled, SSI Disabled, and "all other" Medicaid eligible have risk that is two to three times the risk of the overall Medicaid population,
- ✓ Efficiency indices identify only two eligibility categories out of ten that consume more resources than predicted based on age and gender, SSI Disabled, and "Other" Medicaid,
- ✓ Efficiency indices adjusted for clinical risk indicate that nearly all eligibility categories are more efficient than predicted. However, efficiency indices are cost-oriented only and tell us nothing about clinical outcome. Hence, although the population group is consuming fewer resources than predicted, it could be the case that these groups are underserved,
- ✓ Efficiency indices demonstrate significant variation across Medicaid eligibility categories. The potential for under and over use of medical care and clinical gaps in care should be further explored,
- ✓ Healthcare Effectiveness Data and Information Set (HEDIS) measures consist of 75 measures across eight different domains of care and could be used to measure clinical gaps in care.

- A 2010 study by Mathematica Policy Research shows that Montana's per member per month cost for Medicaid was significantly above the costs estimated in this study, $652 compared to $537 nationally. Additionally:

  - ✓ Montana's administrative costs for the Medicaid program are in line with the national average, 6 percent of total per member per month costs,
  - ✓ Montana's per member per month costs for non-disabled adults is well above the national average, $735 in Montana compared to $420 nationally,
  - ✓ Future endeavors of study include differences in the health status of enrollees by subpopulation group and an examination of the mix and quantity of specific types of services, such as hospital emergency room use, visits to specialists, and prescription drug use.

- Further study into the mental health subpopulation of the Montana Medicaid program will address nearly one-quarter of all Medicaid spending.

Background

The joint Federal-State Medicaid program provides health care assistance to certain low-income people and is one of the largest payers for health care in the U.S. The federal government establishes certain requirements for each state Medicaid program. States then administer their own program, determining the eligibility of applicants, the health services covered, and setting provider reimbursement rates. States also pay a portion of the total program costs, and process claims. Although Title XIX of the Social Security Act specifies which groups of people must be eligible for Medicaid, states have the flexibility to extend coverage to additional groups. In addition to income, eligibility is typically based on several other factors, including financial resources (assets), age, disability, other government assistance, and other health or medical conditions such as pregnancy. Beginning in 2014, states have the option to extend Medicaid eligibility to almost all individuals under age 65 in families with incomes below 138 percent of the Federal Poverty Level.

With limited exceptions, such as waivers, demonstration projects, and benchmark benefit plans, states must provide the same benefit package to all Medicaid enrollees. States must also extend eligibility to all mandatory populations and cover all mandatory services defined by Title XIX in order to receive federal matching funds.

Medicaid coverage is extremely valuable to low-income individuals and families who qualify for the program. It also enables the least-fortunate members of society to obtain needed health care.

Over the next 10 years, Medicaid expenditures are expected to increase at an average annual rate of 8.1 percent, almost twice as fast as growth in the U.S. economy. The expansion of Medicaid eligibility under the Affordable Care Act will broaden Medicaid's role as part of the U.S. health care system.

Current Medicaid eligibility in Montana requires beneficiaries to be either parents or other related adults with dependent children under the age of 19, children, pregnant women, women diagnosed with breast or cervical cancer or pre-cancer, 65 years old or older, or blind or disabled. Medicaid recipients must also meet basic eligibility requirements as well as other specific financial and non-financial requirements. Income limits for Medicaid depend on the type of coverage requested, and vary from no income limits for newborns and transitional family coverage to 200 percent of the federal poverty level for breast and cervical cancer patients.

Understanding the dynamics of the Medicaid population is vital for not only controlling health care costs but also addressing one off the neediest populations with respect to access to health care. Total Medicaid outlays in fiscal year 2010 were $404.1 billion, 68 percent of which represented federal spending. Dual eligibles, those patients covered by

both Medicare and Medicaid, present a unique challenge fiscally. Dual eligible comprise 15 percent of the Medicaid population nationally but consume almost 40 percent of total Medicaid spending.

Medicaid Eligibility

In Montana there are more than 50 different dependent codes for Medicaid eligibility. These classifications are shown in the table below.

Dep Code	Description	Details
A1	INSTITUTION AGED	> age 65 residing in nursing home; Full Medicaid
A2	MA AGED	> age 65, non-institutionalized; Full Medicaid
A3	QMB AGED	> age 65, Medicare Savings Program only; Medicaid pays Medicare Part B premium and Medicare cost share; no Medicaid benefits
A4	SSI AGED	> age 65 non-institutional community living, member receives SSI cash benefits or SSI state supplement; Full Medicaid
A5	WAIVER AGED	> age 65 non-institutional community living or assisted living, eligible for nursing home; Full Medicaid
B6	BREAST AND CERVICAL CANCER	Women < age 65, screened through Montana Breast and Cervical Health Program diagnosed with breast and/or cervical cancer; Full Medicaid
BB	BIG SKY BONANZA	People with chronic disabilities (all ages) to maintain independence; self-directed care
D1	MA BLIND	Blind individuals meeting SSA disability definition; Full Medicaid
D2	QMB BLIND	Blind, Medicare Savings Program only; Medicaid pays Medicare Part B premium and Medicare cost share; no Medicaid benefits
D3	SSI BLIND	Blind individuals, non-institutional community living, member receives SSI cash benefits or SSI state supplement; Full Medicaid
D4	208 WAIVER	Comprehensive Services Waiver; Developmental Disabilities waiver for people who would be eligible for institution but reside in community: assisted living, foster home, group home
D5	371 WAIVER	Community Supports Waiver; Developmental Disabilities waiver for people who would be eligible for institution but reside in community
D6	667 WAIVER	Children's Autism Waiver; ages 15 months through 7 years, living in family home
G1	INSTITUTION DISABLED	< age 65 individuals meeting SSA disability definition living in nursing home or residential treatment facility; Full Medicaid
G2	MA DISABLED	< age 65 individuals meeting SSA disability definition in non-institutional community living; Full Medicaid
G3	QMB DISABLED	Disabled, Medicare Savings Program only; Medicaid pays Medicare Part B premium and Medicare cost share; no Medicaid benefits

Dep Code	Description	Details
G4	SSI DISABLED	Individuals receiving SSI cash benefits or SSI State Supplement meeting SSA disability definition residing in non-institutional community living; Full Medicaid
G5	WAIVER DISABLED	< age 65 non institutional community living or personal care home; meet SSA disability definition; Full Medicaid
G6	WAIVER OTHER	Home and community-based services waiver; Full Medicaid
HB	HIFA WAIVER BIPOLAR	SDMI adults with bipolar disorder who meet financial criteria; Basic Medicaid
HK	HEALTHY KIDS	Children eligible for Medicaid ages 6 to 19 (paid with CHIP funds)
HS	HIFA WAIVER SCHIZOPHRENIA	SDMI adults with schizophrenia who meet financial criteria; Basic Medicaid
K1	AUTO NEWBORN	Birth through month of 1st birthday; mother eligible for Medicaid at time of birth
K2	POVERTY CHILD	Children ages 0 to 6
M7	WMD WITH WAIVER	Disabled adult workers who participate in a Medicaid waiver; would meet SSA disability criteria but for work activities; non-institutional community living or personal care home
MW	WMD WITH NO WAIVER	Disabled adult workers who would meet SSA disability criteria but for work activities; non-institutional community living
OP	PRTF WAIVER	6-to-17-year old youth residing in a Psychiatric Residential Treatment Facility
OS	SDMI WAIVER	> 18 with SDMI and needs nursing home level of care. Full Medicaid plus additional services
PE	PRESUMPTIVE HMK PLUS EXPANDED	Presumptive eligibility for Medicaid; children ages 6 to 19
PF	FAMILY PLANNING (PLAN FIRST)	Limited family planning benefit for women ages 19-44 who don't qualify for Medicaid and don't have other family planning coverage; Family planning benefits only (waiver began 6/1/2012)
PH	PRESUMPTIVE HMK	Presumptive eligibility for HMK (CHIP)
PM	PRESUMPTIVE HMK PLUS	Presumptive eligibility for Medicaid for children ages 0-5
Q2	QUALIFIED INDIVIDUALS	Medicare Savings Program only; Medicaid pays Medicare Part B premium; no Medicaid benefits
R1	SUBSIDIZED ADOPTION	Children ages 0 through month of 21st birthday, adopted with special needs
R2	CONT ELIG PREGNANT PERSON	Pregnant women who lose other Medicaid due to increased income.
R3	EXT MA CHILD SUPPORT	Extended child/spousal support
R4	MA-PW MA-QP CHILD SUPPORT	Pregnant women receiving Medicaid at the time of a child's birth
R5	FAMILY MEDICAID	Families: children 0 to 19 and related adults; adults get Basic Medicaid
R6	FOSTER CARE AFDC	Children ages 0 through 18 years in IV-E paid foster care placement
R7	FOSTER CARE CWS	Children ages 0 through 18 years in non-IV-E paid foster care placement

