MIDWEST HEALTH INITIATIVE

Total Cost of Care:

A St. Louis Community Report

November 2018

Report from MHI's participation in a six-community comparative study led by the Network for Regional Healthcare Improvement and funded by the Robert Wood Johnson Foundation

Overview

Healthcare costs continue to rise in Missouri and around the nation despite efforts to contain them. Americans spent an estimated $3.3 Trillion on healthcare in 2016, up 50 percent from the $2.2 Trillion spent just a decade before. Data from the Midwest Health Initiative (MHI) show that overall spending for individuals in the St. Louis region rose 2.7 percent from 2015 to 2016, while resource use grew by 13.7 percent over the same time period. Meanwhile, per capita income in the region grew by just 1 percent from 2015 to 2016. To change the current unsustainable trajectory of spending, it is essential to understand what is driving these increases.

Since 2014, MHI has been among six regional healthcare improvement collaboratives (RHICs) to report the Total Cost of Care (TCOC) in their communities. The project is funded by the Robert Wood Johnson Foundation and led by the Network for Regional Healthcare Improvement (NRHI). TCOC is a standardized approach to measuring cost and resource use that has been developed by HealthPartners of Minneapolis and endorsed by the National Quality Forum (NQF). NRHI's TCOC project is unique because it provides detailed results that are actionable at a local level, but also a broad overview to capture national trends. Work done by MHI and its fellow RHICs over the past three years has laid the foundation for national efforts to understand their cost and resource use that are now beginning to bear fruit.

Total Cost of Care Project Participants

- Midwest Health Initiative
- Health Insight Oregon
- Center for Improving Value in Healthcare (CIVHC) Colorado
- Minnesota Community Measurement
- Maryland Health Care Commission
- Health Insight Utah

Formula for Total Cost of Care

MHI used healthcare data from unions, self-insured employers and large commercial health insurance companies to perform its analysis. The data included enrollment information, medical and pharmacy claims for commercially insured members in the St. Louis Metropolitan Area.

TCOC looks at the costs of health care delivered across all settings, from inpatient hospitalizations to doctor visits and prescriptions filled at local pharmacies. It includes a measure of resources used to deliver care, and a risk adjustment to control for differences in patient populations. This enables comparison across regions and the medical groups within a region.

Gathering and reporting the data is only a first step. To understand trends and opportunities behind growing healthcare costs, MHI and other RHICs share their results and engage in dialogue with local stakeholders including medical groups and health systems, consumers and payers. The information is used to identify opportunities for improvement, shape strategies and share commitments for aligned actions.

Key Concepts

Price	Amount paid to a provider for a covered service. It is affected by fee schedule, choice of provider and place of service.
Resource Use	Amount and intensity of tests, services and treatments provided.
Total Cost	Price multiplied by resource use.

Regional Results — How St. Louis Compares

NRHI members from six regions have completed three years of TCOC analysis and reporting. The tables below illustrate regional comparative price, resource use, and total cost.

Price varies widely across and within regions. In St. Louis, overall prices were 15 percent below the average for all six regions in 2016; prices in Colorado were 13 percent above the average. Further analysis shows that prices for inpatient care in St. Louis were 23 percent below average, lower than any of the other five participating regions. In Colorado and Oregon, inpatient prices were 31 and 25 percent above average respectively.

Prices in St. Louis were significantly below average for all 6 regions in 2016.

Price	Colorado	Maryland	Minnesota	Oregon	St. Louis	Utah
Overall	*13%*	*-14%*	*4%*	*16%*	*-15%*	*1%*
Inpatient	*31%*	*-19%*	*3%*	*25%*	*-23%*	*-4%*
Outpatient	*15%*	*-11%*	*-3%*	*32%*	*-22%*	*3%*
Professional	*7%*	*-18%*	*11%*	*22%*	*-17%*	*-1%*
Pharmacy	*5%*	*1%*	*7%*	*-10%*	*-5%*	*4%*

Regions with lower prices don't necessarily use fewer resources. In St. Louis, overall resource use was the highest of all communities. Of note, outpatient care was 29 percent above average, driven in part by a higher use of MRIs and CT scans than the average for all six regions. Doctors in St Louis order these costly imaging test 9 percent more often while doctors in Oregon ordered them 18 percent less often than the average. Professional service resource use in St. Louis was lower than most other communities, while inpatient resource use was among the highest. A more detailed analysis showed that this was due to lengths of stay 23 percent longer than average, not more admissions.

