2004 National Healthcare Quality Report

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2004 National Healthcare **Quality** Report

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Contents

Key Themes and Highlights From the National Healthcare Quality Report

This is the second annual National Healthcare Quality Report (NHQR). This second report extends the baseline established in the 2003 report for a set of health care quality measures across four dimensions of quality—effectiveness, safety, timeliness, and patient centeredness—and, within the effectiveness component, nine clinical condition areas or care settings—cancer, diabetes, end stage renal disease, heart disease, HIV/AIDS, maternal and child health, mental health, respiratory diseases, and nursing home and home health care.

The 2004 NHQR is based on detailed analyses of 179 measures. The purpose of the report is to track the state of health care quality for the Nation on an annual basis. It is, in terms of the number of measures and number of dimensions of quality, the most extensive ongoing examination of quality of care ever undertaken in the United States or any major industrialized country worldwide.

The first report found that high quality health care is not yet a universal reality and that opportunities for preventive care are often missed, particularly opportunities in the management of chronic diseases in America. The second report finds evidence both that health care quality is improving and that major improvements can be made in specific areas as well.

As a result of the analysis of the 2004 NHQR data, three key themes emerge. These themes are relevant to policymakers, clinicians, health system administrators, community leaders, and all who seek to use the information in the report to improve health care services for all Americans:

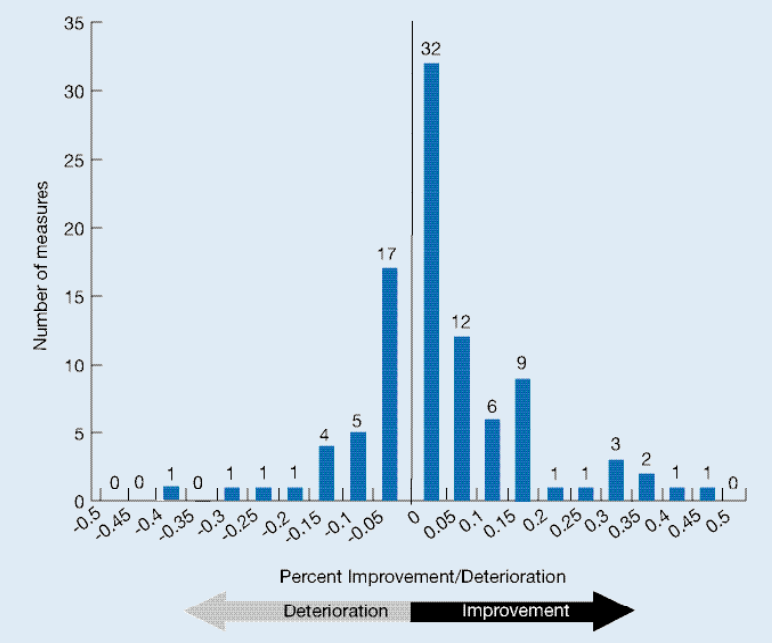
- Quality is improving in many areas, but change takes time.
- The gap between the best possible care and actual care remains large.
- Further improvement in health care is possible.

Quality Is Improving in Many Areas, But Change Takes Time

Health care quality was largely unchanged between the 2003 report and the 2004 report. However, in many areas of health care delivery, improvements were seen in specific measures[i]:

- Out of 98 measures with trend data,[ii] most measures have shown some improvement. Overall, over twice as many measures have improved (67) as have deteriorated (30). One measure showed no change.
- Twelve measures improved between 5% and 10% and 15 measures improved between 10% and 20% (Figure H.1).
- Across the 98 measures, health care quality improved by a median value of 2.8% between data for the reference year shown in the 2003 report and data for the latest year shown in the 2004 report.[iii]
- Major change takes time in national quality measurement. Half of the 98 measures with trend data show modest (between -5% and +5%) or no change.

Figure H.1. Number of measures that have deteriorated or improved, 2003 NHQR vs. 2004 NHQR



Note: The category 0-0.05 includes 1 measure which showed no change.