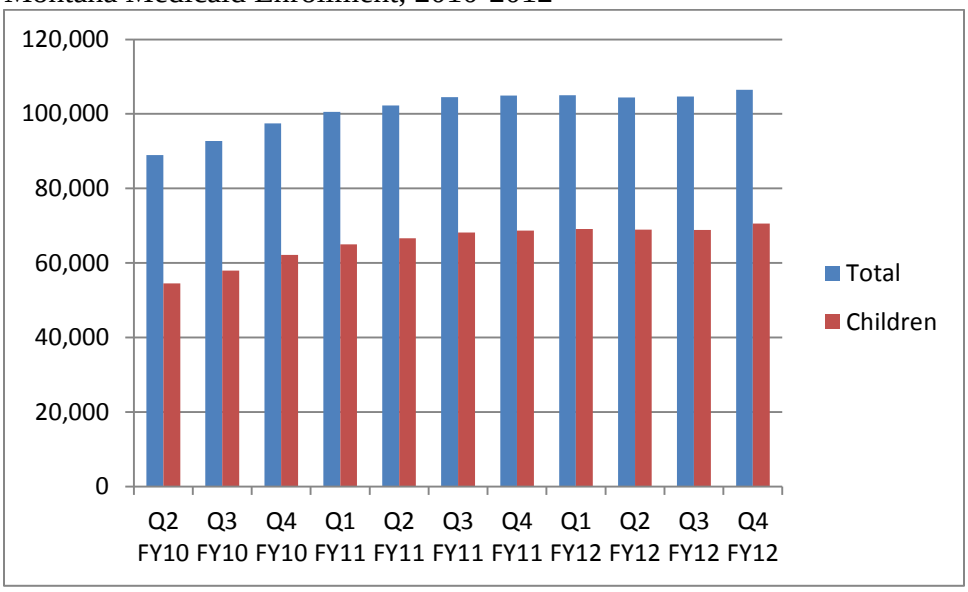
Dep Code	Description	Details
R8	OTHER MEDICAID	Refugee Medicaid similar to T5
R9	POVERTY 6	Children ages 6 through month of 19th birthday
S1	POVERTY PREGNANT WOMEN	Pregnant woman of any age; Full Medicaid through 60 days postpartum
S2	QUALIFIED PREGNANT	Pregnant women eligible for Medicaid through Medically Needy category (income too high for Medicaid); Full Medicaid
S3	RIBICOFF CHILD	Special Medicaid coverage group for 19 and 20 year olds who meet income and asset limits
S4	TRANSITIONAL MA	Family's non-medically needy Family Medicaid closes due to new or increased earned income, max 12 consecutive months; adults get Basic Medicaid; children 0 through 18 years
S7	CHILDREN'S HEALTH INSUR PROGRAM	Healthy Montana Kids (CHIP)
T5	REFUGEE MEDICAL	Eight months assistance for refugees meeting financial criteria
W2	MMIS 9 MONTH EXTENSION	Not used
WP	MMIS PACE RECIPIENT	Program ended. Managed care for > age 55 who qualify for nursing home care to stay in community
X1	STATE-FUNDED ELIGIBILITY	Mental Health Services Plan; no Medicaid benefits
X3	MHSP 72-HOUR PROGRAM	≥18 years; 72 Hour Presumptive Eligibility Program for Crisis Stabilization; no Medicaid benefits
Y1	SPECIFIED LOW-INCOME MCARE BEN	Medicare Savings Program only; Medicaid pays Medicare Part B premium; no Medicaid benefits

Source: Montana Department of Public Health and Human Services

Montana Medicaid Population

Nearly 11 percent of Montana's non-institutionalized population is enrolled in Medicaid. Total Medicaid spending in FY 2010 was $936.2 million, of which 22 percent ($207.9 million) was the state's responsibility. Well over 60 percent of total spending was for the disabled and aged, although these two groups only account for less than 30 percent of total Medicaid beneficiaries.

Montana Medicaid Enrollment, 2010-2012



Total Medicaid enrollment does not include clients that have a Medicare Savings Plan and clients listed as Medically Needy Not Issued.
Source: Montana Department of Public Health and Human Services

The table below presents summary statistics for the sample Medicaid population used in the following analyses. Nearly 25,000 Medicaid enrollees were randomly sampled who were enrolled in Montana Medicaid during October 2010 through September, 2011. Almost 60 percent were children, followed by adults, the disabled, and the elderly. Measured in person years, the rank order of beneficiaries remains the same, although the difference between the adult Medicaid population and the disabled population converges considerably. This is due to the much lower percentage of adult beneficiaries who are eligible for the full year. As expected, more than 80 percent of elderly and disabled enrollees are eligible for the entire year, well above the proportion of adults eligible for Medicaid all year. Children, the disabled, and the elderly have more than 10 months of eligibility, compared to only eight months for the adult population.

Eligibility Characteristics of Sample Medicaid Population

	Current Sample				
	Total	Adult	Child	Disabled	Elderly
Total People	24,999	6,021	14,697	3,302	979
Percent of Sample	100	24.08	58.79	13.21	3.92
People Ever Eligible in Year	24,999	6,021	14,697	3,302	979
People Eligible for All 12 Months	16,397	2,276	10,527	2,778	816
Percent Eligible for All 12 Months	65.59	37.8	71.63	84.13	83.35
Person Years	21,138	4,138	13,034	3,063	904
Percent of Person Years in Group	100	19.57	61.66	14.49	4.28
Mean Months of Eligibility	10.15	8.25	10.64	11.13	11.08

Source: MAHCP.

Characteristics of Montana Medicaid Population

The gender and age composition of the Montana Medicaid population is presented below. As a benchmark, the U.S. Medicaid population is compared to the Montana Medicaid population. Relative to the U.S. Medicaid population, Montana's Medicaid population is generally similar. Although the mean age is similar between the two populations, the composition of the Medicaid population is different. Montana is over represented by children (62 percent of enrollees compared to 49 percent nationally) and the aged (4 percent of enrollees compared to less than 1 percent nationally).

Within the adult population, almost nine in ten are ages 18 to 44. The disabled tend to be older, 37 years old compared to 26 years old for the adult Medicaid population. Although females make up more than half the Montana Medicaid population, they account for more than 60 percent of the elderly.

Demographic Characteristics of Sample Medicaid Population

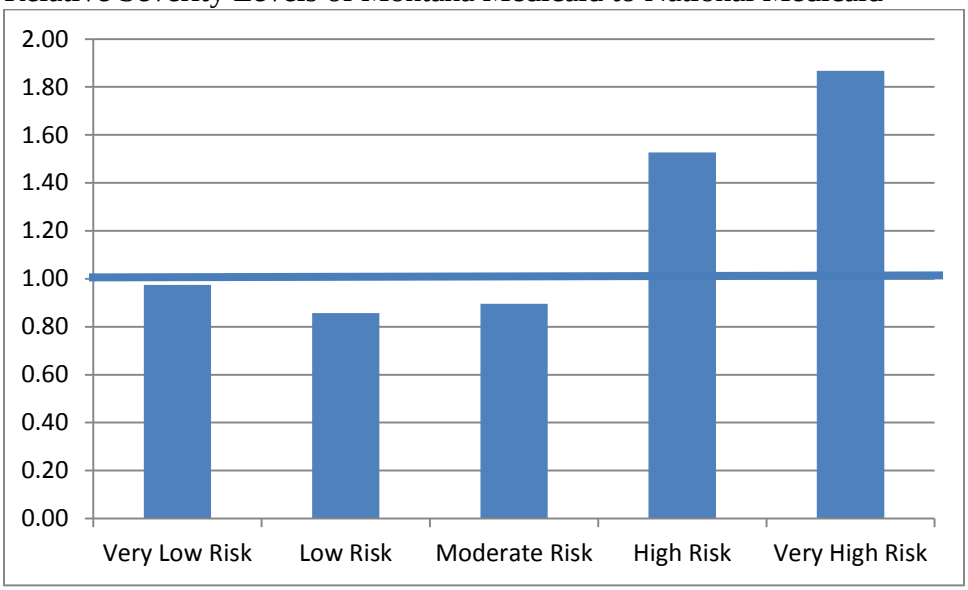
	U.S. Medicaid	Montana Medicaid				
		Total	Adult	Child	Disabled	Elderly
Total People (%)	100	100	100	100	100	100
Female (%)	56.26	52.13	59.84	48.99	48.49	64.04
Male (%)	43.74	47.87	40.16	51.01	51.51	35.96
Child: Age 0 to 17	48.82	62.45	2.47	100	23.23	0
Young Adult: Age 18 to 44	37.36	25.46	87.89	0	32.5	0
Older Adult: Age 45 to 64	13.26	8.16	9.63	0	44.19	0.1
Senior: Age 65+	0.56	3.92	0	0	0.09	99.9
Mean Age	22.59	21.93	25.81	13.34	37.08	75.89

Source: MAHCP.