Resource use in St. Louis for outpatient care and prescription drugs were significantly higher than the average for all 6 regions.

Resource Use	Colorado	Maryland	Minnesota	Oregon	St. Louis	Utah
Overall	*5%*	*-7%*	*7%*	*-10%*	*10%*	*-5%*
Inpatient	*-8%*	*-10%*	*9%*	*-16%*	*13%*	*13%*
Outpatient	*17%*	*-26%*	*6%*	*-24%*	*29%*	*3%*
Professional	*-4%*	*2%*	*17%*	*-3%*	*-5%*	*-8%*
Pharmacy	*22%*	*-4%*	*-16%*	*-7%*	*21%*	*-17%*

Differences in prices and resource use drive differences in cost. St. Louis was the second lowest region in overall total cost, largely driven by lower prices. Yet, cost for outpatient care and prescription drugs were above average, driven by high resource use, rather than price.

Total cost of care was below average for St. Louis but was higher for some types of services. The difference was driven by resource use.

Total Cost	Colorado	Maryland	Minnesota	Oregon	St. Louis	Utah
Overall	*19%*	*-20%*	*11%*	*4%*	*-6%*	*-4%*
Inpatient	*21%*	*-27%*	*12%*	*5%*	*-13%*	*8%*
Outpatient	*34%*	*-34%*	*3%*	*0%*	*1%*	*5%*
Professional	*2%*	*-16%*	*30%*	*18%*	*-22%*	*-9%*
Pharmacy	*28%*	*-3%*	*-10%*	*-16%*	*15%*	*-14%*

The View From St. Louis

Just as there are significant cost and resource use differences between regions, there also are differences within the region. This is crucial information for people who pay for and receive healthcare, especially the growing number with high-deductible health insurance plans that require them to pay out-of-pocket for the first few thousand dollars of care.

The information which follows compares patient populations for St. Louis' larger community -based medical groups. For each medical group, a numerical risk score was calculated. The risk score provides an understanding of the illness burden for each medical group's population. The chart on the right shows the number of patients attributed to each medical group, along with their average age and risk score.

The Total Cost Index (TCI) is adjusted based on the level of risk for patients of each medical group. Since groups with a higher risk score would be expected to have a higher cost, this adjustment levels the playing field so that TCI is measuring cost as opposed to the clinical difference in patient populations between groups.

