SECTION 4

Quality of care in the Medicare program

Chart 4-1. Most hospital inpatient and 30-day mortality rates improved from 2005 to 2008

Condition or procedure	Risk-adjusted rate per 100 eligible discharges, 2005	Risk-adjusted rate per 100 eligible discharges, 2008	Directional change in rate, 2005–2008
In-hospital mortality			
Acute myocardial infarction	9.51	7.36	Better
Congestive heart failure	4.21	3.10	Better
Stroke	11.42	9.14	Better
Hip fracture	3.22	2.31	Better
Pneumonia	5.17	3.93	Better
Esophageal resection	8.21	3.73	No difference
Pancreatic resection	6.36	5.15	No difference
Abdominal aortic aneurysm repair	7.45	6.07	Better
30-day postdischarge mortality			
Acute myocardial infarction	15.37	12.83	Better
Congestive heart failure	9.95	8.26	Better
Stroke	22.96	19.98	Better
Hip fracture	8.71	6.81	Better
Pneumonia	10.97	8.86	Better
Esophageal resection	10.13	7.42	No difference
Pancreatic resection	8.49	6.73	No difference
Abdominal aortic aneurysm repair	8.93	8.22	No difference

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 2005 to 2008 using a $p \leq 0.01$ criterion. "No difference" indicates that the change in the rate was not statistically significant from 2005 to 2008 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 3.2.

- From 2005 to 2008, risk-adjusted in-hospital and 30-day postdischarge mortality rates improved by a statistically significant amount for each of the five conditions we measured: acute myocardial infarction, congestive heart failure, stroke, hip fracture, and pneumonia.
- For the three inpatient surgical procedures for which we measured mortality rates—esophageal resection, pancreatic resection, and repair of abdominal aortic aneurysm (AAA)—in-hospital and 30-day mortality rates declined from 2005 to 2008, but in only one instance (in-hospital mortality rate for AAA repair) was the decrease statistically significant.

Chart 4-2. Trends in hospital patient safety indicators are mixed from 2005 to 2008

Patient safety indicator	Risk-adjusted rate per 100 eligible discharges, 2005	Risk-adjusted rate per 100 eligible discharges, 2008	Directional change in rate, 2005–2008
Postoperative PE or DVT	0.80	0.95	Worse
Accidental puncture or laceration	0.38	0.41	No difference
Postoperative respiratory failure	1.12	1.29	Worse
Iatrogenic pneumothorax	0.05	0.05	No difference
Death among surgical inpatients with treatable serious complications	13.15	10.75	Better
Postoperative wound dehiscence	0.24	0.29	No difference

Note: PE (pulmonary embolism), DVT (deep vein thrombosis). "Better" indicates that the risk-adjusted rate decreased by a statistically significant amount from 2005 to 2008 using a $p \leq 0.01$ criterion. "Worse" indicates that the risk-adjusted rate increased by a statistically significant amount from 2005 to 2008 using a $p \leq 0.01$ criterion. "No difference" indicates that the change in the rate from 2005 to 2008 was not statistically significant 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 Patient Safety Indicators Version 3.2.

- The rates of these patient safety indicators, calculated using methods developed by the Agency for Healthcare Research and Quality, report on injuries to patients or complications from clinical procedures that often can be avoided with appropriate medical care.
- From 2005 to 2008, the rate improved for one of the six patient safety indicators we analyzed and worsened for two others, with another three indicators showing no statistically significant changes over the period.
- The most common patient safety event we measured using Medicare inpatient hospital discharge data between 2005 and 2008 was the occurrence of postoperative pulmonary embolism and deep vein thrombosis—rare but life-threatening complications of surgery—for which the risk-adjusted rate worsened slightly. The second most common event was accidental puncture or laceration during an inpatient stay, for which the rate did not change significantly over the period.

Chart 4-3. Most ambulatory care quality indicators improved or were stable from 2006 to 2008

	Number of indicators			
Indicators	Improved	Stable	Worsened	Total
All	19	14	5	38
Anemia	3	1	0	4
CAD	3	1	0	4
Cancer	0	3	4	7
CHF	7	1	0	8
COPD	1	0	1	2
Depression	0	1	0	1
Diabetes	4	3	0	7
Hypertension	0	1	0	1
Stroke	1	3	0	4

Note: CAD (coronary artery disease), CHF (congestive heart failure), COPD (chronic obstructive pulmonary disease).

Source: MedPAC analysis of Medicare Ambulatory Care Indicators for the Elderly from the Medicare 5 percent Standard Analytic Files.

