HIDI HealthStats
Statistics and Analysis From the Hospital Industry Data Institute

FEBRUARY 2017 ■ Opportunities to Generate Better Value in Missouri's Medicaid Program

- Last year, 1 percent of Medicaid patients in Missouri accounted for 20.8 percent of total hospital charges.
- For Medicaid managed care, 1 percent of patients accounted for 23.6 percent of hospital charges, while 1 percent of fee-for-service patients accounted for 19 percent of charges.
- High-cost fee-for-service patients were 20 years older and diagnosed with twice the number of chronic diseases during the year.
- 275 Medicaid beneficiaries each visited a hospital at least 52 times during fiscal year 2016, including one patient with 384 visits. Combined, these patients accounted for nearly 22,000 hospital visits and more than $100 million in charges.

HOSPITAL INDUSTRY DATA INSTITUTE
The Data Company of the Missouri Hospital Association

MO HealthNet, Missouri's Medicaid program, provides health insurance coverage to more than 800,000 low-income Missourians, including 38 percent of all children and 9 percent of all senior citizens in the state. The program accounts for nearly one-third of the total Missouri budget, and features pronounced cost centers. Individuals in the aged, blind and disabled eligibility category account for just over one-quarter of all beneficiaries, but two out of every three dollars spent on the program.[i] Additionally, both Medicaid delivery models in Missouri feature highly concentrated groups of high-cost patients and hospital superutilizers, yet significantly different populations. Managed care beneficiaries consist largely of children and mothers while fee-for-service covers large groups of medically and socially complex aged, blind and disabled beneficiaries.

The disproportionate concentration of health care consumption and expenditures among a small portion of the population is a well-documented facet of the health care system in the U.S. The top 1 percent of the population consistently consumes more than one-fifth of health care resources, the top 5 percent account for half of all spending, while the bottom 50 percent of the population accounts for just 3 percent of health care utilization and expenditures.[ii] This differential is more pronounced among patients with low socioeconomic status.[iii]

Table 1: Characteristics of Top 1 and Bottom 50 Percentile Missouri Medicaid Beneficiaries, FY 2016

Delivery Model	Position on Charge Concentration Curve	Percent of Charges	Average Age	Average Number of Chronic Conditions
All	Top 1%	20.8%	51.0	4.7
	Bottom 50%	3.9%	23.7	0.4
	Total	**100%**	**32.8**	**1.1**
Managed Care	Top 1%	23.6%	31.5	2.5
	Bottom 50%	5.4%	13.9	0.2
	Total	**100%**	**19.6**	**0.4**
Fee-for-Service	Top 1%	19.0%	51.3	4.8
	Bottom 50%	4.2%	28.5	0.5
	Total	**100%**	**37.1**	**1.4**

Source: Hospital Industry Data Institute

Disparate Consumption Patterns

The asymmetrical distribution of hospital utilization by MO HealthNet beneficiaries resembles the national cost concentration curve. During 2016,[iv] half of MO HealthNet patients accounted for just 3.9 percent of total hospital charges, while the top 1 percent accounted for 20.8 percent (Table 1). The distribution was more skewed for the managed care delivery model component of MO HealthNet, with the top percentile of patients accounting for 23.6 percent of total charges, compared to 19 percent for beneficiaries covered by the traditional fee-for-service delivery model. Top percentile utilizers in the fee-for-service model were on average 20 years older and diagnosed with nearly twice the number of chronic diseases compared to their counterparts in managed care.

During 2016, the consumption of hospital goods and services across all MO HealthNet beneficiaries in each delivery model was equally disparate (Figure 1). The bottom 80 percent of managed care and fee-for-service beneficiaries consumed just 24.4 and 21.2 percent of hospital services, respectively. Conversely, the top 20 percent of hospital patients accounted for 75.6 percent of managed care charges and 78.8 percent for fee-for-service. The top 10 percent of managed care and fee-for-service beneficiaries consumed 59 and 62 percent of hospital charges in 2016, respectively.

