

SECTION

5

**Quality of care in the
Medicare program**

Chart 5-1. SNFs slightly improved on some measures but not others from 2011 to 2014

Measure	2011	2012	2013	2014
Discharged to the community	33.1%	35.6%	37.5%	37.6%
Potentially avoidable readmissions during SNF stay	12.4	11.5	11.2	10.9
Potentially avoidable readmissions during 30 days after discharge from SNF	5.9	5.7	5.5	5.6
Rate of improvement in one or more mobility ADLs	43.6	43.5	43.7	43.5
Rate of no decline in mobility	87.3	87.2	87.2	87.1

Note: SNF (skilled nursing facility), ADL (activity of daily living). High rates of discharge to the community indicate better quality. High readmission rates indicate worse quality. The rate of improvement in mobility ADLs is the average of the rates of improvement in bed mobility, transfer, and ambulation, weighted by the number of stays included in each measure. Stays with improvement in one, two, or three mobility ADLs are counted in the improvement measures. "Rate of no decline in mobility" is the share of stays with no decline in any of the three ADLs. Rates are the average of facility rates and calculated for all facilities with 25 or more stays, except the rate of potentially avoidable readmission during the 30 days after discharge, which is reported for all facilities with 20 or more stays. Measures exclude hospital-based swing-bed units.

Source: MedPAC analysis of Medicare claims and Minimum Data Set data for 2011–2014.

- Rates of risk-adjusted community discharge and potentially avoidable readmission during the SNF stay improved slightly between 2013 and 2014. A higher percentage of beneficiaries were discharged to the community, and a lower percentage of beneficiaries were readmitted to an acute care hospital during the SNF stay for 1 of 13 potentially avoidable conditions.
- The rate of potentially avoidable readmissions during the 30 days after discharge from the SNF worsened slightly from 2013 to 2014.
- Both readmission rates include only patients readmitted to a hospital with the principal diagnosis of a potentially avoidable condition. The 13 potentially avoidable conditions are congestive heart failure, electrolyte imbalance/dehydration, respiratory infection, sepsis, urinary tract or kidney infection, hypoglycemia or diabetic complications, anticoagulant complications, fractures and musculoskeletal injuries, acute delirium, adverse drug reactions, cellulitis/wound infections, pressure ulcers, and abnormal blood pressure.
- The two risk-adjusted measures of change in functional status were essentially unchanged between 2013 and 2014. The mobility measures are composites of the patients' abilities regarding bed mobility, transfer, and ambulation, and they consider the likelihood that a patient will change, given her functional ability at admission. A facility admitting patients with worse prognoses will have a lower expected rate of achieving these outcomes, and this difference will be reflected in the risk-adjusted rates. The rate of improvement in mobility shows the share of stays with improvement in one, two, or three ADLs: bed mobility, transfer, and ambulation. The rate of no decline in mobility is the share of stays with no decline in any of the three ADLs.

Chart 5-2. Risk-adjusted home health quality measures held steady or improved slightly from 2008 to 2014

Functional measure	2004	2008	2013	2014
Hospitalization rate	27.7%	28.8%	26.5%	27.8%
Share of a home health agency's beneficiaries with improvements in:				
Walking	37.2%	45.0%	61.2%	63.6%
Transferring	51.0%	53.1%	57.1%	58.9%

Note: The measure for walking changed in 2011, and therefore the 2004 and 2008 results shown are not comparable with data from later years.

Source: MedPAC analysis of Outcome and Assessment Information Set data compiled by the University of Colorado.

- Since 2004, the rates of functional improvement have slightly improved each year. The hospitalization rate has not changed significantly.
- Medicare publishes risk-adjusted home health quality measures that track changes in the functional abilities of patients who receive home health care. These measures do not include home health episodes that end with a hospitalization.

