

SECTION

4

**Quality of care in the
Medicare program**

Chart 4-1. In-hospital and 30-day post-discharge mortality rates improved from 2007 to 2010

Condition or procedure	Risk-adjusted rate per 100 eligible discharges, 2007	Risk-adjusted rate per 100 eligible discharges, 2010	Directional change in rate, 2007–2010
In-hospital mortality			
Acute myocardial infarction	9.31	7.33	Better
Congestive heart failure	4.41	3.54	Better
Stroke	11.72	10.00	Better
Hip fracture	3.23	3.09	No difference
Pneumonia	4.73	3.73	Better
30-day post-discharge mortality			
Acute myocardial infarction	13.29	11.38	Better
Congestive heart failure	10.98	9.56	Better
Stroke	24.90	23.10	Better
Hip fracture	8.59	8.24	No difference
Pneumonia	10.65	9.10	Better

Note: Rates are calculated based on the discharges eligible to be counted in each measure. Rates do not include deaths in non-inpatient prospective payment system hospitals or Medicare Advantage plans. “Better” indicates that the risk-adjusted rate decreased by a statistically significant amount from 2006 to 2009 using a $p \leq 0.01$ criterion. “No difference” indicates that the change in the rate was not statistically significant from 2006 to 2009 using a $p \leq 0.01$ criterion.

Source: MedPAC analysis of CMS Medicare Provider Analysis and Review data using Agency for Healthcare Research and Quality Inpatient Quality Indicators Version 4.1b (with modifications for 30-day mortality rate calculations).

- Our most recent analysis of several inpatient quality indicators shows generally positive trends. We analyzed five of the Inpatient Quality Indicators developed by the Agency for Healthcare Research and Quality (AHRQ) to measure in-hospital and 30-day post-discharge mortality rates. Trends in risk-adjusted in-hospital mortality rates are used to assess changes in the quality of care provided to Medicare beneficiaries during inpatient stays for certain medical conditions. Thirty-day post-discharge mortality rates reflect the quality of care transitions and post-hospital care for beneficiaries in the critical period during and shortly after discharge from an inpatient stay.
- In-hospital and 30-day post-discharge mortality rates declined by a statistically significant amount for four of the five conditions monitored. From 2007 to 2010, both types of mortality rates declined by a statistically significant amount for acute myocardial infarction, congestive heart failure, stroke, and pneumonia as measured by the AHRQ methods. The in-hospital and 30-day mortality rate for patients admitted with hip fracture also declined, but not by a statistically significant amount.

Chart 4-2. Hospital inpatient patient safety indicators improved or were stable from 2007 to 2010

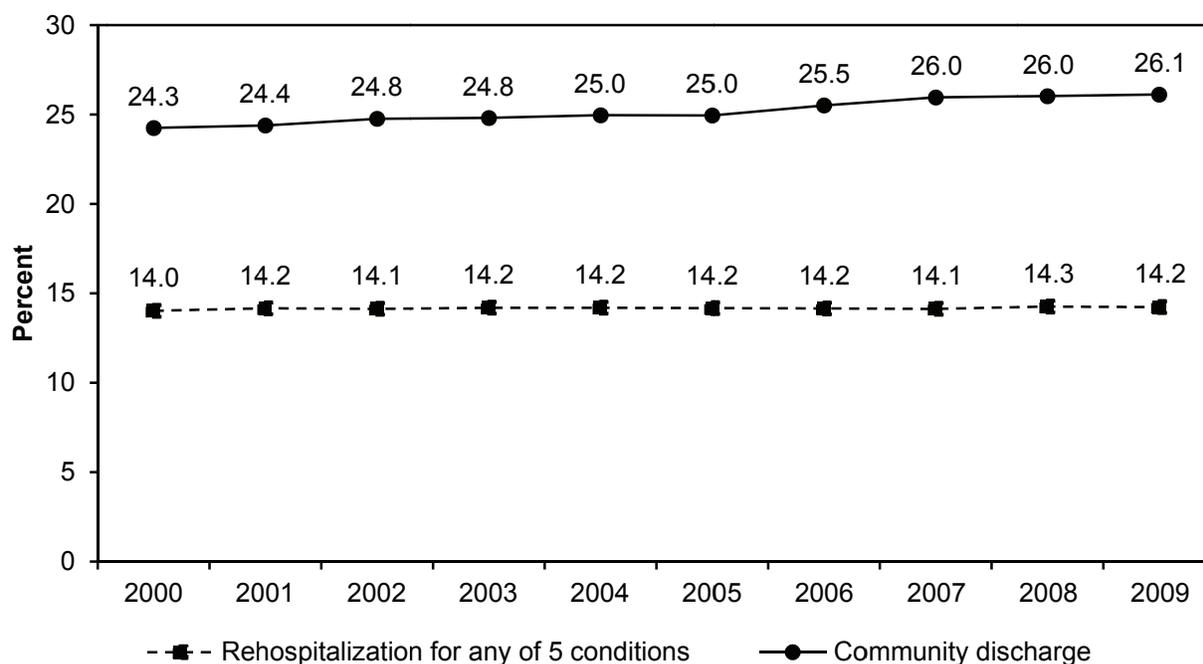
Patient safety indicator	Risk-adjusted rate per 100 eligible discharges, 2007	Risk-adjusted rate per 100 eligible discharges, 2010	Directional change in rate, 2007–2010
Death among surgical inpatients with treatable serious complications	10.16	11.45	Worse
Iatrogenic pneumothorax	0.07	0.02	Better
Postoperative respiratory failure	1.75	0.88	Better
Postoperative PE or DVT	1.01	0.41	Better
Postoperative wound dehiscence	0.27	0.22	Better
Accidental puncture or laceration	0.28	0.14	Better