Figure 1: Concentration Curve of Hospital Charges for Medicaid Patients in Missouri by Delivery Model, FY 2016

Source: Hospital Industry Data Institute

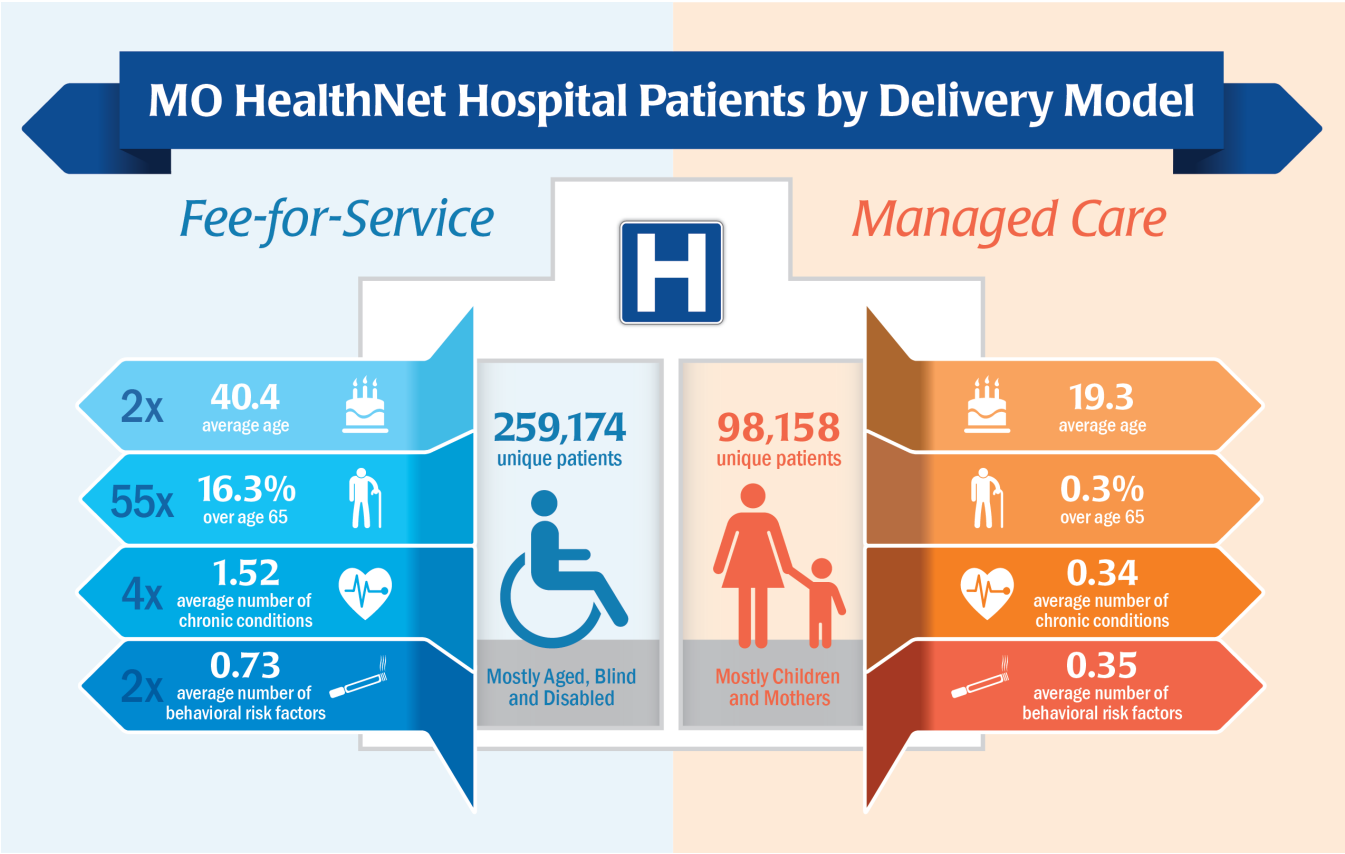
The Gini coefficient is a common measure of inequality that calculates the area between the equal distribution line and the concentration curves in Figure 1. A Gini coefficient of 1 indicates perfect inequality and zero represents perfect equality in the consumption of hospital goods and services across beneficiaries. The Gini coefficients for hospital charges in 2016 were 0.70 for managed care and 0.72 for fee-for-service.

The close resemblance of hospital resource use across managed care and fee-for-service patient deciles is not expected because of extreme differences in the targeted patient populations for each delivery model and resulting differences in the demographic, behavioral and clinical complexity associated with each cohort. The MO HealthNet managed care delivery model is a health maintenance organization under which the state contracts with three managed care organizations to "coordinate care to help individuals and families stay healthy."[v] The program currently covers counties in the geographic middle-third of the state running along the I-70 corridor. MO HealthNet beneficiaries living in the managed care service region and meeting specific characteristics are required to participate in the program. Specifically, MO HealthNet

Table 2: Characteristics of Missouri Medicaid Hospital Patients by Delivery Model, FY 2016

Delivery Model	Unique Patients	Average Age	Over Age 65		Average Number of Chronic Conditions	Average Number of Behavioral Risk Factors
			% of Patients	% of Charges		
Fee-for-Service	259,174	40.4	16.3%	26.9%	1.52	0.73
Managed Care	98,158	19.3	0.3%	1.8%	0.34	0.35
MC & FFS Churn	50,179	20.1	0.3%	1.5%	0.54	0.52
Total	**407,511**	**32.8**	**10.5%**	**22.4%**	**1.12**	**0.61**

Source: Hospital Industry Data Institute
Note: Average age and number of chronic conditions are slightly different than in Table 1 because churn patients are reported seperately.



managed care is targeted primarily toward low-income children, custodial parents and pregnant women.[vi] Conversely, the MO HealthNet fee-for-service program covers all beneficiaries living outside of the managed care service region, and virtually all high-cost ABD beneficiaries.