Montana Medicaid Benchmarks for Comparison

The chart below stratifies the Montana Medicaid population, weighted by eligible months and by health severity level according to medical claims history for FY 2011. The benchmark used to compare Montana claims history is the U.S. Medicaid population. A value of 1.00 indicates that the percentage of the Montana Medicaid population with a certain severity level is proportionate to the same population nationally. A value less than 1.00 means that the proportion of the Montana Medicaid population with a specified severity level is underrepresented, that is, is smaller than the proportion nationally with the same severity level designation. Values greater than 1.00 indicate that the proportion of the Montana Medicaid population for a specified severity level is higher than the proportion nationally with the same severity level designation.

Relative Severity Levels of Montana Medicaid to National Medicaid



Source: MAHCP

For three severity level classifications –very low risk, low risk, and moderate risk – the Montana Medicaid population is underrepresented compared to the proportions of the U.S. Medicaid population for these three risk classifications. It follows then that a greater proportion of Montana's Medicaid population must be at higher risk than the proportions nationally. Montana's Medicaid population at very high risk is almost double the proportion at very high risk nationally. Advanced analytics can be used to identify potentially high-risk Medicaid enrollees. The Medicaid Health Improvement Program (HIP) uses predictive software to identify Medicaid enrollees who may potentially benefit from enhanced case management efforts.

Risk Scores by Eligibility Category

	Benchmark	Current Sample				
		Total	Adult	Child	Disabled	Elderly
		Distribution of Person Years				
Person Years (Year 1)	1,988,997	21,138	4,138	13,034	3,063	904
Percent of Sample	100.00%	100.00%	19.57%	61.66%	14.49%	4.28%
Relative Risk Scores	**Normalized to U.S. Medicaid Population**					
Age/Sex Model	1	0.96	1.31	0.77	1.51	na
Concurrent Model	1	1.34	1	0.8	3.72	2.65
Relative Risk Scores	**Normalized to Montana Medicaid Sample Population**					
Age/Sex Model		1	1.36	0.81	1.57	na
Concurrent Model		1	0.75	0.6	2.78	1.98

Source: MAHCP

An examination of the table above reveals that based only on age and gender adjustments, the relative risk score for the Montana Medicaid population is 4 percent healthier than the U.S. Medicaid population. But when clinical information is added, the Montana Medicaid population is 34 percent above the national norm for risk. By far the largest risk score based on clinical data is for the disabled. Montana's disabled population on Medicaid is nearly 400 percent above the risk scores for the disabled nationally. In contrast, Montana children on Medicaid are healthier than their national counterparts.

Another perspective on relative risk is by using the Montana Medicaid population as the general benchmark (values equal to 1). Using Montana Medicaid as the benchmark, adults are actually healthier than the general Medicaid population when clinical information is included. Recall that the overall Medicaid adult population has a risk score comparable to the U.S. Medicaid population when clinical information is introduced (=1). For the disabled and aged, risk scores indicate this sub-population of Medicaid is generally sicker than the overall Medicaid population in Montana.

We now drill down the data from risk scores by eligibility to aggregated condition category by means of eligibility. This allows a closer examination of the types of health conditions underlying the risk scores.

Montana's Medicaid Rates per 10,000 Enrollees, by Aggregated Health Condition

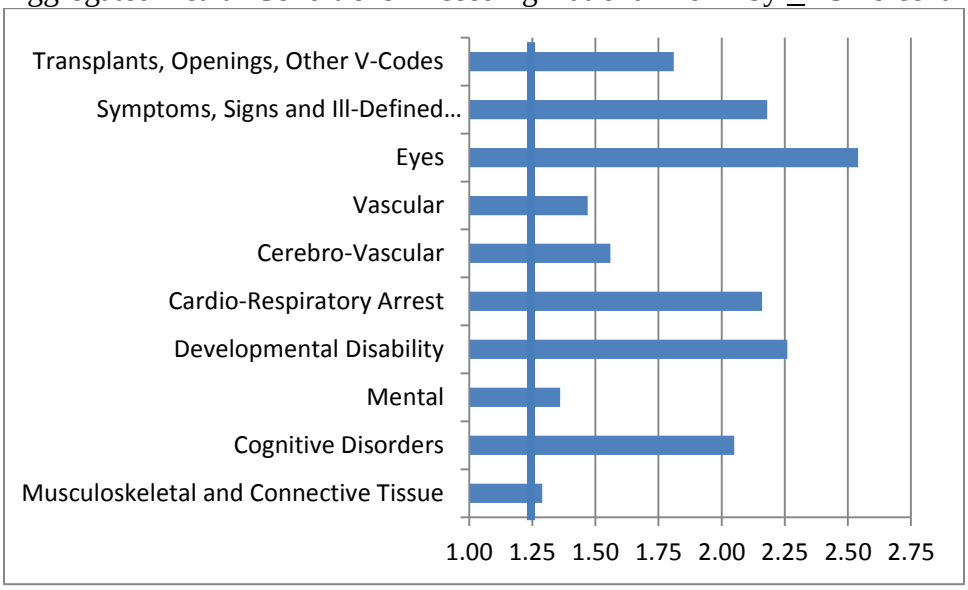
Aggregated Condition Category (ACC)	U.S. Rate per 10,000	Montana Rate per 10,000				
		Total	Adult	Child	Disabled	Elderly
Infectious and Parasitic	1,557	1,322	982	1,347	1,729	1,685
Malignant Neoplasm	108	126	85	17	472	838
Benign/In Situ/Uncertain Neoplasm	470	363	419	171	939	970
Diabetes	353	362	221	47	1,387	2,513
Nutritional and Metabolic	1,084	1,119	940	468	3,437	4,168
Liver	271	180	204	21	778	409
Gastrointestinal	1,423	1,323	1,382	794	3,044	3,095
Musculoskeletal and Connective Tissue	1,932	2,488	2,397	1,784	5,033	5,026
Hematological	422	318	297	112	942	1,450
Cognitive Disorders	129	265	103	96	863	1,788
Substance Abuse	675	826	1,211	339	2,271	899
Mental	1,927	2,627	2,732	1,963	5,433	2,482
Developmental Disability	585	1,325	467	1,549	2,268	72
Neurological	553	688	606	282	2,420	1,440
Cardio-Respiratory Arrest	63	136	38	18	518	1,205
Heart	807	711	410	95	2,644	5,291
Cerebro-Vascular	95	148	43	25	597	1,124
Vascular	159	233	133	39	781	1,910
Lung	1,555	1,441	1,141	1,087	2,989	3,371
Eyes	1,108	2,817	1,865	3,094	3,334	2,778
Ears, Nose and Throat	3,314	3,042	2,539	3,171	3,713	1,941
Urinary System	710	716	787	335	1,663	2,809
Genital System	1,192	822	1,422	463	1,345	776
Pregnancy Related	500	462	1,574	108	148	0
Skin and Subcutaneous	1,451	1,444	1,108	1,276	2,492	2,482
Injury, Poisoning, Complications	1,974	2,428	2,094	2,290	3,649	2,441
Symptoms, Signs and Ill-Defined Conditions	3,677	8,018	7,818	8,039	8,864	6,067
Transplants, Openings, Other V-Codes	26	47	22	5	221	255
Screening / History	5,559	4,832	4,141	4,734	6,435	5,148

Source: MAHCP

Comparing the overall Montana Medicaid population to the U.S. Medicaid population, several health conditions are identified as unusually prevalent in the Montana Medicaid population. Health conditions that deviate from the national norm by more than 25

percent are depicted below. Ten aggregated health conditions fall into this category, where the rate per 10,000 enrollees is greater than 25 percent of the national norm.