Note: PE (pulmonary embolism), DVT (deep vein thrombosis). “Better” indicates that the risk-adjusted rate decreased by a statistically significant amount from 2007 to 2010 using a $p \leq 0.01$ criterion.

Source: MedPAC analysis of CMS Medicare Provider Analysis and Review data using Agency for Healthcare Research and Quality (AHRQ) Patient Safety Indicators Version 4.1b.

- We also analyzed six of the AHRQ Patient Safety Indicators (PSIs), which measure the frequency of potentially preventable adverse events that can occur during an inpatient stay, such as the development of postoperative pulmonary embolism or deep vein thrombosis (development of a blood clot that can suddenly obstruct an artery or vein) or a patient’s death from treatable surgical complications. The rates are calculated using software from AHRQ and Medicare inpatient hospital discharge data.
- Rates improved from 2007 to 2010 for five of the six PSIs we analyzed, including iatrogenic pneumothorax (introduction of air into the pleural cavity during a medical procedure, which often causes the lung to collapse), postoperative respiratory failure, postoperative pulmonary embolism or deep-vein thrombosis, postoperative wound dehiscence (parting of the sutures of a surgical wound), and accidental puncture or laceration. The PSI that did not improve from 2007 to 2010 was the rate of deaths among surgical inpatients with treatable serious complications.
- Caution should be used in interpreting all the reported PSI rates. The PSIs measure rates of very rare events, and—even across all inpatient prospective payment system (IPPS) hospitals—it is difficult to detect statistically significant changes in these indicators. The reliability of some of the PSI rates can also be affected by variations in providers’ coding practices. Nonetheless, we monitored sector-level trends in selected PSIs as indicators, though not definitive evidence, of increases and decreases in rates of harm to patients resulting from their medical care that can be avoided if providers adhere to known clinical safety practices.

Chart 4-3. Risk-adjusted SNF quality measures show mixed results since 2000



Note: SNF (skilled nursing facility). Increases in rates of discharge to the community indicate improved quality. The five conditions include congestive heart failure, respiratory infection, urinary tract infection, sepsis, and electrolyte imbalance. Increases in rehospitalization for the five conditions indicate worsening quality. Rates are calculated for all facilities with 25 or more stays.

Source: Rates calculated by MedPAC based on a risk adjustment model developed by the Division of Health Care Policy and Research, University of Colorado at Denver and Health Sciences Center.

- The Commission’s quality measures for skilled nursing facility care continue to show mixed results. Since 2000, risk-adjusted rates of community discharge showed slight improvement, while the rates of rehospitalization of patients with any of five potentially avoidable conditions exhibited almost no change. Both measures showed almost no change between 2008 and 2009.
- The 2009 risk-adjusted rate at which Medicare-covered SNF patients were rehospitalized for potentially avoidable conditions was 14.2 percent, almost the same as in 2000. The 2009 risk-adjusted rate of community discharge was 26 percent, up less than 2 percentage points from 2000.
- Across facilities, the risk-adjusted measures varied considerably (not shown). For example, facilities with the highest rates of rehospitalization of Medicare patients with any of five potentially avoidable conditions (the top 10th percentile) were more than double those of facilities with the lowest rates (the lowest 10th percentile).