- The Medicare Ambulatory Care Indicators for the Elderly track the provision of necessary care and rates of potentially avoidable hospitalizations for beneficiaries age 65 and older with selected medical conditions.
- Of 38 indicators, 19 improved and 14 did not change statistically. This finding suggests that beneficiaries diagnosed with the conditions for which these 33 indicators track the quality of care were more likely or as likely in 2008 as in 2006 to receive necessary medical care and avoid hospitalizations.
- Five of the 38 quality indicators showed statistically significant declines. The decreases occurred in rates for certain breast cancer imaging services and the rate of colonoscopy for beneficiaries with a diagnosis of iron deficiency anemia, and there was a small increase in the rate of potentially preventable hospitalizations of beneficiaries diagnosed with COPD.
- For several conditions, declines in potentially avoidable hospitalizations occurred concurrently with the provision of necessary clinical care for that condition. For example, in 2008, beneficiaries diagnosed with diabetes were hospitalized at lower rates concurrent with higher rates of lipid and hemoglobin A1c testing and follow-up physician visits.

Chart 4-4. Share of home health patients with positive outcomes continues to increase, but more slowly

	2004	2005	2006	2007	2008	2009
Functional/pain measures (higher is better)						
Improvements in:						
Walking	36%	37%	39%	41%	44%	45%
Getting out of bed	50	51	52	53	53	54
Bathing	59	61	62	63	64	64
Managing oral medications	37	39	40	41	43	43
Patients have less pain	59	61	62	63	64	64
Adverse event measures (lower is better)						
Any hospital admission	28	28	28	28	29	29

Source: MedPAC analysis of CMS Home Health Compare data.

- Medicare publishes risk-adjusted home health quality measures that track changes in the functional abilities and rates of adverse events for patients who receive home health.
- Since 2003, the trend in these measures has been steady. Functional measures, such as walking and bathing, have shown small but steady improvement. (For these measures, increasing values indicate improvement.)
- The adverse event rates, including hospitalizations and room use, have mostly remained unchanged over this period.

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

Outcome measure	2002	2004	2006	2007
Percent of in-center hemodialysis patients:				
Receiving adequate dialysis	92%	95%	93%	N/A
With anemia under control	78	80	82	N/A
Dialyzed with an AV fistula	33	39	45	N/A
Percent of peritoneal dialysis patients:				
Receiving adequate CAPD	71	73	75	N/A
Receiving adequate CCPD	66	59	64	N/A
With anemia under control	81	82	85	N/A
Percent of prevalent dialysis patients wait-listed for a kidney	14	15	16	17
Renal transplant rate per 100 dialysis patient years	4.9	4.8	4.8	4.4
Annual mortality rate per 100 patient years	21.7	21.0	20.1	19.3
Total admissions per patient year	2.0	2.0	2.0	1.9
Hospital days per patient year	14.4	14.5	13.7	12.9

Note: AV (arteriovenous), CAPD (continuous ambulatory peritoneal dialysis), CCPD (continuous cycler-assisted peritoneal dialysis), 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 (USRDS) adjusts data by age, gender, race, and primary diagnosis of end-stage renal disease (ESRD).

Source: Compiled by MedPAC from 2003–2007 Annual Reports for ESRD Clinical Performance Measures Project from CMS and USRDS 2009.

- 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 2002 and 2006, use of arteriovenous fistulas, considered the best type of vascular access, increased from 33 percent to 45 percent of hemodialysis patients. Between 2002 and 2007, overall adjusted mortality rates decreased but remained high among dialysis patients.

- The quality of dialysis care has remained steady for some measures. Between 2002 and 2006, the proportion of hemodialysis patients receiving adequate dialysis and whose anemia was under control 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 ESRD. The proportion of dialysis patients accepted on the kidney transplant waiting list has remained low. Between 2002 and 2006, the rate of kidney transplantation remained unchanged, while between 2006 and 2007, the rate decreased.