Aggregated Health Conditions Exceeding National Norm by ≥ 25 Percent

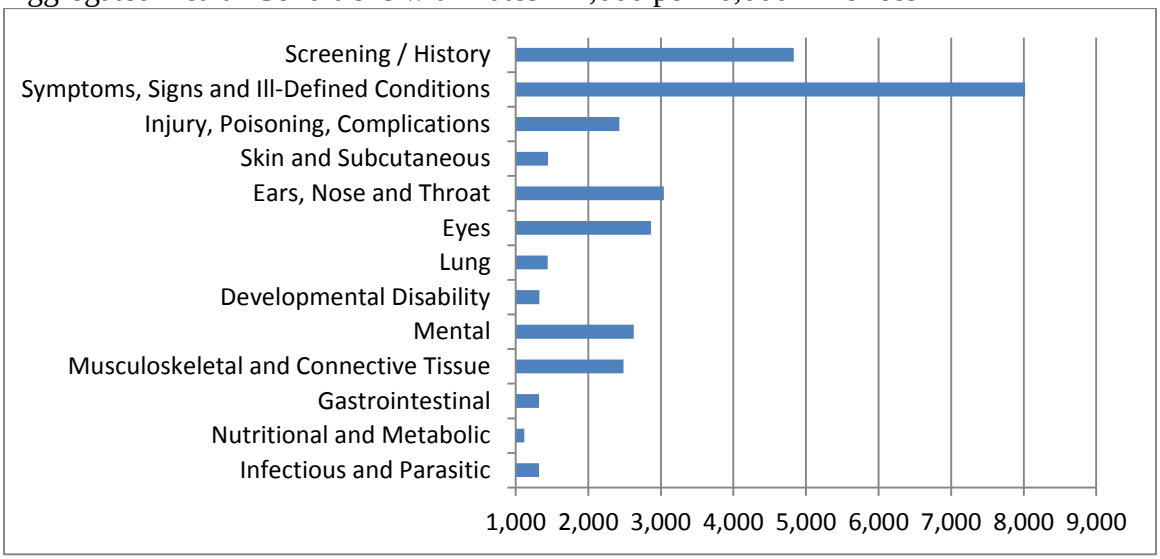


Source: MAHCP

In addition to the total rate per 10,000 enrollees for certain aggregated health conditions, the rates are also given for adults, children, the disabled, and the elderly. As expected, the rates per 10,000 enrollees for all aggregated conditions are much higher for the disabled and the elderly, often twice as high as the total Montana Medicaid population.

The chart below identifies those aggregated health conditions where rates exceed 1,000 per 10,000 enrollees in Montana. Thirteen of the 29 aggregated health conditions are above rates of 1,000 per 10,000 enrollees. While these conditions affect a disproportionate share of Montana Medicaid enrollees, they are not necessarily indicative of where the majority of Medicaid spending occurs.

Aggregated Health Conditions with Rates > 1,000 per 10,000 Enrollees



Source: MAHCP

The rates per 10,000 enrollees for the aggregated health conditions are presented in greater detail below for the total Medicaid population, adults, children, the disabled and the elderly. For comparison purposes, the national benchmark is also presented.

Condition Category (CC)	Benchmark	Current Sample				
		Total	Adult	Child	Disabled	Elderly
Infectious and Parasitic	**1,557**	**1,322**	**982**	**1,347**	**1,729**	**1,685**
HIV/AIDS	60	6	7	0	36	0
Septicemia/Shock	23	32	23	5	103	245
Central Nervous System Infection	15	8	5	2	30	41
Tuberculosis	9	1	0	1	6	0
Opportunistic Infections	7	5	3	0	30	10
Other Infectious Diseases	1,493	1,290	955	1,342	1,608	1,481
Malignant Neoplasm	**108**	**126**	**85**	**17**	**472**	**838**
Metastatic Cancer and Acute Leukemia	23	26	17	1	115	153
Lung, Upper Digestive Tract, and Other Severe Cancers	20	22	5	1	97	204
Lymphatic, Head and Neck, Brain, Other Major Cancers	32	34	23	6	148	143
Breast, Prostate, Colorectal, Other Cancers/Tumors	73	80	63	10	282	562
Benign/In Situ/Uncertain Neoplasm	**470**	**363**	**419**	**171**	**939**	**970**
Other Respiratory and Heart Neoplasms	7	6	2	2	15	51
Other Digestive and Urinary Neoplasms	64	56	33	10	221	337
Other Neoplasms	164	134	188	51	330	378
Benign Neoplasms of Skin, Breast, Eyes	283	211	234	125	497	398
Diabetes	**353**	**362**	**221**	**47**	**1,387**	**2,513**
Diabetes with Renal Manifestation	12	19	7	0	94	123
Diabetes with Neurologic or Peripheral Circulation Manifest	36	70	23	0	342	490
Diabetes with Acute Complications	28	42	22	9	200	143
Diabetes with Ophthalmologic Manifestation	39	33	13	1	151	235
Diabetes with No or Unspecified Complications	346	354	218	46	1,345	2,462
Type I Diabetes Mellitus	87	105	75	32	409	358
Nutritional and Metabolic	**1,084**	**1,119**	**940**	**468**	**3,437**	**4,168**
Protein-Calorie Malnutrition	14	29	10	3	130	204
Other Significant Endocrine and Metabolic Disorders	48	73	45	28	282	225
Disorders of Fluid/Electrolyte/Acid-Base Balance	210	260	216	101	784	1,164
Other Endocrine/Metabolic/Nutritional Disorders	892	919	752	361	2,929	3,544

Condition Category (CC)	Benchmark	Current Sample				
		Total	Adult	Child	Disabled	Elderly
Liver	**271**	**180**	**204**	**21**	**778**	**409**
End-Stage Liver Disease	12	17	8	0	103	31
Cirrhosis of Liver	28	25	10	1	157	41
Chronic Hepatitis	96	53	43	1	300	61
Acute Liver Failure/Disease	17	14	12	0	79	31
Other Hepatitis and Liver Disease	188	104	101	11	488	235
Gallblader and Biliary Tract Disorders	43	47	81	9	130	123
Gastrointestinal	**1,423**	**1,323**	**1,382**	**794**	**3,044**	**3,095**
Intestinal Obstruction/Perforation	32	30	17	10	118	112
Pancreatic Disease	36	30	15	8	139	92
Inflammatory Bowel Disease	20	12	15	5	33	41
Peptic Ulcer, Hemorrhage, Other specified GI Disease	138	113	123	32	348	470
Appendictis	15	33	35	36	21	10
Other Gastrointestinal Disorders	1,358	1,266	1,315	763	2,935	2,901
Musculoskeletal and Connective Tissue	**1,932**	**2,488**	**2,397**	**1,784**	**5,033**	**5,026**
Bone/Joint/Muscle Infections/Necrosis	19	28	10	8	121	112
Rheumatoid Arthritis, Inflammatory Connective Tissue Disorders	60	88	70	18	351	378
Disorders of the Vertebrae and Spinal Discs	287	370	324	107	1,399	1,134
Osteoarthritis of Hip or Knee	79	99	45	5	439	695
Osteoporosis and Other Bone/Cartilage Disorders	151	222	105	127	554	1,236
Congenital/Developmental Skeletal, Connective Tissue Disorders	18	23	20	16	64	20
Other Musculoskeletal and Connective Tissue Disorders	1,802	2,363	2,315	1,696	4,767	4,556
Hematological	**422**	**318**	**297**	**112**	**942**	**1,450**
Severe Hematological Disorders	20	11	2	2	55	61
Disorders of Immunity	38	19	13	3	88	51
Coagulation defd, Other Specified Hematological Disorders	60	59	47	14	251	163
Iron Deficiency, Other/Unspecified Anemias, Blood Disorders	348	274	256	98	766	1,369
Cognitive Disorders	**129**	**265**	**103**	**96**	**863**	**1,788**
Delirium and Encephalopathy	68	86	50	22	403	194
Dementia/Cerebral Degeneration	30	157	20	53	439	1,604
Senility, Nonpsychotic Organic Brain Syndromes/Conditions	43	46	35	22	151	123
Substance Abuse	**675**	**826**	**1,211**	**339**	**2,271**	**899**
Drug/Alcohol Psychosis	62	56	60	12	233	112
Drug/Alcohol Dependence	424	260	340	142	654	204
Drug/Alcohol Abuse, Without Dependence	419	684	998	257	1,999	746
Mental	**1,927**	**2,627**	**2,732**	**1,963**	**5,433**	**2,482**
Schizophrenia	110	158	126	13	812	337
Major Depressive, Bipolar, and Paranoid Disorders	771	1,248	1,450	798	3,041	715
Reactive and Unspecified Psychosis	60	113	86	40	409	378
Personality Disorders	44	112	148	19	472	72
Depression	658	932	884	738	1,890	930
Anxiety Disorders	495	882	699	812	1,720	225
Other Psychiatric Disorders	908	968	815	780	2,129	797
Developmental Disability	**585**	**1,325**	**467**	**1,549**	**2,268**	**72**
Profound Mental Retardation/Developmental Disability	2	6	10	2	18	0
Severe Mental Retardation/Developmental Disability	2	3	2	1	12	0
Mild Mental Retardation, Autism, Down Syndrome	4	10	3	3	58	10
Mild/Unspecified Mental Retardation/Developmental Disability	61	174	70	101	733	41
Other Developmental Disability	279	816	148	1,000	1,448	31
Attention Deficit Disorder	325	753	307	892	1,166	20
Neurological	**553**	**688**	**606**	**282**	**2,420**	**1,440**
Quadriplegia, Other Extensive Paralysis	12	23	3	6	130	41
Paraplegia	9	20	5	2	127	20
Spinal Cord Disorders/Injuries	41	48	22	14	251	31
Muscular Dystrophy	3	8	2	1	55	0
Polyneuropathy	51	85	28	7	409	511
Multiple Sclerosis	13	22	7	1	124	92
Parkinson's and Huntington's Disease	3	11	2	1	30	163
Seizure Disorders and Convulsions	166	211	125	85	933	194
Coma, Brain Compression/Anoxic Damage	11	13	5	5	61	31
Mononeuropathy, Other Neurological Conditions/Inj.	326	386	458	188	1,072	592