Despite the extreme differences observed in the MO HealthNet fee-for-service population – twice as old, 4.5 times as likely to have chronic comorbidities and twice as likely to have behavioral risk factors – the hospital cost curves for Medicaid managed care and fee-for-service were nearly identical in 2016.

Table 2 includes the demographic, behavioral and clinical characteristics for MO HealthNet beneficiaries who visited a hospital during 2016 by delivery model: fee-for-service, managed care and patients who were covered at some point during the year by both — a term known as churn. Compared to managed care, fee-for-service patients were on average 21 years older, 55 times more likely to be elderly and dually-eligible for Medicare, diagnosed with 4.5 times more chronic diseases, and diagnosed with 2.1 times more behavioral risk factors.

Figure 2 shows the prevalence of each clinical and behavioral risk factor evaluated for MO HealthNet hospital patients by delivery model in 2016. Each category, with the exception of asthma (a prevalent pediatric condition) was dominated by fee-for-service, followed by churn patients, then managed care patients. Compared to managed care patients, disparities in the prevalence of clinical and behavioral risk factors for fee-for-service patients were as follows.

- 22 times for atherosclerosis
- 19 times for stroke
- 18 times for kidney disease
- 10 times for COPD
- 9 times for cancer
- 5 times for alcohol abuse
- 3 times for substance abuse
- 3 times for obesity

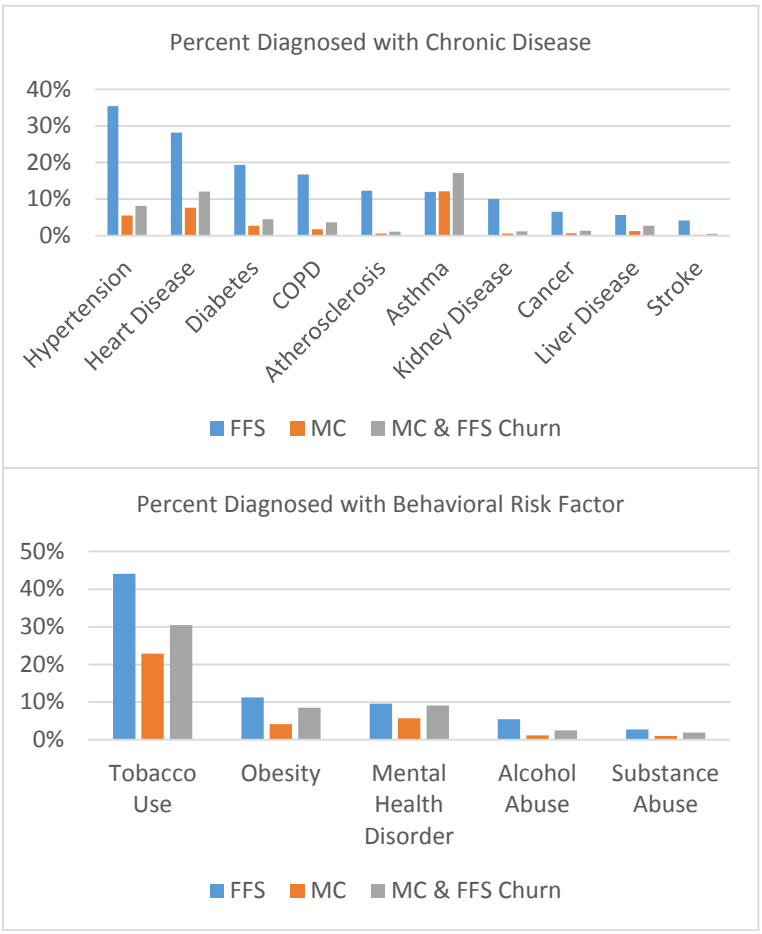
MO HealthNet Hospital Superutilizers

Because of new paradigms in accountable care and population health management, one particular segment of patients — hospital superutilizers— has been the focus of emerging models of patient-centered care delivery that concentrate on both medical and socioeconomic conditions. Community-integrated and targeted care coordination for hospital superutilizers is a commonly prescribed strategy for reducing costs and inappropriate emergency department utilization, while improving health outcomes for beneficiaries.[iii]