Data Demographics for Commercial Population

BJC Medical Group

	2015	2016
Lives :	7,800	7,494
Risk Score :	1.54	1.60
Age:	44.5	44.4

MercyT

	2015	2016
Lives :	24,045	24,570
Risk Score:	1.25	1.27
Age:	37.4	36.8

St. Luke's HOSPITAL

	2015	2016
Lives:	3,648	3,705
Risk Score:	1.62	1.63
Age:	45.5	45.6

esse HEALTH

	2015	2016
Lives:	4,775	5,871
Risk Score:	1.17	1.33
Age:	33.4	37.0

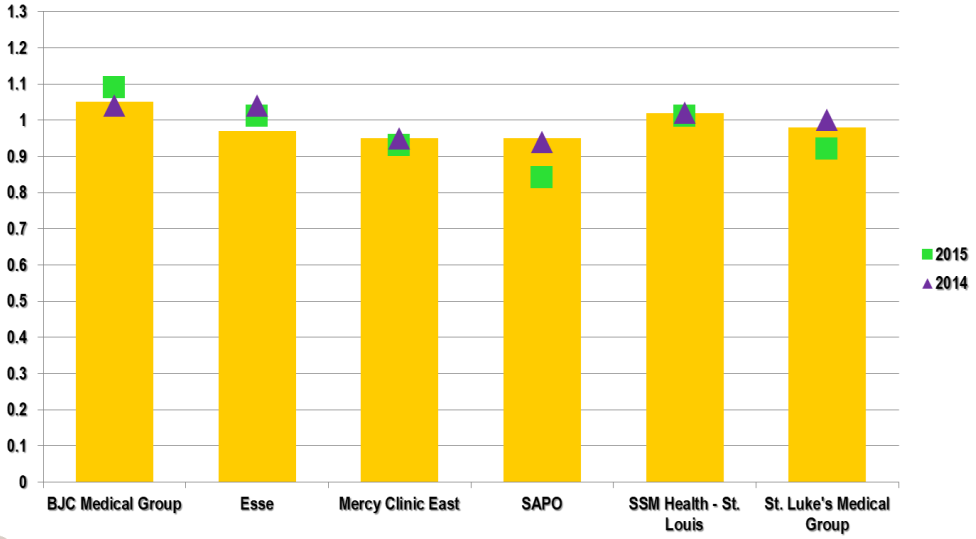
St. Anthony's

	2015	2016
Lives:	2,826	1,726
Risk Score:	1.61	1.46
Age:	44.1	44.6

SSMHealth

	2015	2016
Lives:	13,067	13,857
Risk Score:	1.31	1.34
Age:	37.2	37.2

Total Cost Index (TCI)

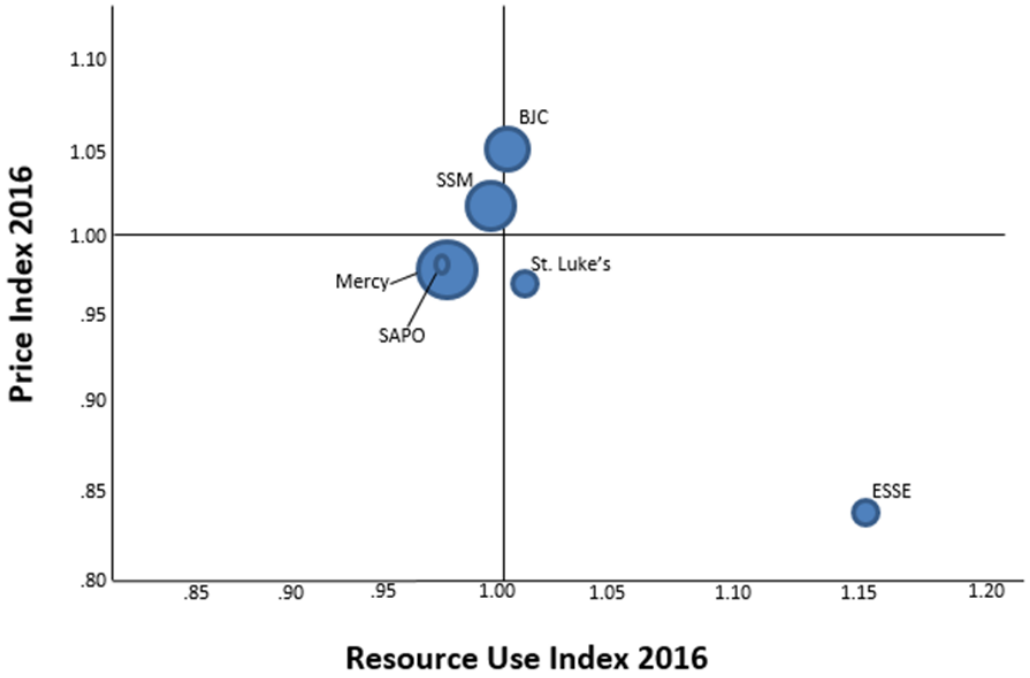


Getting to Value

It is crucial to disentangle what factors are driving the rising cost of care. For its analysis, MHI created an index of price and a separate index of resource use and plotted these on the Value Graph. Price is shown on the vertical axis, while resource use is depicted on the horizontal.

The size of the dot for each group represents the relative number of patients attributed to the group's Primary Care Physicians (PCPs).

Value Graph
Medical Groups



Two medical groups, Mercy and St. Anthony's Physician Organization (SAPO) had lower-than-average prices and used fewer-than-average resources. Esse had the lowest Price Index, but a higher-than-average resource use. Raw and risk-adjusted results are shown in the table below.