Condition Category (CC)	Benchmark	Current Sample				
		Total	Adult	Child	Disabled	Elderly
Cardio-Respiratory Arrest	**63**	**136**	**38**	**18**	**518**	**1,205**
Respirator Dependence/Tracheostomy Status	4	4	0	0	27	10
Respiratory Arrest	4	2	0	1	9	0
Cardio-Respiratory Failure and Shock	60	135	38	18	515	1,195
ACC016: Heart	**807**	**711**	**410**	**95**	**2,644**	**5,291**
Congestive Heart Failure	75	110	32	4	385	1,246
Acute Myocardial Infarction	10	5	2	0	6	102
Unstable Angina, Other Acute Ischemic Heart Disease	35	11	12	0	39	72
Angina Pectoris/Old Myocardial Infarction	41	31	15	1	139	215
Coronary Atherosclerosis/Other Chronic Ischemic Heart D	91	105	32	1	354	1,277
Heart Infection/Inflammation, Except Rheumatic	10	9	5	0	51	20
Valvular and Rheumatic Heart Disease	80	73	33	28	224	490
Major Congenital Cardiac/Circulatory Defect	10	6	5	6	12	0
Other Congenital Heart/Circulatory Disease	35	15	7	10	51	20
Hypertensive Heart and Renal Disease or Encephalopathy	5	25	7	1	88	276
Hypertensive Heart Disease	14	4	0	1	18	20
Hypertension	581	535	312	26	2,126	4,178
Specified Heart Arrhythmias	48	74	30	4	197	981
Other Heart Rhythm and Conduction Disorders	100	74	45	25	233	460
Other and Unspecified Heart Disease	64	64	18	5	239	633
Cerebro-Vascular	**95**	**148**	**43**	**25**	**597**	**1,124**
Cerebral Hemorrhage	9	9	5	2	33	61
Ischemic or Unspecified Stroke	27	48	5	1	170	613
Precerebral Arterial Occl., Transient Cerebral Ischemia	26	23	2	1	67	327
Cerebral Atherosclerosis and Aneurysm	11	12	2	3	45	102
Cerebrovascular Disease, Unspecified	4	10	3	1	42	92
Hemiplegia/Hemiparesis	12	30	5	7	142	143
Cerebral Palsy and Other Paralytic Syndromes	23	45	20	12	242	31
Speech, Language, Cognitive, Perceptual Deficits	8	19	3	5	61	184
Cerebrovascular Disease Late Effects, Unspecified	8	20	3	1	85	184
Vascular	**159**	**233**	**133**	**39**	**781**	**1,910**
Peripheral Vascular Disease with Complications	20	31	20	2	121	225
Peripheral Vascular Disease	58	102	35	4	345	1,175
Other Circulatory Disease	111	145	93	33	518	889
Lung	**1,555**	**1,441**	**1,141**	**1,087**	**2,989**	**3,371**
Cystic Fibrosis	4	6	0	7	12	0
Chronic Obstructive Pulmonary Disease	139	249	73	0	1,099	2,206
Fibrosis of Lung and Other Chronic Lung Disorders	74	44	15	16	154	276
Asthma	783	597	475	555	1,012	592
Aspiration and Specified Bacterial Pneumonias	15	24	5	5	103	153
Pneumococcal Pneumonia, Empyema, Lung Abscess	14	12	0	4	39	123
Viral and Unspecified Pneumonia, Pleurisy	271	192	98	100	551	950
Pleural Effusion/Pneumothorax	36	39	13	5	157	296
Other Lung Disorders	771	782	691	597	1,581	1,430
Eyes	**1,108**	**2,817**	**1,865**	**3,094**	**3,334**	**2,778**
Legally Blind	5	8	3	1	39	41
Major Eye Infections/Inflammations	11	8	10	7	3	20
Retinal Detachment	5	4	7	1	9	0
Proliferative Diabetic Retinopathy, Vitreous Hemorrhage	9	7	3	0	39	20
Diabetic and Other Vascular Retinopathies	36	32	10	2	142	235
Retinal Disorders, Exc. Detachment, Vascular Retinopath	24	37	7	7	82	521
Glaucoma	70	66	18	31	161	572
Cataract	55	103	22	1	400	1,124
Other Eye Disorders	1,004	2,758	1,837	3,085	3,192	2,043

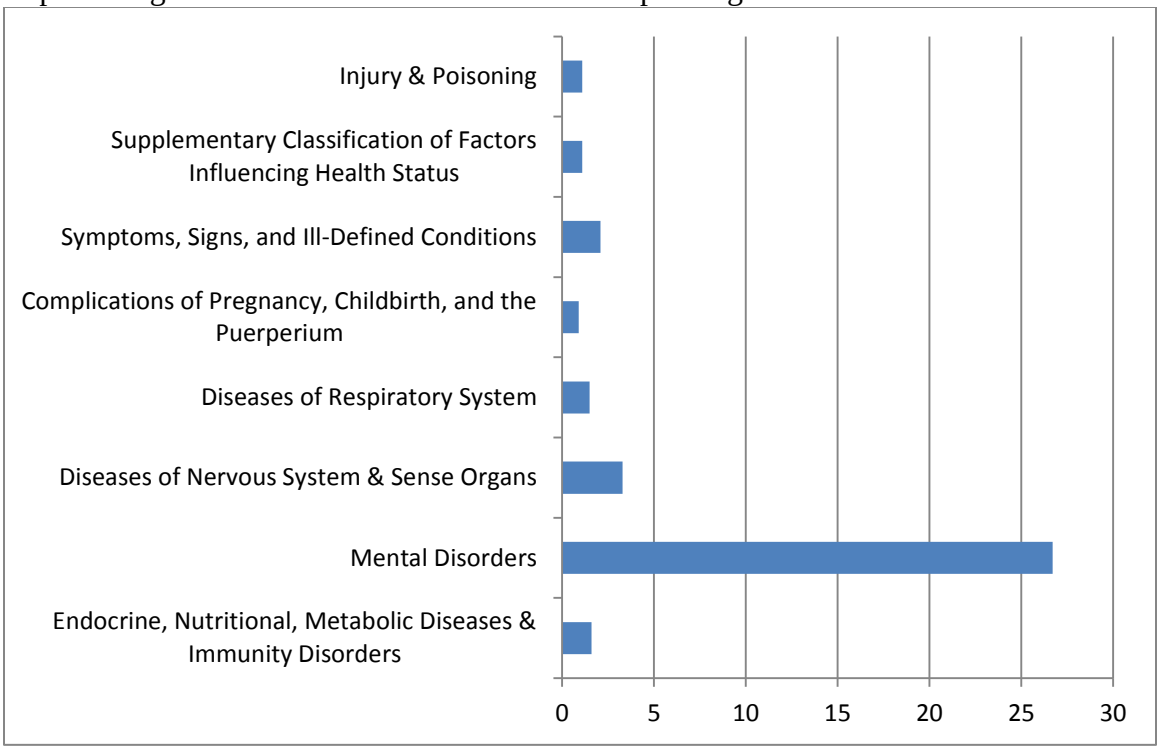
Condition Category (CC)	Benchmark	Current Sample				
		Total	Adult	Child	Disabled	Elderly
Ears, Nose and Throat	**3,314**	**3,042**	**2,539**	**3,171**	**3,713**	**1,941**
Significant Ear, Nose and Throat Disorders	25	23	20	11	73	51
Hearing Loss	126	84	45	44	263	337
Other Ear, Nose, Throat, and Mouth Disorders	3,276	3,013	2,526	3,161	3,634	1,706
Urinary System	**710**	**716**	**787**	**335**	**1,663**	**2,809**
Kidney Transplant Status	3	4	2	1	24	0
End Stage Renal Disease (Medicare Eligible)	0	0	0	0	0	0
Dialysis Status	4	4	2	0	24	10
Renal Failure	40	78	27	3	312	725
Nephritis	14	12	12	3	45	31
Urinary Obstruction and Retention	108	100	108	22	366	317
Incontinence	71	160	55	54	548	1,083
Urinary Tract Infection	470	448	618	254	775	1,195
Other Urinary Tract Disorders	173	106	66	31	351	664
Genital System	**1,192**	**822**	**1,422**	**463**	**1,345**	**776**
Female Infertility	12	4	17	0	3	0
Pelvic Inflammatory Disorders, Other Specified Female G	185	128	259	52	227	123
Other Female Genital Disorders	1,003	690	1,277	412	987	235
Male Genital Disorders	140	98	73	39	291	480
Pregnancy Related	**500**	**462**	**1,574**	**108**	**148**	**0**
Ectopic Pregnancy	7	4	13	1	6	0
Miscarriage/Abortion	91	50	148	17	30	0
Completed Pregnancy With Major Complications	60	31	113	5	3	0
Completed Pregnancy With Complications	195	206	741	39	33	0
Completed Pregnancy Without Complications (Normal De	242	266	945	50	67	0
Uncompleted Pregnancy With Complications	160	142	500	26	48	0
Uncompleted Pregnancy With No or Minor Complications	412	409	1,413	92	109	0
Skin and Subcutaneous	**1,451**	**1,444**	**1,108**	**1,276**	**2,492**	**2,482**
Decubitus Ulcer of Skin	7	22	5	1	106	153
Chronic Ulcer of Skin, Except Decubitus	24	48	12	4	215	378
Extensive Third-Degree Burns	0	0	0	0	0	0
Other Third-Degree and Extensive Burns	3	4	3	1	15	10
Cellulitis, Local Skin Infections	307	386	319	312	757	654
Other Dermatological Disorders	1,238	1,184	869	1,089	1,969	1,910
Injury, Poisoning, Complications	**1,974**	**2,428**	**2,094**	**2,290**	**3,649**	**2,441**
Severe Head Injury	1	3	0	1	15	10
Major Head Injury	42	42	25	18	167	102
Concussion or Unspecified Head Injury	127	180	154	152	342	204
Vertebral Fractures w/o Spinal Cord Injury	13	35	30	12	91	215
Hip Fracture/Dislocation	15	27	10	8	70	266
Major Fracture, Except of Skull, Vertebrae, or Hip	69	84	56	73	154	194
Internal Injuries	11	30	30	14	94	61
Traumatic Amputation	2	14	5	0	79	61
Other Injuries	1,685	2,167	1,857	2,113	3,092	1,767
Poisonings and Allegic Reactions	269	245	211	203	497	235
Major Complications of Medical Care and Trauma	56	98	76	47	300	306
Other Complications of Medical Care	65	119	148	48	333	276
Symptoms, Signs and Ill-Defined Conditions	**3,677**	**8,018**	**7,818**	**8,039**	**8,864**	**6,067**
Major Symptoms, Abnormalities	2,192	1,838	1,802	1,281	3,834	3,708
Minor Symptoms, Signs, Findings	2,682	7,894	7,746	7,963	8,658	5,199