Figure 3 shows the distribution of MO HealthNet hospital patients by the number of times they visited a hospital ED or were hospitalized last year. More than half of patients had one or two hospital encounters (41 and 22 percent, respectively), and three-quarters had three or fewer visits in 2016 (310,507 patients, or 76.2 percent). The remaining 24 percent of patients had at least four encounters which is a commonly used threshold for hospital superutilization. These patients accounted for 57.6 percent of all MO HealthNet hospital inpatient and ED visits during 2016. Nationally, 4.5 to 8 percent of ED patients have four or more visits per year, accounting for 21 to 28 percent of all visits.[iii]

Nearly 15,000 MO HealthNet beneficiaries (3.6 percent) visited a hospital ED or were hospitalized 10 or more times during 2016 (Figure 3, middle inset). These patients accounted for 20.3 percent of all hospital visits, a ratio of nearly 6-to-1. Within this subset of MO HealthNet hospital patients were 275 individuals with between 52 and 384 hospital encounters during 2016 — an average of at least one visit per week (Figure 3, top inset).

Figure 2: Prevalence of Clinical and Behavioral Risk Factors Among MO HealthNet Beneficiaries Diagnosed in a Hospital Setting by Delivery Model, FY 2016

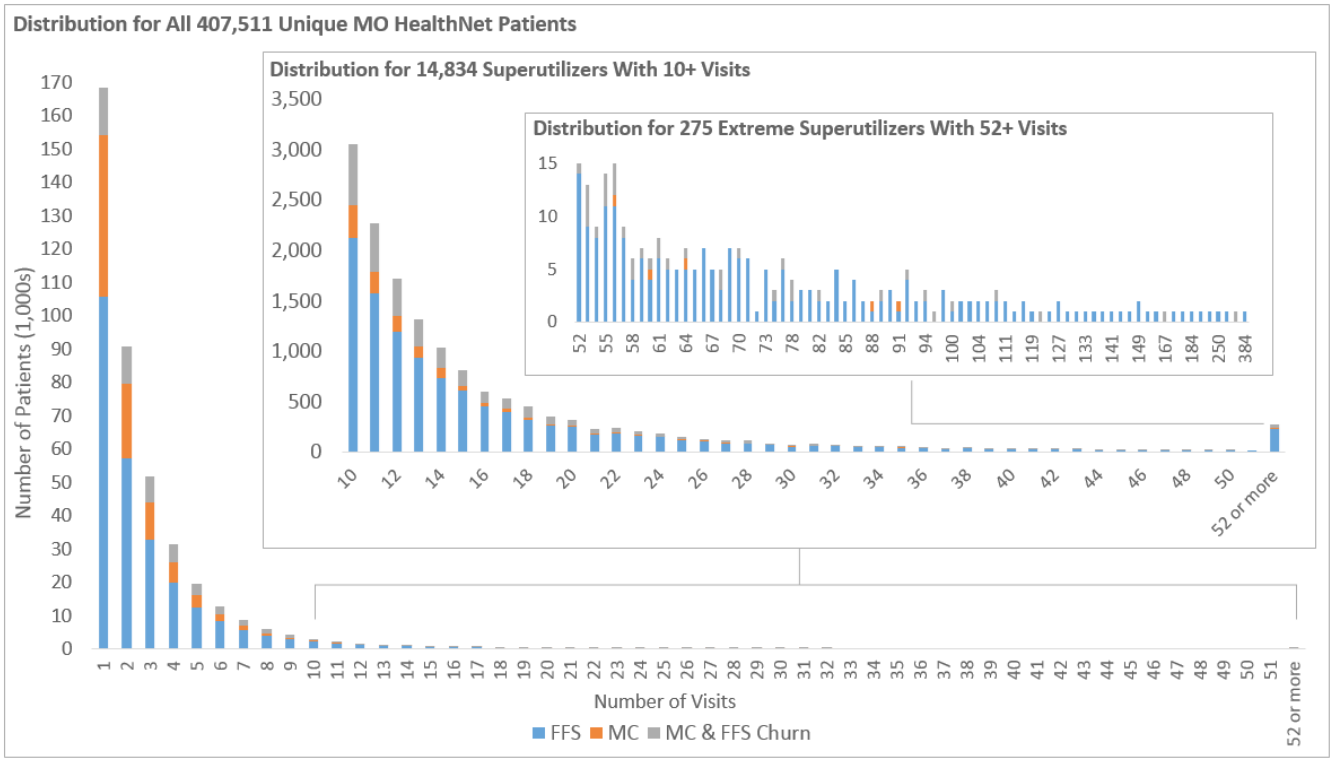


Source: Hospital Industry Data Institute

These 275 "extreme" hospital superutilizers accounted for a combined 21,896 hospital inpatient and ED visits during 2016, an average of 80 per patient. The total charges associated with these patients topped $100 million during the year, with an average amount of more than $360,000 per patient. The clinical, social and behavioral complexities observed among these patients were profound — 99 percent were diagnosed with at least one, and on average 4.5 chronic diseases during the year; 98 percent having at least one, and on average 2.6 behavioral risk factors; and 14 percent being reported as homeless at least once during 2016.

One patient in particular had 384 visits to 17 different hospitals and more than $1 million in charges during fiscal year 2016. Records indicate this patient visited more than one hospital on 112 out of 366 total days last year. The cause of this patient's visits were most frequently related to chronic pain — the patient was diagnosed with six different chronic comorbidities including cancer and behavioral disorders. Since 2008, the patient visited a hospital 2,395 times — an average of 266 visits per year. Figure 4 shows the timing for this patient's 384 ED visits and periods of hospitalization during 2016.