Chart 5-3. IRFs improved on risk-adjusted rates of discharge to the community and potentially avoidable rehospitalizations

	2011	2012	2013	2014
Potentially avoidable rehospitalizations during IRF stay	2.9%	2.6%	2.5%	2.5%
Potentially avoidable rehospitalizations during 30 days after discharge from IRF	5.0	4.6	4.5	4.5
Discharged to the community	73.9	75.1	75.7	76.1
Discharged to a SNF	6.9	6.7	6.8	6.9

Note: IRF (inpatient rehabilitation facility), SNF (skilled nursing facility). High rates of rehospitalization and discharge to a SNF indicate worse quality. High rates of discharge to the community indicate better quality. Rates are the average of the facility rates and are calculated for all facilities with 25 or more stays.

Source: Analysis of Inpatient Rehabilitation Facility-Patient Assessment Instruments from CMS.

- Between 2011 and 2013, the national average rate of risk-adjusted potentially avoidable readmissions during the IRF stay declined from 2.9 percent to 2.5 percent, where it remained in 2014. (Lower rates are better.) A similar pattern was observed in the rate of risk-adjusted potentially avoidable readmissions within 30 days after discharge from an IRF: The national average declined between 2011 and 2013 (from 5.0 percent to 4.5 percent) and remained unchanged in 2014.
- The rehospitalization rates count only stays readmitted to a hospital with the principal diagnosis of a potentially avoidable condition. The potentially avoidable readmissions we measure are respiratory-related illness (pneumonia, influenza, bronchitis, chronic obstructive pulmonary disease, and asthma); sepsis; congestive heart failure; fractures or fall with a major injury; urinary tract or kidney infection; blood pressure management; electrolyte imbalance; anticoagulant therapy complications; diabetes-related complications; cellulitis or wound infection; pressure ulcer; medication error or adverse drug reaction; and delirium.
- Between 2013 and 2014, the national average risk-adjusted community discharge rate increased slightly from 75.7 percent to 76.1 percent. (Higher rates are better.) Our measure of community discharge does not give IRFs credit for discharging a Medicare beneficiary to the community if the beneficiary is subsequently readmitted to an acute care hospital within 30 days of the IRF discharge.

Chart 5-4. Dialysis quality of care: Some measures show progress, others need improvement, 2009–2013

Outcome measure	2009	2011	2013
Percent of in-center hemodialysis patients:			
Receiving adequate dialysis	N/A	96%	97%
Managing anemia			
Mean hemoglobin 10 to <12 g/dL	56%	70	71
Mean hemoglobin ≥12 g/dL*	35	17	5
Mean hemoglobin <10 g/dL	9	14	24
Dialyzed with an AV fistula	53	59	62
Percent of peritoneal dialysis patients:			
Receiving adequate dialysis	N/A	88	91
Managing anemia			
Mean hemoglobin 10 to <12 g/dL	56	65	62
Mean hemoglobin ≥12 g/dL*	31	15	6
Mean hemoglobin <10 g/dL	13	19	32
Percent of all dialysis patients wait-listed for a kidney	17	17	17
Renal transplant rate per 100 dialysis-patient years	4.3	4.0	3.7
Annual mortality rate per 100 patient years*	19.1	18.0	16.9
Total hospital admissions per patient year*	2.0	1.9	1.7
Hospital days per patient year	13.2	12.4	11.2

Note: N/A (not available), g/dL (grams per deciliter [of blood]), AV (arteriovenous). The rate per patient year is calculated by dividing the total number of events by the fraction of the year that patients were followed. Data on dialysis adequacy, anemia management, and fistula utilization represent the share of patients meeting CMS's clinical performance measures. The United States Renal Data System adjusts data by age, gender, race, and primary diagnosis of end-stage renal disease.

*Lower values suggest higher quality.

Source: Compiled by MedPAC from Fistula First, the United States Renal Data System, and 2011 and 2013 institutional outpatient files from CMS.