Chart 4-6. Medicare Advantage HMO quality measures are mixed from 2004 to 2008, with little change recently

Measure	2004	2005	2006	2007	2008
Measures for which higher scores are better					
Persistence of beta-blocker treatment after heart attack	61.3	65.4	69.6	75.5*	79.7*
Colorectal cancer screening	52.6	53.9	53.3	50.4*	53.1*
Glaucoma screening for older adults	62.3	61.6	62.2	59.6	59.8
Osteoporosis management in women with fracture	19.0	20.1	21.8	20.4	20.7
Comprehensive diabetes care					
Eye exams	67.1	66.5	62.3	62.7	60.8
HbA1c testing	89.1	88.9	87.2	88.1	88.3
Lipid control (<100 mg/deciliter)	47.5	50.0	46.9	46.8	48.7
Antidepressant medication management**					
Acute phase	56.3	54.9	58.2	61.2*	62.5
Continuation phase	42.1	41.0	45.1	48.7*	49.3
Contacts	11.9	11.8	11.4	10.7	***
Follow-up after hospitalization for mental illness					
Less than 7 days	40.2	39.1	36.5	37.0	38.1
Less than 30 days	60.7	59.3	55.8	54.4	56.5
Measures for which lower scores are better					
Comprehensive diabetes care					
Poor HbA1c control	22.5	23.6	27.3	29.0	29.4
Use of high-risk medications in the elderly					
One high-risk medication	N/R	23.9	23.1	23.2	23.4
Two high-risk medications	N/R	6.6	5.9	6.0	6.0

Note: HbA1c (hemoglobin A1c), N/R (not reported because measure was not yet in use). Data show the simple average reported rate across all plans. Rates are percent of enrollees receiving the appropriate screening, for example, or percent with a given condition or risk factor receiving indicated care (e.g., diabetics who received an eye exam). Data are for HMOs only and do not include results for preferred provider organizations or private fee-for-service plans. Because measure definitions change over time, the table includes only selected measures for which there are several years of consistent measurement over time.

*Statistically significant change in the rate from the preceding year.

**Acute phase refers to the percent of patients receiving effective treatment after a new episode; continuation is remaining on antidepressant continuously for six months after initial diagnosis; contacts show the rate of receiving at least 3 follow-up office visits in a 12-week acute phase. The continuation phase figure for 2006 is taken from the 2007 National Committee for Quality Assurance (NCQA) report and is higher than the rate shown in earlier data books.

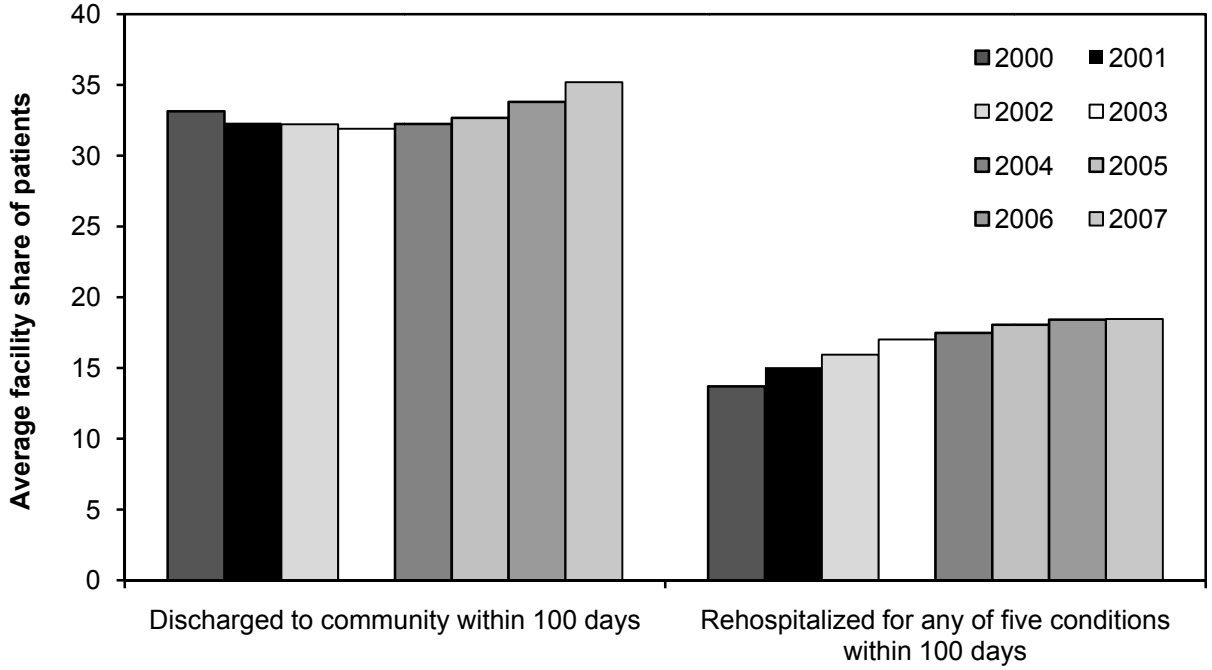
***NCQA did not report results for this measure for 2008.

