

SECTION

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**Quality of care in the  
Medicare program**

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## Chart 4-1. Hospital mortality decreased, 2004–2006

Diagnosis or procedure	Risk-adjusted rates per 10,000 eligible discharges			Percent change 2004–2006	Number of IPPS deaths in 2006
	2004	2005	2006		
<b>In-hospital mortality</b>					
Pneumonia	789	689	618	–22%	45,593
Stroke	1,019	951	864	–15	29,720
AMI	1,110	1,017	968	–13	27,232
CHF	358	308	228	–36	27,659
GI hemorrhage	264	226	160	–39	8,563
CABG	355	300	246	–31	5,665
Craniotomy	814	737	670	–18	3,056
AAA repair	956	802	735	–23	1,539
<b>30-day mortality</b>					
Pneumonia	1,452	1,339	1,283	–12	90,790
Stroke	1,767	1,702	1,631	–8	52,189
AMI	1,570	1,489	1,444	–8	40,037
CHF	834	806	717	–14	63,940
GI hemorrhage	587	544	473	–19	18,076
CABG	366	312	269	–27	5,698
Craniotomy	1,094	1,007	986	–12	4,260
AAA repair	912	862	814	–11	1,630

Note: IPPS (inpatient prospective payment system), AMI (acute myocardial infarction), CHF (congestive heart failure), GI (gastrointestinal), CABG (coronary artery bypass graft), AAA (abdominal aortic aneurysm). Rate is for discharges eligible to be counted in the measure. IPPS deaths are those occurring in hospitals reimbursed under the inpatient prospective payment system (does not include deaths in non-IPPS hospitals or Medicare Advantage plans).

Source: MedPAC analysis of MedPAR discharges using Agency for Healthcare Research and Quality indicators and methods.

- Risk-adjusted in-hospital mortality rates decreased between 2004 and 2006 for all diagnoses and procedures measured. The most substantial improvements occurred for gastrointestinal hemorrhage, congestive heart failure, coronary artery bypass graft, and abdominal aortic aneurysm repair.
- Risk-adjusted 30-day mortality rates (as measured from admission date) also decreased, though not in most cases by as much as in-hospital mortality rates. The most substantial improvements occurred for coronary artery bypass graft, gastrointestinal hemorrhage, and congestive heart failure.

**Chart 4-2. Safety of care: Adverse events affect many hospitalized beneficiaries, 2004–2006**

	Risk-adjusted rates per 10,000			Difference 2004–2006	Observed adverse events, 2006
	2004	2005	2006		
Decubitus ulcer	276	282	291	16	156,781
Failure to rescue	1,114	1,058	984	–131	59,965
Postoperative PE or DVT	98	100	113	15	46,220
Accidental puncture/ laceration	34	35	36	2	38,576
Selected infections due to medical care	25	15	13	–11	16,817
Postoperative respiratory failure	53	59	63	10	12,221
Iatrogenic pneumothorax	8	8	7	–0.3	10,350
Postoperative hemorrhage or hematoma	17	17	18	2	7,183
Postoperative sepsis	131	121	133	2	6,643
Postoperative physiologic and metabolic derangement	8	8	6	–2	2,494
Postoperative wound dehiscence	12	15	15	3	1,904
Postoperative hip fracture	3	3	2	–1	887

Note: PE (pulmonary embolism), DVT (deep vein thrombosis). Rate is for discharges eligible to be counted in the measure. The difference in rates between 2004 and 2006 may be affected by rounding.

Source: MedPAC analysis of 100 percent of MedPAR discharges using Agency for Healthcare Research and Quality indicators and methods.

- From 2004 to 2006, 7 of 12 rates of adverse events experienced by Medicare beneficiaries increased, indicating a decline in the safety of hospital care.
- Five of the indicators have seen decreasing rates, indicating increases in safety; these improvements include failure to rescue, one of the most common and—because it results in death—most severe.