- Quality of dialysis care is mixed. Performance has improved on some measures, but performance on others remains unchanged.
- All hemodialysis patients require vascular access—the site on the patient's body where blood is removed and returned during dialysis. Between 2009 and 2013, use of arteriovenous fistulas, considered the best type of vascular access, increased from 53 percent to 62 percent of hemodialysis patients. Between 2009 and 2013, overall adjusted mortality rates decreased by nearly 12 percent.
- Between 2011 and 2013, the proportion of hemodialysis patients receiving adequate dialysis remained high. Between 2009 and 2013, overall rates of hospitalization declined.
- Other measures suggest that improvements in dialysis quality are still needed. We looked at access to kidney transplantation because it is widely believed to be the best treatment option for individuals with end-stage renal disease. Between 2009 and 2013, the proportion of dialysis patients accepted on the kidney transplant waiting list remained low, and the renal transplant rate per 100 dialysis-patient years declined.

Chart 5-5. Medicare Advantage quality measures were generally stable between 2013 and 2015

Measures	HMO averages (cost plans included)			Local PPO averages		
	2013	2014	2015	2013	2014	2015
HEDIS[®] administrative measures						
Osteoporosis management ^a	24.8	29.2 ^b	37.9 ^a	19.4	22.7 ^{bc}	39.3 ^a
Rheumatoid arthritis management	75.4	76.1	76.7 ^c	79.3	80.6 ^c	81.1 ^c
HEDIS[®] hybrid measures						
BMI documented	81.7	90.1 ^{bc}	93.3 ^{bc}	77.1	86.5 ^{bc}	90.0 ^{bc}
Colorectal cancer screening	63.1	65.1 ^{bc}	66.9 ^{bc}	59.1	61.8 ^{bc}	63.4 ^c
Controlling blood pressure ^d	63.9	65.8 ^b	71.1 ^d	60.0 ^d	63.9 ^b	69.0 ^d
Eye exam to check for damage from diabetes ^a	67.6	68.8	69.2 ^a	65.5	67.3	69.3 ^a
Kidney function testing for members with diabetes ^a	90.5	91.4 ^{bc}	92.2 ^a	88.5	89.6 ^{bc}	90.3 ^a
Diabetics not controlling blood sugar (lower rate better) ^a	25.4	24.3 ^c	24.2 ^a	28.6	25.1 ^{bc}	24.6 ^a
Measures from HOS^e						
Advising physical activity	50.0	50.3 ^c	51.4 ^{bc}	49.1	48.4 ^c	49.4 ^c
Reducing the risk of falling	61.8	62.3 ^c	62.2 ^c	56.6	56.5 ^c	57.1 ^c
Other measures based on HOS						
Improving or maintaining physical health	66.5	68.8 ^b	68.3	67.1	68.3 ^b	68.3
Improving or maintaining mental health	77.5	79.1 ^{bc}	78.7 ^c	78.0	80.3 ^{bc}	80.1 ^c
Measures from CAHPS[®]						
Annual flu vaccine	70.7	72.3 ^b	71.7 ^c	72.0	73.8	74.1 ^c
Ease of getting needed care and seeing specialists	84.9	83.6 ^{bc}	83.0 ^c	86.1	85.3 ^{bc}	84.9 ^c
Getting appointments and care quickly	75.7	76.0 ^c	75.7 ^c	76.2	77.2 ^{bc}	76.8 ^c
Overall rating of health care quality	85.9	86.0	85.4 ^{bc}	86.3	86.4	86.4 ^c
Overall rating of plan	86.2	85.8	85.0 ^b	85.0	85.1	84.3 ^b
Care coordination	84.8	85.1	84.9 ^c	85.9	85.8	85.7 ^c