Condition Category (CC)	Benchmark	Current Sample				
		Total	Adult	Child	Disabled	Elderly
Transplants, Openings, Other V-Codes	**26**	**47**	**22**	**5**	**221**	**255**
Major Organ Transplant (Procedure)	0	0	0	0	0	0
Major Organ Tansplant Status	5	3	0	2	15	0
Other Organ Tansplant/Replacement	3	5	7	0	24	0
Artificial Openings for Feeding or Elimination	15	28	10	3	124	194
Amputation Status, Lower Limb/Amputation Comp.	4	11	5	0	55	72
Amputation Status, Upper Limb	0	1	0	0	9	0
Screening / History	**5,559**	**4,832**	**4,141**	**4,734**	**6,435**	**5,148**
Post-Surgical States/Aftercare/Effective	385	932	678	461	2,889	2,983
Radiation Therapy	4	5	3	0	27	20
Chemotherapy	14	15	8	1	73	61
Rehabilitation	104	248	188	145	739	511
Screening/Observation/Special Exams	5,374	4,345	3,750	4,529	4,961	3,156
History of Diseases	249	504	513	205	1,545	1,430

Top 20 Medicaid Diagnoses and Procedures by Percent of Total Medicaid Spending

Next the Medicaid population was examined by diagnosis and procedures for the 2010-2011 plan years. The top 20 diagnoses and the top 20 procedures with respect to the share of total Medicaid spending were identified. The top 20 diagnoses account for over 1/3 of all Medicaid spending. By far the major diagnosis group was Mental Disorders, accounting for over ¼ of all Medicaid spending during 2010-2011. Neurotic disorders, personality disorders, and other non-psychotic mental disorders represent 16 percent of all Medicaid spending, with "other psychoses" accounting for 11 percent of total Medicaid spending.

Top 20 Diagnoses as Percent of Total Medicaid Spending



Source: MAHCP

Mental disorders are identified below. For all seven mental disorders, the rate per 10,000 enrollees is much higher in Montana than is the rate per 10,000 for the nation. Most noticeable is the much higher rate per 10,000 enrollees of all mental conditions among the disabled.

Condition Category (CC)	U.S. Rate per 10,000	Montana Medicaid Rate per 10,000				
		Total	Adult	Child	Disabled	Elderly
ACC012: Mental	**1,927**	**2,627**	**2,732**	**1,963**	**5,433**	**2,482**
54: Schizophrenia	110	158	126	13	812	337
55: Major Depressive, Bipolar, and Paranoid Disorders	771	1,248	1,450	798	3,041	715
56: Reactive and Unspecified Psychosis	60	113	86	40	409	378
57: Personality Disorders	44	112	148	19	472	72
58: Depression	658	932	884	738	1,890	930
59: Anxiety Disorders	495	882	699	812	1,720	225
60: Other Psychiatric Disorders	908	968	815	780	2,129	797

Source: MAHCP

Similarly, the top 20 procedures for Medicaid beneficiaries during 2010-2011 were identified. All together, these 20 procedures account for 58 percent of total Medicaid spending. Combining all codes with the prefix "H" reveals that rehabilitative services alone account for 14 percent of total Medicaid spending. This is matched by personal care services (13.8 percent), followed by therapeutic child foster care services (6.2 percent).

Top 20 Procedures as Percent of Total Medicaid Spending

Procedure	Description	% of Total Cost
T1019	Personal Care Services; per 15 Minutes	13.8
H0036	Community Psychiatric Support Treatment, Face-to-Face; per 15 Minutes	7.5
S5145	Child Foster Care, Therapeutic; per Diem	6.2
T1016	Case Management; each 15 Minutes	4.7
T2031	Assisted Living Waiver; per Diem	3.8
T2022	Case Management; per Month	2.6
H2019	Therapeutic Behavioral Services; per 15 Minutes	2.1
99213	Office/Outpatient Visit; Established	2.1
S5102	Adult Day Care; per Diem	2.0
H0040	Assertive Community Treatment Program; per Diem	1.9
90806	Psychotherapy, Office, 45 – 50 Minutes	1.7
99214	Office/Outpatient Visit; Established	1.4
H2020	Therapeutic Behavioral Services; per Diem	1.3
H2012	Behavioral Health Day Treatment; per Hour	1.3
T1003	Licensed Practical or Licensed Vocational Services; up to 15 Minutes	1.2
59400	Routine Obstetrical Care	1.1
D2392	Posterior 2 Surfaced Resin-Based Composite	0.8
E1390	Oxygen Concentrator, Single Delivery Port	0.8
G9008	Coordinated Care Fee, Physician Coordinated Care Oversight Services	0.8
T2016	Habilitation, Residential, Waiver; per Diem	0.7

Source: MAHCP

Per Member per Month Medicaid Costs

The table below graphically depicts per member per month (PMPM) costs for medical and per member per month (PMPM) costs for pharmaceutical based on a randomly sampled subset of the Montana Medicaid population. The Medicaid population is broken down into 10 distinct major groups, in addition to the total Medicaid population. Overall, PMPM costs for medical are $357, while PMPM costs for pharmaceutical are $67. Comparing the PMPM costs for both medical and pharmaceutical to the ten major Medicaid populations reveals significant variation among Medicaid populations based on eligibility. Individuals qualifying for Medicaid based on receiving Supplemental Security Income cash benefits or SSI State Supplements, who meet the Social Security Administration's disability definition, and who reside in a non-institutional community living arrangement have PMPM medical and pharmaceutical costs well above the overall average costs for the entire Medicaid population. Per member per month medical costs are nearly twice the average for the total Medicaid population, and PMPM pharmaceutical costs are five times the overall all-Medicaid average. The QMB Disabled population does not receive Medicaid benefits, but rather their Medicare Part B premiums

and Medicare cost-shares are paid by the Medicaid program. Their medical PMPM costs are almost twice that of the total Medicaid population.