### Chart 4-3. Most ambulatory care indicators show improvement or stability, 2004–2006

Indicators	Number of indicators			Total
	Improved	Stable	Worsened	
All	21	11	6	38
Anemia and GI bleed	2	2	0	4
CAD	2	2	0	4
Cancer	3	1	3	7
CHF	5	2	1	8
COPD	0	1	1	2
Depression	0	1	0	1
Diabetes	5	1	1	7
Hypertension	1	0	0	1
Stroke	3	1	0	4

Note: GI (gastrointestinal), 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 (MACIEs) track the provision of necessary care and rates of potentially avoidable hospitalizations for beneficiaries with selected medical conditions.
- Out of 38 indicators, 21 improved and 11 did not change statistically. This finding suggests that, for the most part, beneficiaries with these conditions were more likely in 2006 than 2004 to receive necessary care and avoid hospitalizations.
- Six of the 38 quality indicators showed a decline. These occurred in breast cancer imaging, iron deficiency anemia, diabetes, COPD, and heart failure.
- For several conditions, declines in potentially avoidable hospitalizations occur concurrently with the provision of necessary clinical care for that condition. For example, in 2006, smaller shares of beneficiaries with diabetes were hospitalized, concurrent with more beneficiaries having lipid and hemoglobin testing.

## Chart 4-4. Share of home health patients achieving positive outcomes continues to increase

	2003	2004	2005	2006	2007
<b>Functional/pain measures (higher is better)</b>					
Improvements in:					
Walking	34%	36%	38%	40%	42%
Getting out of bed	49	51	52	52	53
Bathing	57	60	61	63	64
Managing oral medications	35	38	39	41	42
Patients have less pain	57	59	61	62	63
<b>Adverse event measures (lower is better)</b>					
Any hospital admission	28	28	28	28	29
Any unplanned emergency room use	21	21	21	21	21

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 unplanned emergency room use, have mostly remained unchanged over this period. However, in the last year the rate of hospitalizations increased by 1 percentage point.

**Chart 4-5. The quality of dialysis care has improved for some measures**

Outcome measure	2002	2003	2004	2005
Percent of in-center hemodialysis patients:				
Receiving adequate dialysis	92%	94%	95%	94%
With anemia under control	78	81	80	80
Dialyzed with an AV fistula	33	35	39	44
With low serum albumin (greater risk of being malnourished)	19	19	18	20
Percent of peritoneal dialysis patients:				
Receiving adequate CAPD	71	70	73	73
Receiving adequate CCPD	66	65	59	59
With anemia under control	81	83	82	83
With low serum albumin (greater risk of being malnourished)	40	37	38	38
Annual mortality rate per 1,000 patient years	211	208	204	200
First-year mortality rate per 1,000 patient years	238	235	232	N/A
Total admissions per patient year	2.04	2.04	2.05	2.01
Hospital days per patient per year	14.6	14.5	14.7	14.3

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 2002–2005 Annual Reports for ESRD Clinical Performance Measures Project from CMS and USRDS 2007.

- The quality of dialysis care has improved for some measures. Between 2002 and 2005, the proportion of hemodialysis patients receiving adequate dialysis and whose anemia was under control increased.
- Nutritional care is a clinical area in which substantial improvements in quality are needed. The proportion of hemodialysis and peritoneal dialysis patients who are malnourished has remained relatively constant during this time.
- All hemodialysis patients require vascular access—the site on the patient's body where blood is removed and returned during dialysis. Vascular access care is another clinical area in which substantial improvements in quality are needed. Use of arteriovenous (AV) fistulas, considered the best type of vascular access, increased from 33 percent to 44 percent of hemodialysis patients between 2002 and 2005. Clinical guidelines recommend that at least 40 percent of all hemodialysis patients have an AV fistula.