Note: HMO (health maintenance organization), PPO (preferred provider organization), HEDIS[®] (Healthcare Effectiveness Data and Information Set, a registered trademark of the National Committee for Quality Assurance (NCQA)), BMI (body mass index), HOS (Health Outcomes Survey), CAHPS[®] (Consumer Assessment of Healthcare Providers and Systems, a registered trademark of the Agency for Healthcare Research and Quality). Data exclude regional PPOs, private fee-for-service plans, and employer-direct plans. Cost-reimbursed HMO plans are included. HEDIS administrative measures are calculated using administrative data; hybrid measures can involve sampling medical records to determine a rate. Averages are for all reporting plans in each year; results may therefore differ from those shown in other MedPAC reporting of scores for plans that report measures for both years in a two-year time period. The 2014 HMO rate for reducing the risk of falling is a correction of the previously reported rate.

^a NCQA advises caution in the evaluation of the rates for certain measures for 2015 due to some data anomalies.

^b Statistically significant difference in performance from previous year ($p < 0.05$).

^c Statistically significant difference in performance between HMO and PPO results ($p < 0.05$).

^d The specifications for this measure changed for the 2015 reporting period such that the result cannot be compared with prior-year results.

^e Results shown for HEDIS measures taken from the HOS (the three measures listed) include scores for plans not reporting other HEDIS data. Results may therefore differ from those shown in other MedPAC reporting of these scores.

Source: MedPAC analysis of CMS HEDIS public use files for HEDIS measures and star ratings data for measures based on HOS and for CAHPS measures.

(Chart continued next page)

Chart 5-5. Medicare Advantage quality measures were generally stable between 2013 and 2015 (continued)

- The chart displays the simple averages across all plans in each category (HMOs and local PPOs) for each year.
- The measures listed are included in the measures that CMS uses to develop plan star ratings, which are the basis of quality bonus payments for plans (see Chart 9-12). For star rating purposes, measures have different weights. Process measures, such as each of the HEDIS administrative measures in the table, have a weight of 1.0. Patient experience measures, including the last four items in the table, have a weight of 1.5. Outcome measures have a weight of 3.0.
- The table includes two HEDIS outcome measures used in the star ratings: controlling blood pressure (for all patients with hypertension) and diabetics not controlling blood glucose. In the last year, specifications for the former measure changed because of new standards for appropriate blood pressure levels varying by age. For the HOS-based outcome measures, there continue to be differences between HMO results and PPO results in the mental health measure, with PPOs showing better performance by a small margin (up to a 1.4 percentage point difference).
- Among HMOs, for measures where there are no data comparability issues, 3 of 13 measures show statistically significant improvement between 2014 and 2015, with the greatest improvement being a 3.2 percentage point improvement in the documentation of enrollees' body mass index (BMI), a measure that also improved among PPOs by 3.5 percentage points. The BMI measure was the only measure showing statistically significant improvement among PPOs. For HMOs, colorectal cancer screening rates rose by 1.8 percentage points, and the HOS measure of advising patients to engage in physical activity rose by 1.1 percentage points (or about 2 percent). All six of the CAHPS patient experience measures showed a decline for HMOs between 2014 and 2015. Four of the CAHPS showed a decline for PPOs. However, the change in each of the CAHPS measures was less than one percentage point.
- In 2015, HMOs performed better than local PPOs on four measures where comparison can be made. HMOs showed better performance on two hybrid measures (BMI documentation and colorectal cancer screening, the reporting of which can be based on a review of a sample of medical records). HMOs also performed better on the two measures collected through the Health Outcomes Survey (advising physical activity and reducing the risk of falling). On the measure of improving or maintaining mental health, the PPO rate was 1.4 percentage points higher than for HMOs. PPOs also performed better on influenza vaccination rates and on four of the five CAHPS patient experience measures, though for three of the five CAHPS measures the difference was 1.1 percentage points or less (getting appointments and care quickly, overall rating of health care quality, and care coordination).