Per Member per Month Costs by Medicaid Program, Unadjusted

	PMPM Medical	PMPM Rx	Total PMPM
Total Medicaid	$357.28	$67.08	$424.36
State Funded Eligibility	$306.88	$73.76	$380.64
Transitional MA	$131.84	$36.59	$168.43
Healthy Kids	$156.12	$37.06	$198.18
QMB Disabled	$652.00	$4.46	$656.46
SSI Disabled	$754.50	$362.45	$1,116.95
CHIP	$39.69	$0.03	$39.72
Poverty Child	$104.76	$13.19	$117.95
Family Medicaid	$168.00	$45.30	$213.30
Poverty 6	$215.70	$40.04	$255.74
All Other Medicaid	$722.79	$70.40	$793.19

Source: MAHCP.

Montana Medicaid Population Adjusted for Risk

The table below compares the two types of risk scores for the 10 major Medicaid groups and the total Medicaid reference population. Risk scores are normalized to the total Medicaid population, meaning any risk score above 1.00 indicates higher than normal costs compared to the risks associated with the general Medicaid population. The first risk score adjusts the population for age and gender. As seen in the graph below, many Medicaid groups are well below a value of 1.00, meaning their risk is relatively less than the Medicaid population in general. When the risk scores are adjusted for clinical experience, risk scores either increase or decrease depending on the eligibility category. When adjusted for age and gender, four eligibility categories have higher than average risk when compared to the overall Medicaid population. The QMB Disabled and the State Funded Eligibility categories have risk that is 91 percent and 69 percent higher than the total Medicaid population. The State Funded Eligibility population does not receive Medicaid benefits but rather receive services under the Mental Health Plan. When adjusted for clinical risk, QMB Disabled, SSI Disabled, and all other Medicaid eligible have risk that is 2 to 3 times the risk of the overall Medicaid population.

Relative Risk Scores: Normalized to Total Medicaid Population

Eligibility Category	Age/Sex Risk	Clinical Risk
Total Medicaid	1.00	1.00
State Funded Eligibility	1.69	1.07
Transitional MA	1.02	0.70
Healthy Kids	0.88	0.57
QMB Disabled	1.91	2.61
SSI Disabled	1.44	2.57
CHIP	0.88	0.16
Poverty Child	0.52	0.57
Family Medicaid	1.00	0.69
Poverty 6	0.88	0.60
All Other Medicaid	0.84	1.99

Source: MAHCP.

Risk Adjusted PMPM Medicaid Spending

Risk-adjusted expenditures represent actual spending that has been normalized for the level of risk. These adjusted expenditures take the age/sex and illness burden out of the spending equation. Hence these expenditures represent spending that is not accounted for by age/sex and clinical experience. After adjusting medical and pharmaceutical PMPM costs by age and sex the variation between the Medicaid eligibility groups becomes less apparent. Compared to PMPM costs for the total Medicaid population, only two eligibility categories emerge as outliers, "other" and SSI disabled. With respect to pharmacy costs adjusted only for age and sex, pharmacy costs are three times that of the total Medicaid population for SSI disabled Medicaid population and only slightly higher for the "other" Medicaid population.

PMPM Costs Adjusted for Age/Sex and Clinical Risk

Eligibility Category	Age/Sex Risk	Clinical Risk
Total Medicaid	$424.36	$424.36
State Funded Eligibility	$225.56	$354.21
Transitional MA	$164.99	$240.10
Healthy Kids	$220.78	$340.61
QMB Disabled	$344.37	$251.33
SSI Disabled	$771.01	$433.83
CHIP	$45.39	$241.93
Poverty Child	$226.46	$207.96
Family Medicaid	$213.30	$310.68
Poverty 6	$292.27	$423.08
All Other Medicaid	$940.08	$398.08

Source: MAHCP, BBER.

The table below shows the predicted PMPM costs for each group based on the amount of risk being assumed. Predicted expenditures are computed as the relative risk scores multiplied by the PMPM actual expenditures for the total Medicaid population. Compared to the total Medicaid population QMB Disabled and SSI Disabled have the highest predicted PMPM when adjusted for clinical risk.

Predicted PMPM

Eligibility Category	Age/Sex Risk	Clinical Risk
Total Medicaid	$424.36	$424.36
State Funded Eligibility	$716.11	$456.03
Transitional MA	$433.20	$297.69
Healthy Kids	$371.32	$240.68
QMB Disabled	$808.94	$1,108.40
SSI Disabled	$610.02	$1,092.57
CHIP	$371.32	$69.67
Poverty Child	$221.02	$240.68
Family Medicaid	$424.36	$291.35
Poverty 6	$371.32	$256.52
All Other Medicaid	$358.05	$845.55

Source: MAHCP, BBER.

Efficiency indices are next computed for the 10 major Medicaid population groups. The indices are normalized to the total Medicaid population. Thus, the efficiency of the total Medicaid population is by definition equal to 1.00. Efficiency indices less than 1.00 means that Medicaid group consumed fewer resources than one would have predicted based on the age/sex and clinical risks of the population. Indices below 1.00 are considered "more efficient" than the total Medicaid population. Indices above 1.00 indicate that the Medicaid population group consumed more resources than the total Medicaid Population than one would have predicted based on relative risk. Population groups with indices above 1.00 are generally considered "less efficient."

Efficiency Indices

Eligibility Category	Age/Sex Risk	Clinical Risk
Total Medicaid	1.00	1.00
State Funded Eligibility	0.53	0.83
Transitional MA	0.39	0.57
Healthy Kids	0.52	0.80
QMB Disabled	0.81	0.59
SSI Disabled	1.83	1.02
CHIP	0.11	0.57
Poverty Child	0.53	0.49
Family Medicaid	0.50	0.73
Poverty 6	0.69	1.00
All Other Medicaid	2.22	0.94

Source: MAHCP, BBER.

Only two Medicaid population groups consumed more resources than one would have predicted based on the age/sex composition of the population; SSI Disabled and All Other Medicaid. These two population groups are less efficient than one would have predicted based solely on the age and gender composition of the population groups. When further adjusted for clinical risk, nearly all population groups are more efficient than predicted and when compared to the overall Medicaid population. Caution should be used however in the interpretation of the efficiency indices. First, the efficiency indices are cost-oriented and do not necessarily reflect clinical outcome. The indices only tell us how each population group uses health resources relative to what was predicted based on their risk according to age and sex, and clinical experiences. It could be the case that indices below 1.0 suggest that although the population group consumed fewer health resources than predicted based on risk, the population isn't consuming the resources it should, and is therefore underserved.

Second, cost efficiency indices reveal significant variation across Medicaid eligibility categories (difference between the lowest and highest indices is over 100 percent). The underlying factors that explain this variation have not been explored, such as the potential for over/under use of medical care by some populations and clinical gaps in health care. Multiple metrics exist to measure access and quality of care. The National Committee for Quality Assurance (NCQA) publishes one of the gold standards for performance measures, the Healthcare Effectiveness Data and Information Set (HEDIS). HEDIS consists of 75 measures across eight domains of care, and is used by more than 90 percent of health plans in the U.S. to measure performance on care and service. The NCQA collects Medicare HEDIS data on behalf of the Centers for Medicare & Medicaid Services (CMS), and Medicaid HEDIS data on behalf of state agencies.

An example of one HEDIS measure is follow-up care for children prescribed ADHD medicine. The prevalence of Attention Deficit Disorder (ADD) in Montana is twice the national average. Performance measures include identification of the prescribed ADHD medication, follow-up care within 30 days when the medication was first prescribed, and

a face-to-face visit with the medical practitioner, such as nurse practitioner, physician assistant, or other non-medical doctors who have prescribing authority. Hence, aside from just measuring the use of resources through cost, HEDIS measures a qualitative aspect of care.

Variation in PMPM Medicaid Costs Across States

In a 2010 study by Mathematica Policy Research, variation in costs across state Medicaid programs was examined.[1] Understanding the factors behind variation in PMPM costs state-to-state may add insights into further areas of study for PMPM variation within a state. PMPM costs varied by a factor of three across all state Medicaid programs, from a low of $272 in Arizona to a high of $860 in Alaska. The national PMPM cost was $537, with Montana's Medicaid PMPM cost at $652. Administrative PMPM costs represented a small proportion of overall PMPM costs, accounting for only 6 percent of PMPM costs on average. Although significant variation in administrative costs were found across the states, Montana's administrative costs accounted for only 6 percent of the total PMPM cost, in line with the national average.