Source: National Committee for Quality Assurance. 2005, 2006, 2007 and 2008. *The State of Health Care Quality*. Washington, DC: NCQA. Additional information provided by NCQA.

- The National Committee for Quality Assurance, in its 2009 report, noted that "with a few key exceptions quality measures … were flat" in each sector examined and "the flat performance by plans serving Medicare … beneficiaries represents the third consecutive year of stagnation" for the program and the people it serves.

- Because many Medicare beneficiaries in many Medicare Advantage plans are still not receiving clinically indicated services, opportunities for further improvement exist.

Chart 4-7. SNF quality results are mixed from 2000 to 2007



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

Source: Analysis of DataPro data conducted by University of Colorado Health Sciences Center for MedPAC.

- Changes in the risk-adjusted measures of quality show mixed results, with one indicator showing improved results and the other showing poorer quality.

- In 2007, the rate of community discharge within 100 days was the highest it had been since 2000 (35.2 percent), indicating improved performance. After declining between 2000 and 2003, the rate slowly increased through 2007.

- The risk-adjusted rates of potentially avoidable rehospitalization within 100 days for 5 conditions have increased throughout the period, indicating worse quality, though the increase between 2006 and 2007 was the smallest since 2000. In 2007, the mean risk-adjusted facility rehospitalization rate for the five conditions was 18.5 percent.

- Risk-adjusted quality measures differed by facility type. Hospital-based facilities had higher community discharge rates and lower potentially avoidable rehospitalization rates than freestanding facilities—indicating higher quality—after controlling for differences in case mix, ownership, and location.

- Risk-adjusted quality measures showed mixed results by ownership. For-profit facilities had slightly higher community discharge rates—indicating higher quality—but also had higher potentially avoidable rehospitalization rates—indicating poorer quality—compared with nonprofit skilled nursing facilities after risk adjustment.

Web links. Quality of care in the Medicare program

- Chapters 2 and 3 of the MedPAC March 2010 Report to the Congress include further information on the quality of care in inpatient hospitals, ambulatory care settings, dialysis facilities, skilled nursing facilities, home health agencies, and inpatient rehabilitation facilities.

  http://www.medpac.gov/chapters/Mar10_Ch02A.pdf
  http://www.medpac.gov/chapters/Mar10_Ch02B.pdf
  http://www.medpac.gov/chapters/Mar10_Ch02D.pdf
  http://www.medpac.gov/chapters/Mar10_Ch03A.pdf
  http://www.medpac.gov/chapters/Mar10_Ch03B.pdf
  http://www.medpac.gov/chapters/Mar10_Ch03C.pdf

- Chapter 4 of the MedPAC March 2010 Report to the Congress includes further information on the quality of care in Medicare Advantage plans.

  http://www.medpac.gov/chapters/Mar10_Ch04.pdf

- Chapter 5 of the MedPAC March 2010 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/Mar10_Ch05.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 8 of the MedPAC June 2009 Report to the Congress discusses care coordination for Medicare beneficiaries and its implications for quality of care and discusses certain care coordination demonstration and pilot programs for Medicare beneficiaries with chronic illnesses, including their impacts on quality of care.

  http://www.medpac.gov/chapters/Jun09_Ch08.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 2 of the MedPAC June 2006 Report to the Congress discusses care coordination for Medicare beneficiaries and its implications for quality of care.

  http://www.medpac.gov/publications/congressional_reports/Jun06_Ch02.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 all Medicare quality and value-based purchasing initiatives.

  http://www.cms.gov/QualityInitiativesGenInfo/

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

  http://www.medicare.gov/Hospital/home.asp
  http://www.medicare.gov/NHCompare/Home.asp
  http://www.medicare.gov/HHCompare/Home.asp
  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 Personal Plan Finder) that makes plan-to-plan comparisons within a specified geographic area.

  http://www.medicare.gov/MPPF/home.asp

- CMS makes available a downloadable data base of the Medicare Advantage plan quality measures underlying the Medicare Personal Plan Finder.

  http://www.medicare.gov/Download/DownloadDB.asp (select “Plans—Quality Data” from the drop-down menu)

- The current and past editions of the National Committee for Quality Assurance (NCQA) publication cited in Chart 4-6, *The State of Health Care Quality*, are available from the NCQA website.

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

- The Commonwealth Fund published a chart book in May 2005 with information on the quality of care for Medicare beneficiaries.

  http://www.commonwealthfund.org/Content/Publications/Chartbooks/2005/May/Quality-of-Health-Care-for-Medicare-Beneficiaries--A-Chartbook.aspx