Chart 5-6. Use and spending for selected services detected by measures of low-value care in fee-for-service Medicare, 2013

Measure	Broader version of measures			Narrower version of measures		
	Count per 100 beneficiaries	Share of beneficiaries affected	Spending (millions)	Count per 100 beneficiaries	Share of beneficiaries affected	Spending (millions)
Imaging for nonspecific low back pain	11.9	8.9%	\$236	3.4	3.2%	\$68
PSA screening at age ≥75 years	9.2	6.3	82	5.2	4.3	47
Colon cancer screening for older adults	8.4	8.0	443	0.4	0.4	4
Spinal injection for low-back pain	6.4	3.2	1,261	3.3	1.9	654
Carotid artery disease screening in asymptomatic patients	5.2	4.8	284	4.3	4.0	234
Preoperative chest radiography	4.8	4.3	72	1.2	1.2	18
Stress testing for stable coronary disease	4.5	4.3	1,297	0.5	0.5	148
PTH testing in early CKD	4.4	2.5	84	3.8	2.2	73
T3-level testing for patients with hypothyroidism	3.7	2.2	23	3.7	2.2	23
Head imaging for headache	3.7	3.4	255	2.5	2.3	168
Cervical cancer screening at age >65 years	2.5	2.5	52	2.2	2.2	46
Homocysteine testing in cardiovascular disease	1.6	1.3	13	0.4	0.4	4
Head imaging for syncope	1.2	1.2	83	0.8	0.8	54
Preoperative echocardiography	0.8	0.8	63	0.2	0.2	20
Carotid artery disease screening for syncope	0.7	0.7	36	0.5	0.5	26
Preoperative stress testing	0.6	0.6	187	0.2	0.2	65
CT for rhinosinusitis	0.6	0.5	40	0.2	0.2	18
Dihydroxyvitamin D testing in absence of hypercalcemia or decreased kidney function	0.5	0.5	9	0.5	0.4	8
Imaging for plantar fasciitis	0.5	0.4	9	0.4	0.3	6
BMD testing at frequent intervals	0.5	0.4	10	0.3	0.3	6
Cancer screening for patients with CKD on dialysis	0.4	0.3	9	0.1	0.1	1
PCI/stenting for stable coronary disease	0.3	0.3	1,303	0.1	0.1	217
Arthroscopic surgery for knee osteoarthritis	0.3	0.3	222	0.1	0.1	117
Vertebroplasty	0.2	0.2	369	0.2	0.2	359
Renal artery stenting	0.2	0.2	463	0.03	0.03	76
IVC filter placement	0.2	0.2	38	0.2	0.2	38
Hypercoagulability testing after DVT	0.1	0.1	5	0.1	0.05	2
Preoperative PFT	0.1	0.1	1	0.1	0.1	1
Carotid endarterectomy for asymptomatic patients	0.1	0.1	173	0.03	0.03	74
EEG for headache	0.1	0.1	4	0.04	0.04	2
Pulmonary artery catheterization in ICU	0.01	0.01	0.3	0.01	0.01	0.2
Total	73.7	38.1	7,128	35.0	23.1	2,576