The study also looked at the variation in PMPM costs by enrollee subgroups. State-to-state variation in PMPM costs for every subgroup varied by a factor of two to nine, with the largest difference for subgroups using long-term care. Montana's PMPM by the ten subgroups is presented in the table below, with references to the average, maximum and minimum PMPM found across the states.

[1] Debra Lipson, Margaret Colby, Tim Lake, Su Liu, and Sarah Turchin, "Value for the Money Spent? Exploring the Relationship Between Medicaid Costs and Quality," Final Report, Mathematica Policy Research, Inc., August, 2010.

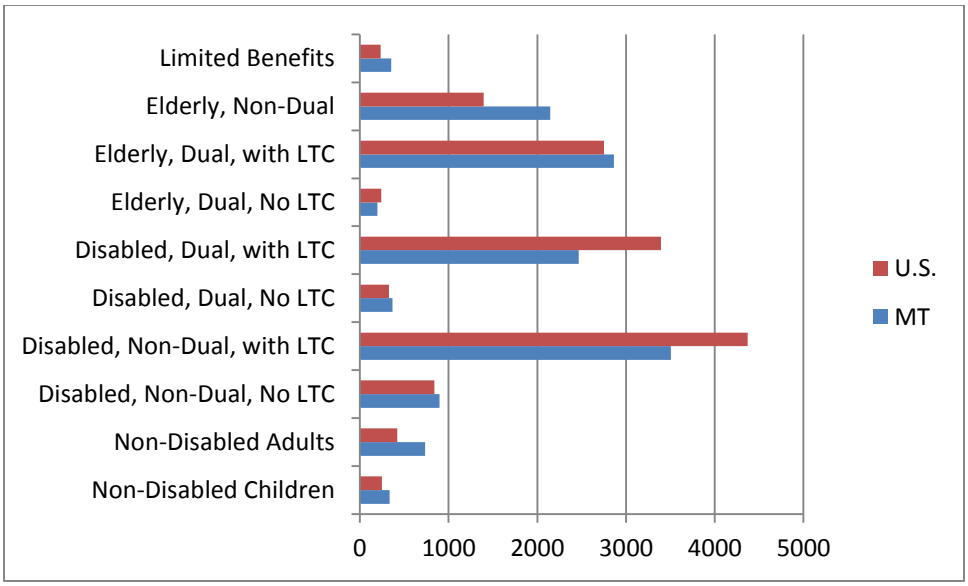
PMPM Medicaid Costs, by Enrollee Subpopulations, 2006

	Average PMPM, Montana	Maximum PMPM, U.S.	Minimum PMPM, U.S.	Average PMPM, U.S.
Non-Disabled Children	$336	$510	$121	$249
Non-Disabled Adults	$735	$763	$215	$420
Disabled, Non-Dual, No LTC	$899	$1,400	$451	$841
Disabled, Non-Dual, with LTC	$3,506	$8,274	$2,057	$4,372
Disabled, Dual, No LTC	$366	$735	$154	$327
Disabled, Dual, with LTC	$2,465	$5,735	$1,699	$3,394
Elderly, Dual, No LTC	$199	$983	$107	$240
Elderly, Dual, with LTC	$2,863	$4,521	$1,699	$2,752
Elderly, Non-Dual	$2,144	$2,348	$459	$1,395
Limited Benefits	$351	$1,534	$40	$233

Source: Mathematica Policy Research, Inc.

The high variation in subpopulations using long-term care was attributable to differences in provider reimbursement rates, the amount of services provided, and the use of institutional versus home and community-based long-term care. The largest variation in PMPM costs was found among enrollees with limited benefits, ranging from $40 PMPM to more than $1,500 PMPM. Wide variation in the PMPM for the limited benefits group was attributable to the heterogeneity of the population whose benefits varied widely across the states.

The chart below maps the average PMPM costs by subpopulations for both Montana and the U.S. With respect to the elderly subpopulations, Montana's PMPM costs are higher than the national average for both non-dual elderly and dual elderly with long-term care. Medicaid PMPM costs in Montana are below the national average for all disabled subpopulations, with the exception of non-dual disabled with no long-term care. It appears then that with respect to the disabled subpopulations, Montana's PMPM costs are well below the national average PMPM costs for the disabled. Only with respect to the care of Montana's non-disabled adults does the PMPM costs appear to be well above the national average ($735 in Montana versus $420 nationally).



Source: Mathematica Policy Research, Inc.

The Mathematica Policy Research study also found that PMPM costs across subgroups are often correlated. States with below-median PMPM costs for one subgroup also tend to have below-median PMPM costs for all other subgroups. This is not the case for Montana however. By placing each state into quartiles for all subgroups state rankings reveal that Montana is in the 4th quartile for non-disabled children, non-disabled adults, elderly non-dual and the limited benefits subgroups. Montana is in the 1st quartile for disabled, non-dual with long-term care, disabled dual with long-term care, reflecting the state's lower than average PMPM costs for these subgroups. Medicaid PMPM costs for all the other subgroups are either in the second or third quartiles. Only South Carolina has PMPM costs that are in the first quartile for all subgroups, reflecting the state's consistently low costs for all subgroups.

Although the relative mix of the subgroups as a proportion of total Medicaid enrollment explained some of the variation in PMPM costs across the states, it does not explain all of the variation. To determine how the mix of population subgroups in each state affects PMPM costs, the PMPM costs for each state were standardized. Standardization assumes that every state has the same member months across the ten subgroups as the national distribution while preserving the differences in PMPM costs within each of the ten subgroups. On this level of analysis, Montana's unadjusted PMPM costs are similar to the standardized PMPM costs, indicating that the mix of subgroups in Montana does not explain the differences in PMPM costs.

Also significant in the study was the finding that age and sex are no longer good predictors of states' PMPM costs once enrollees are divided into the ten subgroups. This is somewhat expected since subgroups already control to some degree age of the enrollee (child versus adult versus elderly).

Overall, the Mathematica Policy Research study found that state costs varied considerably across the ten subgroups defined by age, disability status, use of long-term care, dual status(Medicare and Medicaid eligibility), and eligibility for limited benefits. Variation in the relative mix of the enrollees accounts for some of the differences in state PMPM costs, but once beneficiaries are segregated into more homogeneous subgroups, controls for the age and sex distribution are not significant. Local input prices do appear to be an important predictor of state PMPM costs, although wide variation in PMPM costs still existed after controlling for geographic differences in the price of medical care.

Beyond the usual explanation for differences in PMPM costs-state Medicaid reimbursement rates-the study pointed to the need for further research in two key areas. First, the differences in the health status of enrollees should be examined across subgroups. This could be accomplished using data on diagnoses, severity of conditions, functional ability and other qualitative measures. Second, the mix and quantity of specific types of services may explain the variation in PMPM costs. This would include analyses on hospital emergency room use, admissions or lengths of stay, visits to specialists, and prescription drug use.

Conclusion

Medicaid is the largest health program in the nation in terms of the number of beneficiaries. States have historically had leeway in defining eligibility and benefits within federal guidelines. More recently, the Supreme Court made expansion of Medicaid a penalty-free option for states under the recent federal reform legislation passed in 2010.

Practically all states are pursuing efforts to hold down Medicaid costs as most state revenues only slowly rebound from the effects of the recession. Understanding what drives Medicaid costs is important as states weigh in on whether to expand the Medicaid program to individuals with incomes less than 138 percent of the federal poverty level.

Understanding the composition of the Montana Medicaid population is important to identify some of the reasons underlying medical spending. The disabled and the elderly, although they account for less than 20 percent of person years in Medicaid are eligible for all 12 months at twice the rate of the adult population. The disabled and elderly experience 11 months of eligibility, compared to only 8 months of eligibility in the adult population.

The per member per month medical and pharmaceutical (PMPM) costs reveal significant variation among Medicaid populations based on eligibility. In Montana, mental health is a big component of total Medicaid spending, accounting for over a quarter of total state Medicaid spending. Further study into this population may help policy makers with legislation that not only provides services to a very needy population but also that slows the cost of serving a population that consumes one-quarter of the Medicaid budget.

Although there is significant variation in PMPM costs by Medicaid enrollment status, once PMPM costs are controlled for age, sex, and clinical experiences Montana appears to be efficient in all subgroups when compared to the overall Medicaid population. Missing however in this analysis are comparisons to the U.S., which may point to additional areas of study.

Research on state-by-state variation in PMPM costs points to the need to understand the Medicaid population according to the use of specific services and the overall health condition of the enrollee in explaining PMPM costs.