**Chart 4-6. Changes in patient safety indicators for long-term care hospitals, 2004–2006**

Patient safety indicator	Risk-adjusted rates per 1,000 eligible discharges			Change in rate, 2005–2006	Observed adverse events 2006	Total number of patients 2006
	2004	2005	2006			
Decubitus ulcer	98.49	137.56	152.30	10.7%	16,593	103,975
Infection due to medical care	21.41	24.98	25.57	2.4	2,444	91,934
Postoperative PE or DVT	35.61	38.89	34.79	–10.5	560	15,940
Postoperative sepsis	81.68	74.18	75.58	1.9	286	3,158

Note: PE (pulmonary embolism), DVT (deep vein thrombosis). To control for patient condition on admission to the long-term care hospital, eligible discharges include only those with a previous acute hospital stay. Due to a change in methodology, this chart cannot be compared with its counterparts in previous MedPAC data books.

Source: MedPAC analysis of MedPAR data from CMS.

- These rates suggest that safety for long-term care hospital (LTCH) patients has deteriorated. The rates for three of four patient safety indicators (PSIs) increased from 2005 to 2006, although the rate for one PSI, postoperative pulmonary embolism or deep vein thrombosis, declined.
- We used selected PSIs developed by the Agency for Healthcare Research and Quality to assess potentially avoidable adverse events resulting in acute hospital care for patients treated in LTCHs in 2004, 2005, and 2006. These PSIs had enough observations for the three years and were thought to be relevant to the type of care LTCHs deliver.
- To distinguish patients who developed a PSI diagnosis in the LTCH, we included in the analysis only patients who did not have the pertinent diagnosis in the acute care hospital. Therefore, changes in these rates should not be a result of LTCHs admitting more patients who had these conditions in the acute care hospital. The PSIs are risk adjusted so these indicators should not reflect a changing LTCH patient population over time.



## Chart 4-7. Medicare Advantage plan quality measures for 2002–2006 do not show improvement in the most recent time period

Measure	2002	2003	2004	2005	2006
<b>Measures for which higher scores are better</b>					
Beta-blocker treatment after heart attack <sup>a</sup>	— <sup>a</sup>	92.9	94.0	93.8	93.7
Persistence of beta-blocker treatment after heart attack	N/R	N/R	61.3	65.4	69.6
Colorectal cancer screening	N/R	49.5	52.6	53.9	53.3
Glaucoma screening for older adults	N/R	N/R	62.3	61.6	62.2
Osteoporosis management in women with fracture	N/R	18.0	19.0	20.1	21.8
Comprehensive diabetes care					
Eye exams <sup>a</sup>	— <sup>a</sup>	64.9	67.1	66.5	62.3
HbA1c testing	85.0	87.9	89.1	88.9	87.2
Lipid control (<100 mg/DL)	N/R	41.9	47.5	50.0	46.9
Antidepressant medication management <sup>b</sup>					
Acute phase	52.1	53.3	56.3	54.9	58.2
Continuation phase	37.7	39.2	42.1	41.0	41.0
Contacts	10.8	10.5	11.9	11.8	11.4
Follow-up after hospitalization for mental illness					
Less than 7 days	38.7	38.8	40.2	39.1	36.5
Less than 30 days	60.6	60.3	60.7	59.3	55.8
<b>Measures for which lower scores are better</b>					
Comprehensive diabetes care					
Poor HbA1c control	24.5	23.4	22.5	23.6	27.3
Use of high-risk medications in the elderly					
One high-risk medication	N/R	N/R	N/R	23.9	23.1
Two high-risk medications	N/R	N/R	N/R	6.6	5.9

Note: N/R (not reported because measure was not yet in use), HbA1c (hemoglobin A1c). Rates shown are percent of enrollees receiving the appropriate screening, for example, or percent of enrollees with a given condition or risk factor receiving indicated care (e.g., percent of enrollees who had a heart attack who received beta blockers).