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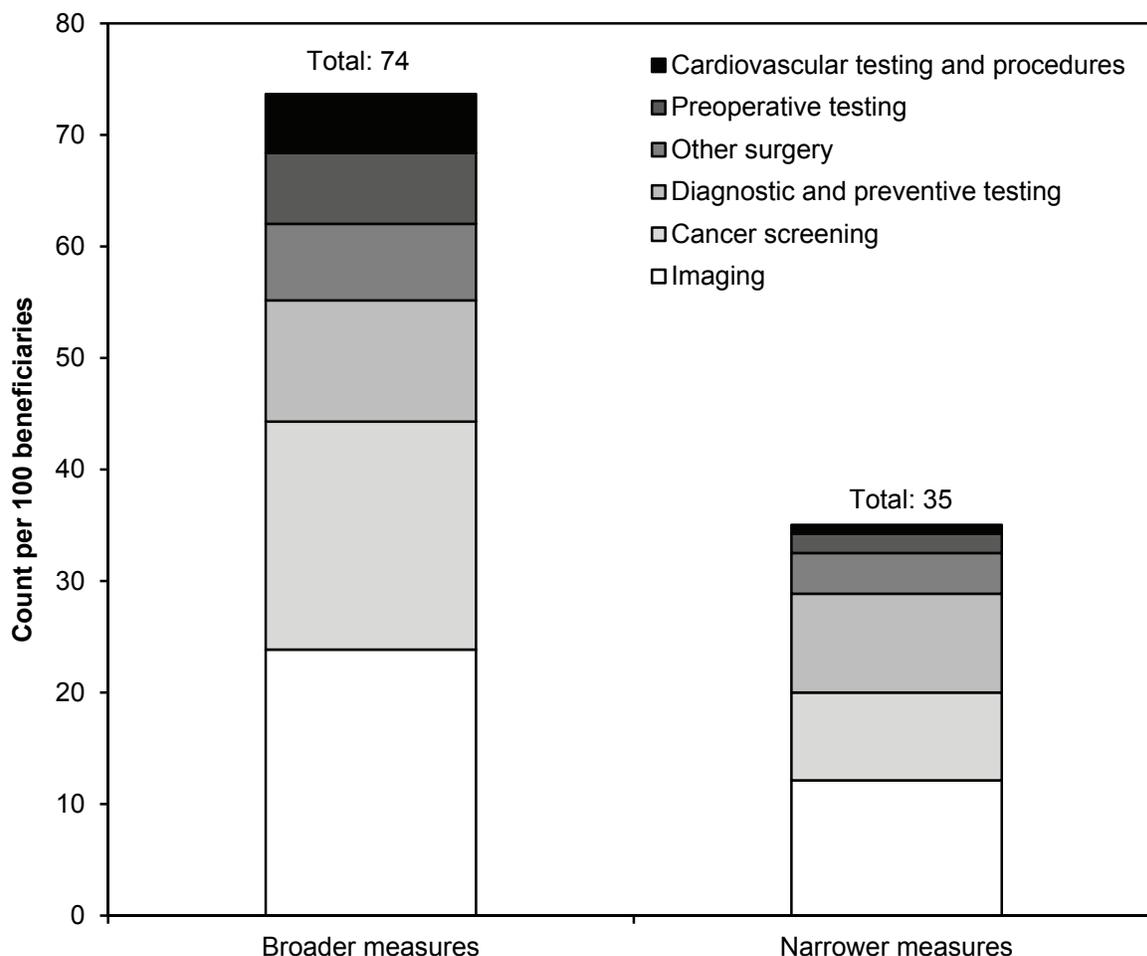
Chart 5-6. Use and spending for selected services detected by measures of low-value care in fee-for-service Medicare, 2013 (continued)

Note: PSA (prostate-specific antigen), PTH (parathyroid hormone), CKD (chronic kidney disease), CT (computed tomography), BMD (bone mineral density), PCI (percutaneous coronary intervention), IVC (inferior vena cava), DVT (deep vein thrombosis), PFT (pulmonary function test), EEG (electroencephalography), ICU (intensive care unit). “Count” refers to the number of unique services. Numbers may not sum to totals due to rounding. The total share of beneficiaries affected does not equal the column sum because some beneficiaries received services covered by multiple measures. To estimate spending, we used standardized prices to adjust for regional differences in payment rates. The standardized price is the median payment amount per service in 2009, adjusted for the increase in payment rates between 2009 and 2012.

Source: MedPAC analysis of 100 percent of Medicare claims using measures developed by Aaron Schwartz and colleagues. (Schwartz, A. L., B. E. Landon, A. G. Elshaug, et al. 2014. Measuring low-value care in Medicare. *JAMA Internal Medicine* 174: 1067–1076; Schwartz, A. L., M. E. Chernew, B.E. Landon, et al. 2015. Changes in low-value services in year 1 of the Medicare Pioneer Accountable Care Organization Program. *JAMA Internal Medicine* 175: 1815–1825.)