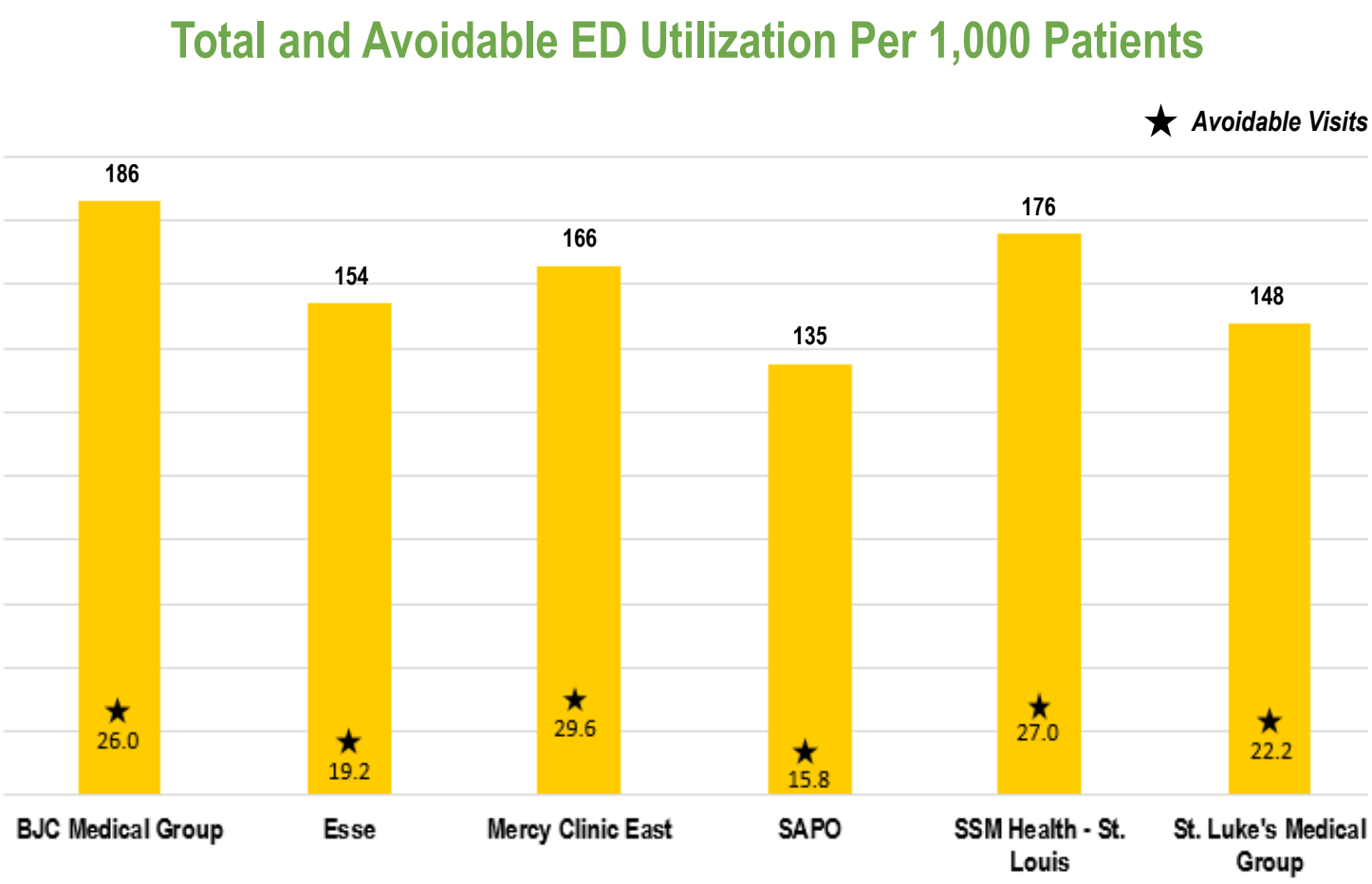
Medical Groups

	Raw PMPM	Risk Score	Risk Adjusted PMPM	Total Cost Index	Resource Use Index	Price Index
BJC	$539.87	1.61	$335.51	1.05	1.01	1.05
ESSE	$415.38	1.34	$310.44	0.97	1.15	0.84
Mercy	$385.57	1.28	$302.28	0.95	0.98	0.98
St. Luke's	$507.78	1.63	$311.27	0.98	1.02	0.96
SAPO	$442.88	1.47	$302.07	0.95	0.97	0.98
SSM	$435.99	1.34	$325.20	1.02	1.00	1.02