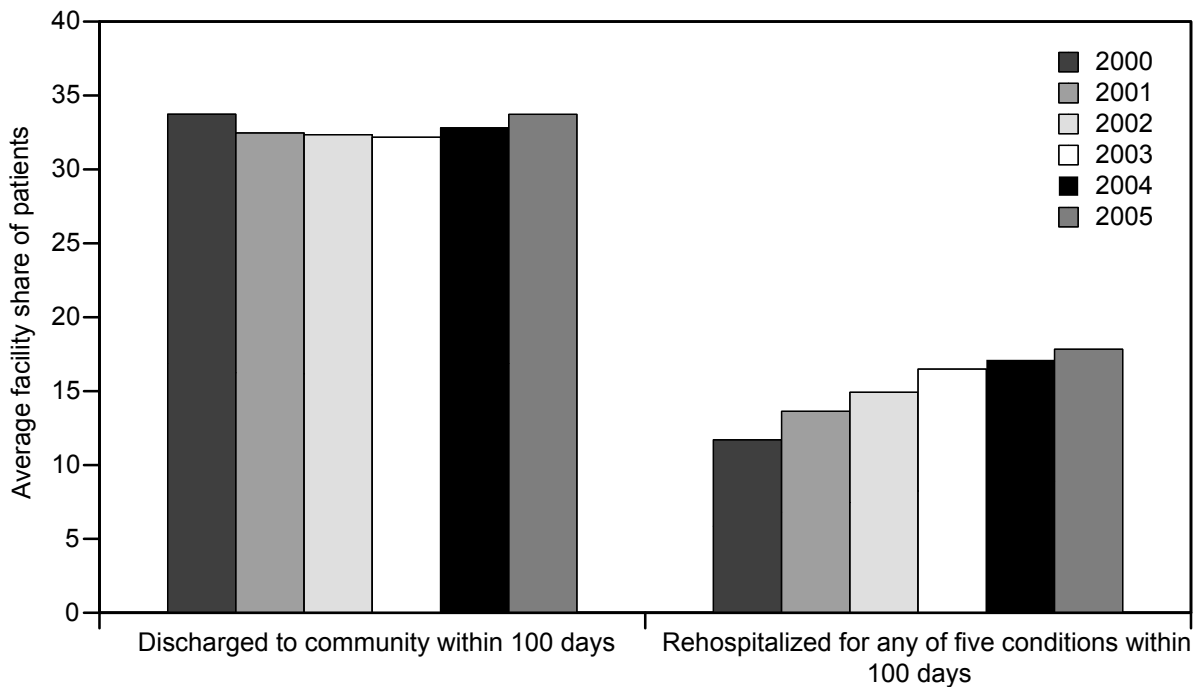
<sup>a</sup> The definition of these measures changed in 2003; therefore 2002 results are not shown.

<sup>b</sup> Acute phase refers to the percent of patients receiving effective treatment after a new episode. Continuation refers to the percent of patients remaining on antidepressant continuously for six months after initial diagnosis. Contacts refer to the percent of patients who received at least 3 follow-up office visits in a 12-week acute phase.

Source: National Committee for Quality Assurance. 2005, 2006, and 2007. *The State of Health Care Quality*. Washington, DC: NCQA. Data for 2006 were taken from an April 8, 2008 download of the 2007 NCQA report. Earlier versions of the 2007 report show different scores in some of the measures.

- Of the 16 measures shown in the table, between 2005 and 2006 six measures remained about the same, four improved and six had not improved between 2005 and 2006. (The reports that are the basis of these data do not indicate whether changes across years are statistically significant.)
- Because many Medicare beneficiaries in Medicare Advantage plans are still not receiving clinically indicated services, opportunities for further improvement exist.

**Chart 4-8. Mixed quality results for SNFs between 2000 and 2005**



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.

Source: Kramer et al. 2008. *Changes in SNF rates of community discharge and rehospitalization 2000–2005*. Study prepared for MedPAC available at <http://www.medpac.gov>.