Chart 4-4. Home health quality measures show limited change in 2011

Functional measures	2004	2005	2006	2007	2008	2009	2010	2011
Improvements in:								
Transferring	50%	51%	52%	53%	53%	54%	54%	53%
Bathing	59	61	62	63	64	64	65	64
Walking	N/A	55						
Medication management	N/A	46						
Pain management	N/A	66						

Note: N/A (not applicable). The measures for walking, medication management, and pain management changed in 2011, and therefore the 2011 results shown are not comparable to data from prior years.

Source: MedPAC analysis of OASIS, home health standard analytic file, and CMS Home Health Compare data.

- Medicare publishes risk-adjusted home health quality measures that track changes in the functional abilities for patients who receive home health care. These measures are reported for all home health episodes that do not terminate with a hospitalization.
- Since 2004, the rates of functional improvement have generally held steady or slightly improved each year. For example, the rate of patients demonstrating an improvement in their ability to bathe has increased from 59 percent to 64 percent.
- Avoiding hospitalization is an important outcome for many home health patients, and the Commission has developed a measure that tracks the rate of hospitalizations during the episode and up to 30 days after discharge from home health. The most recent data available for this measure are for 2007–2009. Under this measure, the risk-adjusted rate of hospitalization declined slightly from 27 percent in 2007 to 25 percent in 2009 (not shown on chart).

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

Outcome measure	2003	2007	2009	2010
Percent of in-center hemodialysis patients:				
Receiving adequate dialysis	94%	94%	95%	95%
Anemia measures				
Mean hemoglobin 10–12 g/dL	48	49	62	68
Mean hemoglobin \geq 13 g/dL*	15	14	7	5
Mean hemoglobin < 10 g/dL*	6	6	6	7
Dialyzed with an AV fistula	33	47	53	56
Percent of peritoneal dialysis patients:				
Receiving adequate dialysis	N/A	89	89	89
Anemia measures				
Mean hemoglobin 10–12 g/dL	45	48	57	58
Mean hemoglobin \geq 13 g/dL*	21	18	12	11
Mean hemoglobin < 10 g/dL*	7	7	10	11
Percent of prevalent dialysis patients wait-listed for a kidney				
	15	17	17	N/A
Renal transplant rate per 100 dialysis patient years				
	4.8	4.4	4.1	N/A
Annual mortality rate per 100 patient years*				
	21.4	19.2	18.0	N/A
Total admissions per patient year*				
	2.0	1.9	1.8	N/A
Hospital days per patient year				
	13.7	12.9	11.9	N/A

Note: g/dL (grams per deciliter of blood), AV (arteriovenous), N/A (not available). Data on dialysis adequacy, use of fistulas, and anemia management represent percent of patients meeting CMS's clinical performance measures. 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 the Elab Project Report, Fistula First, and the United States Renal Data System.

- The quality of dialysis care has improved for some measures. All hemodialysis patients require vascular access—the site on the patient's body where blood is removed and returned during dialysis. Between 2003 and 2010, use of arteriovenous fistulas, considered the best type of vascular access, increased from 33 percent to 56 percent of hemodialysis patients. Between 2003 and 2010, overall adjusted mortality rates decreased, but remained high among dialysis patients.
- The quality of dialysis care has remained steady for some measures. Between 2003 and 2010, the proportion of hemodialysis patients receiving adequate dialysis remained high. Overall rates of hospitalization remained steady at about two admissions per dialysis patient per year.
- Other measures suggest that improvements in dialysis quality are still needed. We looked at access to kidney transplantation because it is widely believed that it is the best treatment option for individuals with end-stage renal disease. The proportion of dialysis patients accepted on the kidney transplant waiting list remains low. The falloff in the rate of kidney transplantation is partly due to a decrease in live organ donations during this period.