- Low-value care is the provision of a service that has little or no clinical benefit, or a service for which the risk of harm outweighs its potential benefit.
- The measures of low-value care in this chart were developed by a team of researchers at Harvard University. The measures are drawn from evidence-based lists—such as Choosing Wisely—and the medical literature. We applied these measures to 100 percent of Medicare claims data from 2013.
- The researchers developed two versions of each measure: a broader one with higher sensitivity (and lower specificity) and a narrower one with lower sensitivity (and higher specificity). Increasing the sensitivity of a measure captures more potentially inappropriate use, but is also more likely to misclassify some appropriate use as inappropriate. Increasing a measure’s specificity leads to less misclassification of appropriate use as inappropriate at the expense of potentially missing some inappropriate use.
- Based on the broader versions of each measure, there were about 74 instances of low-value care per 100 beneficiaries across all the measures, and about 38 percent of beneficiaries received at least one low-value service. Based on the narrower versions of each measure, there were about 35 instances of low-value care per 100 beneficiaries, and about 23 percent of beneficiaries received at least one low-value service.

Chart 5-7. Use of services detected by selected measures of low-value care, by category, 2013

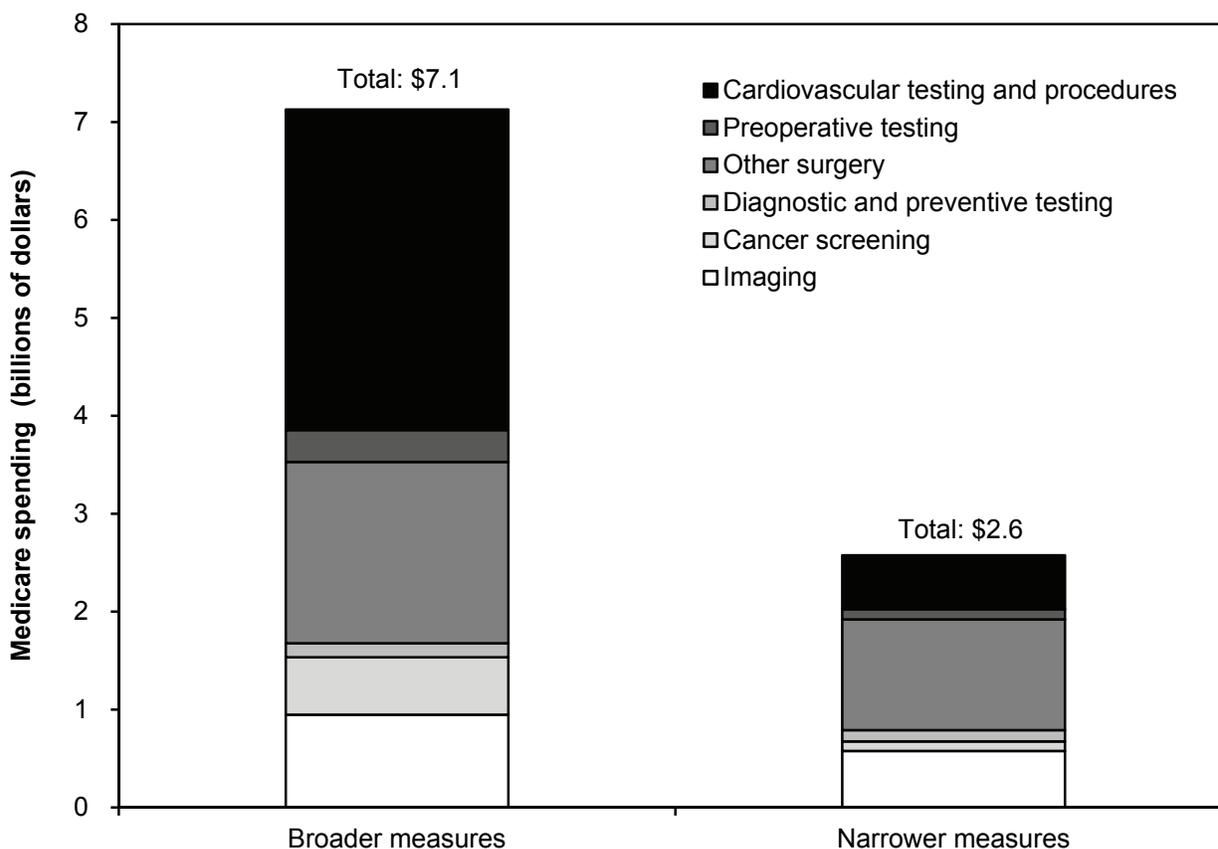


Note: "Count" refers to the number of unique services provided to fee-for-service Medicare beneficiaries.

Source: MedPAC analysis of 100 percent of Medicare claims using measures developed by Aaron Schwartz and colleagues. (Schwartz, A. L., B. E. Landon, A. G. Elshaug, et al. 2014. Measuring low-value care in Medicare. *JAMA Internal Medicine* 174: 1067–1076; Schwartz, A. L., M. E. Chernew, B.E. Landon, et al. 2015. Changes in low-value services in year 1 of the Medicare Pioneer Accountable Care Organization Program. *JAMA Internal Medicine* 175: 1815–1825).

- Following the methodology used in Chart 5-6 (described in the note), we assigned each of the 31 measures of low-value care to 1 of 6 clinical categories.