- Changes in the risk-adjusted measures of quality show mixed results.
- Rates of community discharge within 100 days are almost at the same level as five years ago, having declined through 2003 and then improved during the past two years.
- The risk-adjusted rates of potentially avoidable rehospitalization within 100 days for 5 conditions have steadily increased throughout the period, indicating worse quality. In 2005, the mean risk-adjusted facility rehospitalization rate for the five conditions was 17.8 percent, compared with 11.7 percent in 2000.
- Risk-adjusted quality measures differed by facility type. Hospital-based facilities had community discharge rates more than 14 percentage points higher (indicating higher quality) and potentially avoidable rehospitalization rates 4.5 percentage points lower (indicating higher quality) than freestanding SNFs.
- Risk-adjusted quality measures showed mixed results by ownership. For-profit facilities had higher community discharge rates (0.7 percentage point)—indicating higher quality—but also higher potentially avoidable rehospitalization rates (1.4 percentage points)—indicating poorer quality—compared with nonprofit skilled nursing facilities after risk adjustment.

## Web links. Quality of care in the Medicare program

- 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](http://www.medpac.gov/publications/congressional_reports/Jun06_Ch02.pdf)
- Chapter 2 of the MedPAC March 2007 Report to the Congress includes further information on quality in hospitals and outpatient dialysis services.  
[http://www.medpac.gov/chapters/Mar07\\_Ch02.pdf](http://www.medpac.gov/chapters/Mar07_Ch02.pdf)
- Chapter 2 of the MedPAC March 2008 Report to the Congress includes further information on quality in skilled nursing facilities, home health agencies, long-term care hospitals, and inpatient rehabilitation facilities. Chapter 4 of MedPAC's June 2007 Report to the Congress discusses initiatives to improve the quality of home health services, and Chapter 8 of this report provides information on the quality of care provided by skilled nursing facilities.  
[http://medpac.gov/document\\_TOC.cfm?id=539](http://medpac.gov/document_TOC.cfm?id=539)  
[http://www.medpac.gov/chapters/Jun07\\_Ch04.pdf](http://www.medpac.gov/chapters/Jun07_Ch04.pdf)  
[http://www.medpac.gov/chapters/Jun07\\_Ch08.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](http://www.medpac.gov/publications/congressional_reports/Mar05_Ch04.pdf)
- Chapter 2 of the MedPAC March 2004 Report to the Congress includes and discusses in further detail information similar to that included in many of these charts.  
[http://www.medpac.gov/publications/congressional\\_reports/Mar04\\_Ch2.pdf](http://www.medpac.gov/publications/congressional_reports/Mar04_Ch2.pdf)
- The CMS website provides further information on CMS quality initiatives, including those for dialysis care.  
<http://cms.hhs.gov/QualityInitiativesGenInfo/>
- More information about Medicare's quality initiatives for dialysis care can be found on the CMS website.  
<http://www.cms.hhs.gov/ESRDqualityImproveInit/>
- Medicare provides information about home health agency outcomes on its consumer website.  
<http://www.medicare.gov/HHCompare/Home.asp>

- Chapter 3 of the MedPAC June 2007 Report to the Congress contains additional information on reported quality indicators for Medicare Advantage (MA) plans.

[http://medpac.gov/chapters/Jun07\\_Ch03.pdf](http://medpac.gov/chapters/Jun07_Ch03.pdf)

- The National Committee for Quality Assurance (NCQA) publication cited in Chart 4-7, showing results for the kinds of measures shown in the table, is available from NCQA.

<http://web.ncqa.org/Default.aspx?tabid=447>

- Medicare Advantage plan-level results on quality measures can be obtained by using the Centers for Medicare & Medicaid Services (CMS) Medicare Personal Plan Finder.

<http://www.medicare.gov/MPPF/Include/DataSection/Questions/SearchOptions.asp>

- CMS makes available a downloadable data base of MA plan performance on quality measures, the MPPF–Medicare Advantage data set.

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

- The Commonwealth Fund published a chart book with information on Medicare quality in the spring of 2005.

<http://www.cmwf.org>