Chart 4-6. Medicare Advantage quality measures show improvement between 2010 and 2011

Measures	HMO averages		Local PPO averages	
	2010	2011	2010	2011
HEDIS[®] administrative measures				
Breast cancer screening	69.1	68.5	66.1 ^b	66.1 ^b
Glaucoma testing	62.1	63.8	64.2	65.5
Monitoring of patients taking long-term medications	89.1	90.2 ^a	89.7	90.7 ^a
At least one primary care doctor visit in the last year	93.7	94.0	95.6 ^b	95.6 ^b
Osteoporosis management	20.7	20.7	18.1 ^b	18.7
Rheumatoid arthritis management	72.3	72.8	76.9 ^b	78.3 ^b
HEDIS[®] hybrid measures				
Colorectal cancer screening ^c	54.7	57.6 ^a	a	41.3 ^c
Cholesterol screening for patients with heart disease	88.4	88.5	a	87.1 ^b
Controlling blood pressure	59.7	61.9 ^a	a	55.8 ^b
Cholesterol screening for patients with diabetes	87.3	87.9	a	86.3 ^b
Eye exam to check for damage from diabetes	63.5	64.6	a	62.7
Kidney function testing for members with diabetes	88.5	89.2 ^a	a	87.3 ^b
Diabetics with cholesterol is under control	49.9	52.2 ^a	a	45.9 ^b
Diabetics not controlling blood sugar (lower rate better)	28.1	25.9	a	34.3 ^b
Measures from HOS^d				
Monitoring physical activity	46.9	47.9 ^a	48.1 ^b	47.6
Improving bladder control	35.4	36.0	37.9 ^b	36.6
Reducing the risk of falling	58.2	60.5 ^a	54.4 ^b	55.1 ^b
Other measures based on HOS				
Improving or maintaining physical health	66.6	66.4	67.3	66.1
Improving or maintaining mental health	76.9	77.5	77.7	78.5 ^b
Measures from CAHPS[®]				
Annual flu vaccine	64.3	67.9 ^a	65.3	68.6 ^a
Pneumonia vaccine	65.1	67.0	67.0	68.5
Ease of getting needed care and seeing specialists	83.8	84.7 ^a	84.8 ^a	85.9 ^b
Getting appointments and care quickly	73.8	75.1 ^a	74.1	76.7 ^{ab}
Overall rating of health care quality	83.9	85.5 ^a	84.6	86.1 ^{ab}
Overall rating of plan	83.3	85.7 ^a	81.8	84.2 ^{ab}

Note: PPO (preferred provider organization), HEDIS[®] (Healthcare Effectiveness Data and Information Set, a registered trademark of the National Committee for Quality Assurance), HOS (Health Outcomes Survey), CAHPS[®] (Consumer Assessment of Healthcare Providers and Systems, a registered trademark of the Agency for Healthcare Research and Quality). MA plan types not included in the data are regional PPOs, private fee-for-service plans, continuing care retirement community plans, and employer-directed plans. Cost-reimbursed HMO plan results are included. HEDIS[®] administrative measures are calculated using administrative data, such as claims, encounter data, pharmacy data, and certain electronic records; hybrid measures involve sampling medical records to determine a rate.

^a Statistically significant difference in performance between 2010 and 2011 on this measure for this plan type ($p < .05$).

^b Statistically significant difference in performance in 2011 between HMO and PPO results ($p < .05$).

^c PPO results not reported for hybrid measures for 2010 because it was the first year in which PPOs were able to use medical record review to report rates for such measures. For the colorectal cancer screening measure, CMS specifically excludes PPO results in determining star thresholds for plans because of the specification of the measure, which includes a nine-year look-back period to confirm whether a person has received a colonoscopy.

^d Results shown for HEDIS[®] measures taken from HOS (the three measures listed) include scores for plans not reporting other HEDIS[®] data in 2010. 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 4-6. Medicare Advantage quality measures show improvement between 2010 and 2011 (continued)

- The chart displays the simple averages across all plans in each category (HMOs and local PPOs) for each year.
- HMOs had statistically significant improvement for 12 of the 25 measures shown in the chart, with no measures declining in the 2-year time period. Proportionately, for the categories shown, the greatest improvement was among the patient experience measures and vaccination measure collected through the CAHPS survey (with five of six improving). Half of the HEDIS hybrid measures showed improvement (four out of eight), as did two of three measures collected through HOS. Only one of the six HEDIS administrative measures in the chart showed improvement between 2010 and 2011.
- For local PPOs, the same HEDIS administrative measure that improved among HMOs also improved for local PPOs (monitoring patients taking long-term medications). Four of six measures collected through the CAHPS survey also had statistically significant improvement among local PPOs between 2010 and 2011. Other measures tracked in both 2010 and 2011 showed no statistically significant change.
- Apart from the HEDIS hybrid measures, 9 of 17 measures showed statistically significant differences between HMO averages and local PPO averages, with local PPOs better on six measures and HMOs better on three measures. As of 2010, PPOs began reporting results for hybrid measures using medical record reviews, which PPO plans were not allowed to do prior to 2010. For the hybrid measures, local PPOs are reporting poorer results than HMOs, but this may be because the medical record–based reporting is relatively new for PPOs and also because of the possible difficulty of obtaining medical record information from non-network providers.
- In 2011, CMS began making bonus payments to plans based on their star ratings, giving plans an incentive to improve their performance on quality measures. The measures shown in the above chart include all the measures collected through HEDIS, CAHPS and the HOS that are included in determining a plan's star ratings, except for two measures (recording of body mass index, a hybrid measure that was new as of 2010, and a measure of hospital readmissions, which was introduced in 2011).