Drilling Down

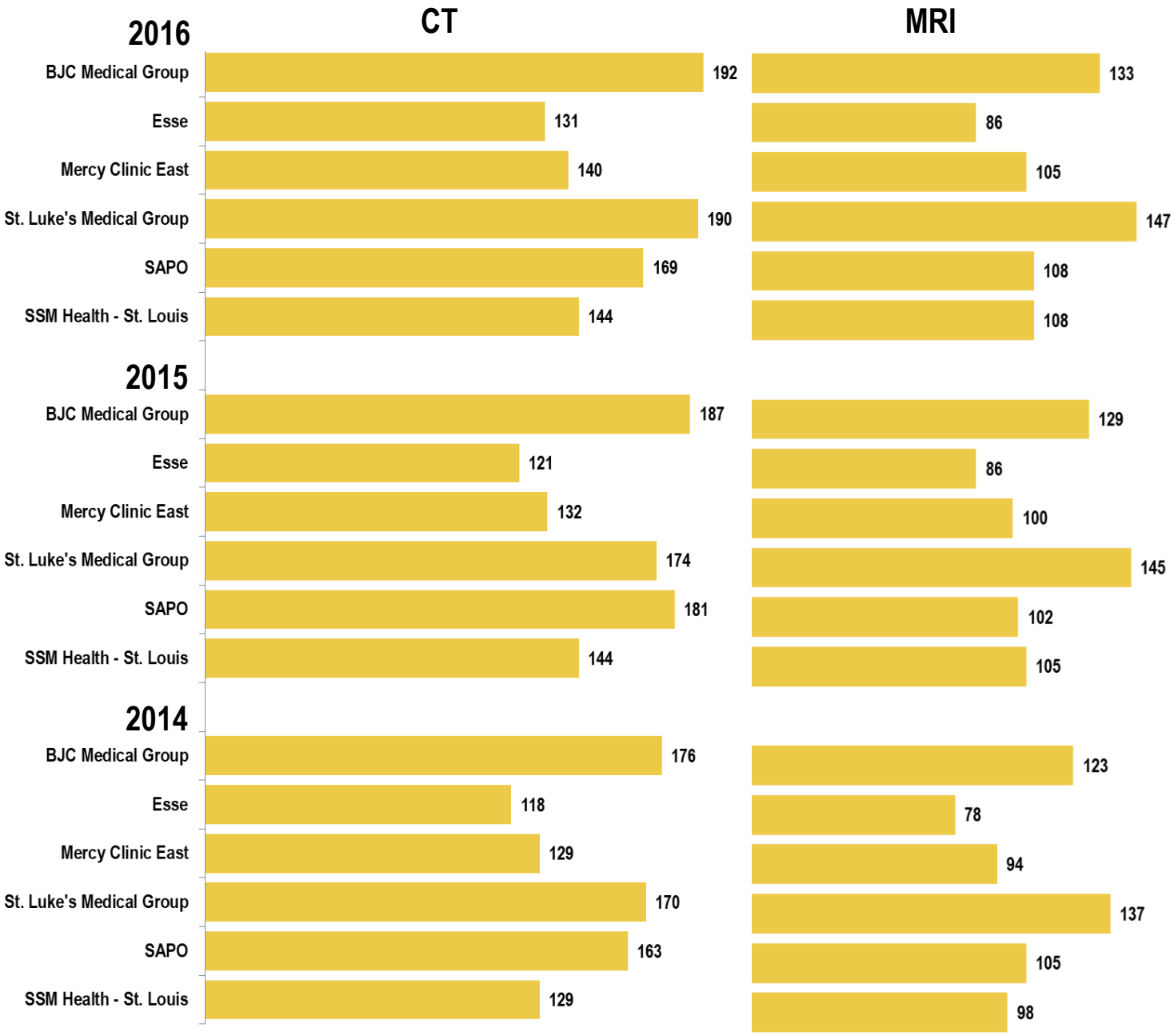
To examine the inputs of healthcare cost more fully, MHI leveraged its complete data set to examine claims for nearly 900,000 people in the St. Louis region during 2016. Data used in the TCOC analysis, which includes only people between the ages of 1 and 64, is a subset of this larger database. The analysis demonstrated differences in service use for patients of large medical groups.