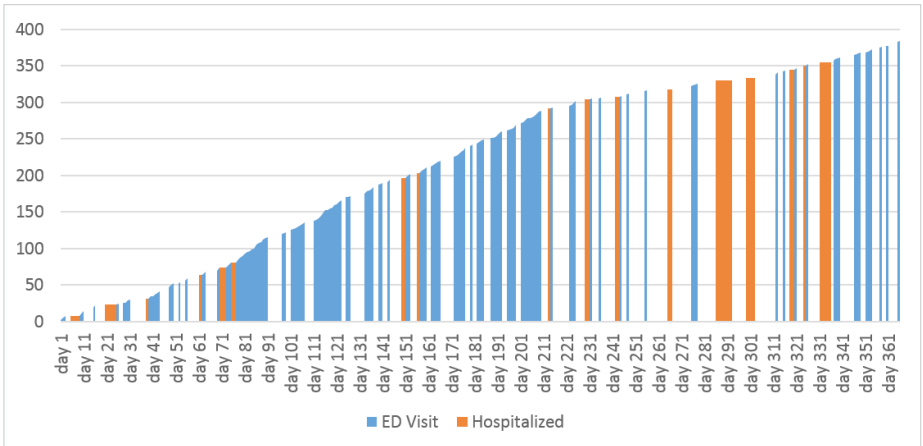
Figure 3: Number of Hospital Inpatient and ED Visits for MO HealthNet Patients in FY 2016



Source: Hospital Industry Data Institute

In general, and particularly toward the end of the year, longer periods without ED care often resulted in a costly inpatient hospitalization. These instances are indicated by the orange bars, the width of which indicate length of stay. While it is unclear how often this patient accessed community-based ambulatory care, the opportunity for care coordination between MO HealthNet and the 17 hospitals visited is evident.

Figure 4: One Patient's Cumulative ED Visits and Hospitalizations During FY 2016



Source: Hospital Industry Data Institute

The Institute of Medicine describes care coordination as a key strategy for improving the effectiveness, safety and efficiency of the health care system in the U.S. The targeted coordination of care across payer, provider and community settings for high-cost Medicaid patients and superutilizers would produce gains for both patients and taxpayers, and move Missouri toward the triple aim of better health, better care and lower costs.

Suggested Citation
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[i] Coleman, A. (2014). Missouri Medicaid Basics, Summer 2014. Missouri Foundation for Health.

[ii] Cohen, S. & Uberoi, N. (2013, August). Differentials in the concentration in the level of health expenditures across population subgroups in the U.S., 2010. Medical Expenditures Panel Survey Statistical Brief #421. Rockville, MD: Agency for Healthcare Research and Quality.

[iii] Mann, C. (2013, July 24). Targeting Medicaid super-utilizers to decrease costs and improve quality. CMCS Informational Bulletin. Baltimore, MD: Department of Health and Human Services, Centers for Medicare and Medicaid Services, Center for Medicaid and CHIP Services.

[iv] Fiscal year 2016 includes discharges occurring Oct. 1, 2015, through Sept. 30, 2016.

[v] Missouri Department of Social Services. Managed Care Program. http://dss.mo.gov/mhd/mc/

[vi] Missouri Department of Social Services. MO HealthNet Managed Care Population. http://dss.mo.gov/mhd/mc/pages/population.htm

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