Web links. Quality of care in the Medicare program

- Chapters 3, 4, and 6 through 9 of MedPAC's March 2012 Report to the Congress include information on the quality of care provided by inpatient hospitals, physicians and other ambulatory care providers, outpatient dialysis facilities, skilled nursing facilities, home health agencies, and inpatient rehabilitation facilities.

http://www.medpac.gov/chapters/Mar12_Ch03.pdf
http://medpac.gov/chapters/Mar12_Ch04_CORRECTED.pdf
http://www.medpac.gov/chapters/Mar12_Ch06.pdf
http://www.medpac.gov/chapters/Mar12_Ch07.pdf
http://www.medpac.gov/chapters/Mar12_Ch08.pdf
http://www.medpac.gov/chapters/Mar12_Ch09.pdf

- Chapter 12 of the MedPAC March 2012 Report to the Congress includes information on the quality of care in Medicare Advantage plans.

http://www.medpac.gov/chapters/Mar12_Ch12.pdf

- Chapter 13 of the MedPAC March 2012 Report to the Congress includes information on performance metrics for Medicare Part D plans (prescription drug plans and Medicare Advantage–Prescription Drug plans).

http://www.medpac.gov/chapters/Mar12_Ch13.pdf

- Chapter 6 of the MedPAC March 2010 Report to the Congress includes a set of recommendations on comparing the quality of care between Medicare fee-for-service and Medicare Advantage and among Medicare Advantage plans.

http://www.medpac.gov/chapters/Mar10_Ch06.pdf

- Chapter 4 of the MedPAC June 2007 Report to the Congress discusses policy options to improve the quality of home health services, and Chapter 8 of the same report provides information on the quality of care provided by skilled nursing facilities.

http://www.medpac.gov/chapters/Jun07_Ch04.pdf
http://www.medpac.gov/chapters/Jun07_Ch08.pdf

- Chapter 4 of the MedPAC March 2005 Report to the Congress outlines strategies to improve care through pay-for-performance incentives and information technology.

http://www.medpac.gov/publications/congressional_reports/Mar05_Ch04.pdf

- The CMS website provides information on several of the Medicare quality and value-based purchasing initiatives.

<http://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/QualityInitiativesGenInfo/index.html?redirect=/QualityInitiativesGenInfo/>

- Medicare provides public comparative information on selected quality measures for hospital, nursing facility, home health agency, and dialysis facilities on its consumer website.

Hospital Compare: <http://www.hospitalcompare.hhs.gov/hospital-search.aspx>

Nursing Home Compare: <http://www.medicare.gov/NHCompare/Home.asp>

Home Health Compare: <http://www.medicare.gov/HomeHealthCompare/search.aspx>

Dialysis Facility Compare: <http://www.medicare.gov/Dialysis/Home.asp>

- CMS makes available downloadable databases of the quality measures and other information underlying the four provider comparison databases cited above.

<http://www.medicare.gov/Download/DownloadDB.asp>

- Medicare Advantage plan quality measures are available through a Medicare consumer website (the Medicare Plan Finder) that makes plan-to-plan comparisons within a specified geographic area, including comparisons with Medicare fee-for-service results on certain measures.

<https://www.medicare.gov/find-a-plan/questions/home.aspx>

- CMS makes available a downloadable database of the Medicare Advantage plan quality measures underlying the Medicare Plan Finder and the star ratings of plans.

<http://www.medicare.gov/Download/DownloadDB.asp> (select “Plan Ratings Data” from the drop-down menu)

- Current and past editions of the National Committee for Quality Assurance (NCQA) publication *The State of Health Care Quality* are available from the NCQA website.

<http://www.ncqa.org/tabid/836/Default.aspx>