- Imaging and cancer screening accounted for 60 percent of the instances of low-value care per 100 beneficiaries among the broader versions of the measures. The imaging category includes back imaging for patients with nonspecific low-back pain and screening for carotid artery disease in asymptomatic patients. The cancer screening category includes prostate-specific antigen testing for men age 75 or older and colorectal cancer screening for older patients.
- Among the narrower versions of the measures, imaging and diagnostic and preventive testing accounted for 60 percent of the instances of low-value care per 100 beneficiaries.

Chart 5-8. Spending on services detected by selected measures of low-value care, by category, 2013



Note: Spending includes Medicare Part A and Part B program spending and beneficiary cost sharing for services detected by measures of low-value care. To estimate spending, we used standardized prices to adjust for regional differences in payment rates. The standardized price is the median payment amount per service in 2009, adjusted for the increase in payment rates between 2009 and 2012. This method was developed by Schwartz et al. (2014).

Source: MedPAC analysis of 100 percent of Medicare claims using measures developed by Aaron Schwartz and colleagues. (Schwartz, A. L., B. E. Landon, A. G. Elshaug, et al. 2014. Measuring low-value care in Medicare. *JAMA Internal Medicine* 174: 1067–1076; Schwartz, A. L., M. E. Chernew, B.E. Landon, et al. 2015. Changes in low-value services in year 1 of the Medicare Pioneer Accountable Care Organization Program. *JAMA Internal Medicine* 175: 1815–1825).

- The “cardiovascular testing and procedures” category includes stress testing for stable coronary disease and percutaneous coronary intervention with balloon angioplasty or stent placement for stable coronary disease. The “other surgery” category includes spinal injection for low-back pain and arthroscopic surgery for knee osteoarthritis. The “imaging” category includes back imaging for patients with nonspecific low-back pain and screening for carotid artery disease in asymptomatic patients.
- Cardiovascular testing and procedures and other surgery accounted for 72 percent of total spending on low-value care using the broader measures. Other surgery and imaging comprised two-thirds of spending on low-value care using the narrower measures.
- The spending estimates probably understate actual spending on low-value care because they do not include downstream services (e.g., follow-up tests and procedures) that may result from the initial low-value service.