Using the full data set, the analysis showed that adult patients of some medical groups used hospital emergency rooms at higher rates than adult patients in other groups. The rate of "potentially avoidable visits," emergency department (ED) visits for care that could be delivered more efficiently in a doctor's office, also varied significantly between groups as the chart below demonstrates. Since care delivered in an emergency room is three to five times more expensive than the same care in a doctor's office, potentially avoidable ED use adds to health costs and exposes patients to additional tests or treatments that may be unnecessary. In St. Louis and elsewhere around the country, medical groups have reduced avoidable ED use by opening on nights and weekends, or by setting aside blocks of time on certain days for patients who need a same-day appointment.



As you recall, the national TCOC results show that St. Louis doctors order more CT scans and MRIs than doctors in most other regions. Because of this, MHI analyzed use of this expensive imaging equipment to track differences between large medical groups in the St. Louis region. The analysis showed significant variations in rates of use. Patients attributed to Esse providers had a 46.5 percent lower rate of CT scans than those attributed to BJC Medical Group. Similarly, SSM Health-St. Louis had a 36 percent lower rate of MRI use than St. Luke's Medical Group.

CT and MRI Utilization Rates per 1,000 patients



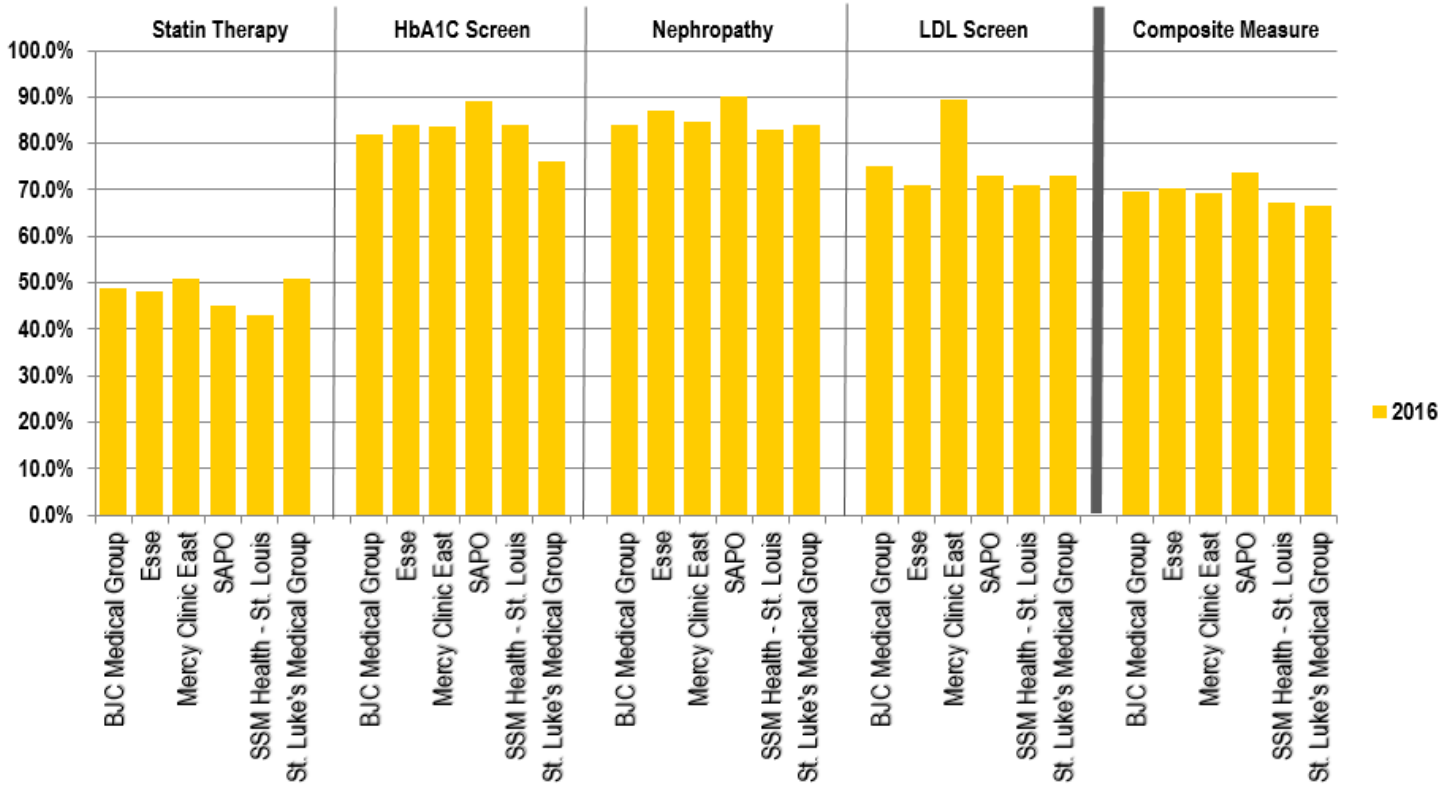
Saving Money In the Long-Term

Getting the right care at the right time is good for patients clinically and financially. This is especially true for patients with chronic illnesses like diabetes, which can cause serious and expensive health complications unless managed carefully. Best practices call for every patient with diabetes to receive at least four basic tests each year. These are:

- HbA1c screening, which measures effects of chronically high blood glucose levels
- Nephropathy screening, to look for evidence of kidney complications
- A Diabetic Eye Exam, because diabetes is a leading cause of blindness
- Cholesterol Testing to look for evidence of diabetes-related heart disease

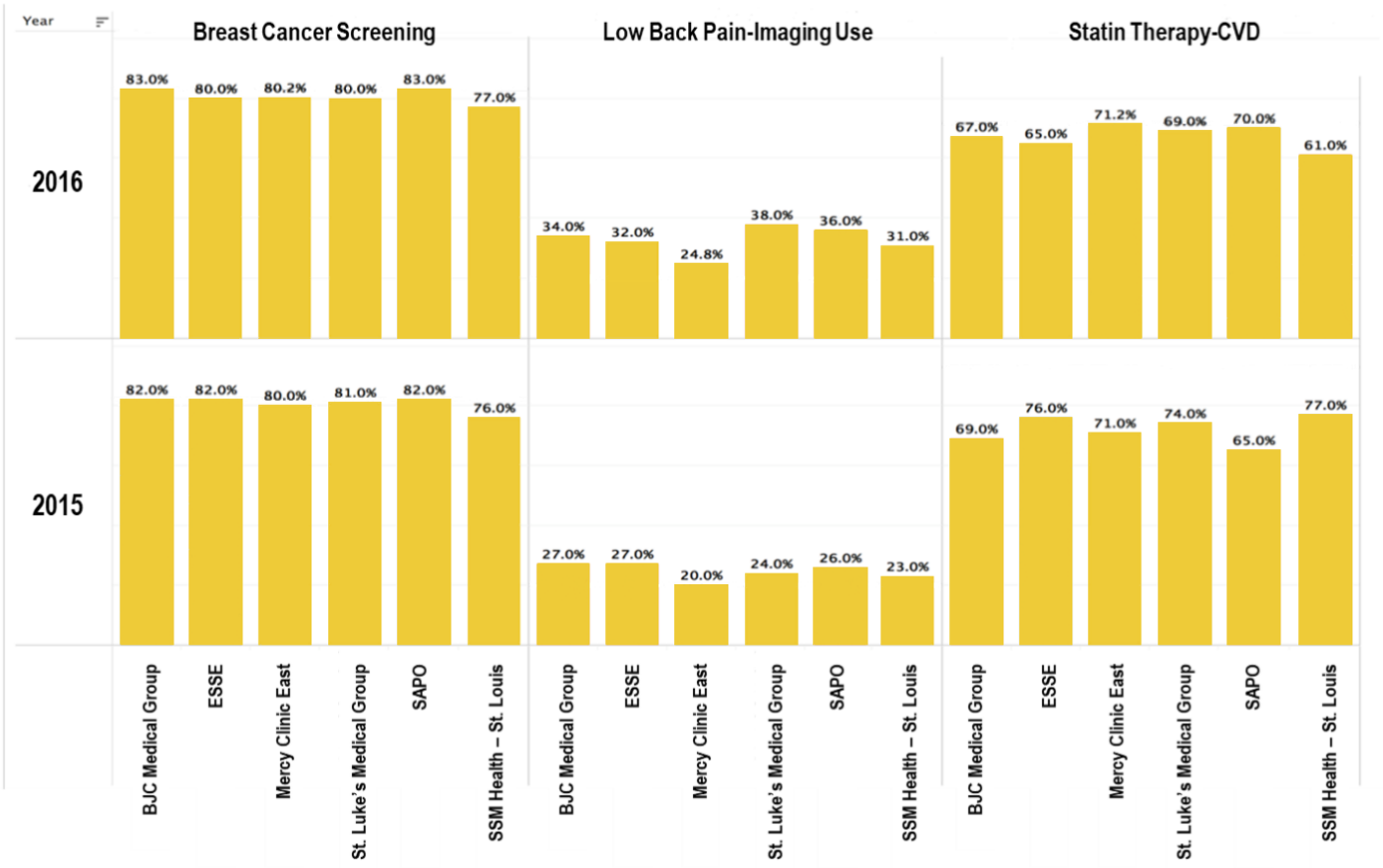
The chart below shows how often patients with diabetes received the screenings. The composite measure on the far right shows how often individuals with diabetes received at least three of the four screenings, since eye exams are not always reflected in claims data. Even though these tests have been recommended for decades, there is still an important opportunity for improvement as the chart below indicates.

Diabetes Quality and Composite Measures



The MHI analysis also examined the percentages of women screened for breast cancer and the percentage of patients with heart disease who received cholesterol-lowering medications called statins. A third measure looked at the percentage of people with low back pain who had an x-ray or other imaging test within the first 30 days after the injury. Imaging tests hold risk and according to physician guidance set forth by the American Board of Internal Medicine Foundation, these tests generally do not make patients feel better faster. The MHI analysis found variations in the rates of appropriate and inappropriate testing.

Other Quality Measures



Conclusion

Three years of TCOC analysis at the national and local levels has documented wide disparities in price, resource use and cost across and within regions. Those differences could be caused by practice patterns, market forces or cultural perceptions about how to access care.

TCOC results provide a common framework for stakeholders including providers, health systems, patients and payers to examine the differences and focus their individual and collective efforts on improving cost and quality.

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About the Midwest Health Initiative

The Midwest Health Initiative is a regional healthcare improvement collaborative supporting physicians, employers, hospitals, health plans and consumers to improve the health and the quality and affordability of health care in Missouri and the metropolitan areas along its borders. MHI stewards a large commercial claims data asset and serves as a neutral, trusted forum for diverse stakeholders to determine shared priorities for action and work collaboratively to achieve their goals.

MHI's Vision is to create a community that consistently leads the nation in health, care quality and affordability. For more information, please visit www.midwesthealthinitiative.org

About NRHI

The Network for Regional Healthcare Improvement (NRHI) is a national membership organization of regional health improvement collaboratives (RHICs) and partners representing more than 30 states and territories across the US. Our members work in and across their regions to collaborate and transform healthcare with the goal of achieving better health, and high-quality affordable care.

About Robert Wood Johnson Foundation

For more than 45 years the Robert Wood Johnson Foundation has worked to improve health and health care. We are working alongside others to build a national Culture of Health that provides everyone in America a fair and just opportunity for health and well-being. For more information, visit www.rwjf.org. Follow the Foundation on Twitter at *www.rwjf.org/twitter* or on Facebook at *www.rwjf.org/facebook*.

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