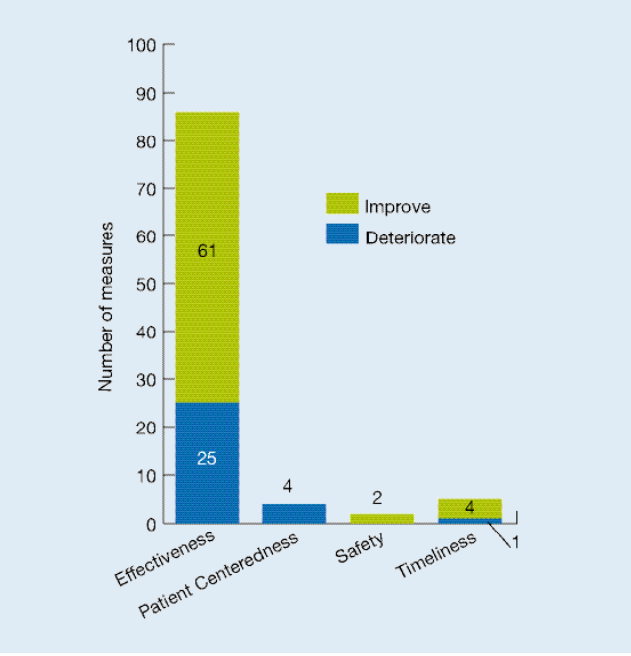
[i]The representation of measure change in Figure H.1 tracks absolute change in these measures where trend data are available. The chart shows the full distribution of "change" in quality within the measure set; no statistical restrictions were used in judging the level of change. Information on statistical testing done for measures in other chapters of this report is presented in Chapter 1. This approach is consistent with measure summary approaches used in the *Healthy People 2000 Final Review*.[1] New methodologies are proposed for measuring progress in HP2010[2] and developmental work on summary measures is underway at AHRQ. Future reports will reflect new approaches to the reporting of summary measures as they become available.

[ii]This includes measures in all of the four dimensions of quality (effectiveness, safety, timeliness, and patient centeredness). However, because of measure specification changes, only two measures of safety are included in this trend analysis. In addition, trend data for one HIV measure and one heart disease measure have been excluded from this analysis because of data changes over time.

[iii]Percent improvement is computed as the median change across all 98 measures for which trend data are available. Median change was computed by taking the percent change from the 2003 NHQR data to the 2004 NHQR data and taking the median value for the 98 measures with trend data.

- The accumulation of multiple years of data will allow future reports to present a more accurate picture of the national direction in health care quality, as trends for shorter periods of time are difficult to interpret.
- Most trend measures are in the effectiveness areas. Although positive change occurred throughout the measure set, most of the changes were seen in effectiveness (Figure H.2).
- Levels of change in performance in the measures with trend data varied somewhat across care settings. Of the 98 measures with trend data, 90 measures could be mapped to care settings.[iv]
  - For the 49 measures of ambulatory care quality, performance improved by a median change of 1.4%.
  - For the 24 measures of hospital care quality, performance improved with a median change of 5.4%.
  - For the 12 measures of home health care quality, performance was virtually unchanged with a median change of 3%.
  - For the 5 measures of nursing home quality, performance improved by a median change of 14.7%.

Figure H.2. Change in quality by health care component, 2003 NHQR vs. 2004 NHQR



Note: Excludes one overall measure.

[iv] Change is defined as the median average change across measures with trend data between the 2003 NHQR and 2004 NHQR. Detailed information on the exact measures included in these calculations is presented in the Summary Measures section of the Measure Specifications Appendix.

The Gap Between the Best Possible Care and Actual Care Remains Large

Although improvements have been made, quality problems exist in many clinical areas and many settings of care. Furthermore, quality of care remains highly variable across the country in ways that case mix and disease prevalence cannot explain. The report documents numerous gaps between actual and desirable quality, highlighting opportunities for improving the consistency with which health care is delivered.

- Some deterioration in selected measures was noted in almost all components of quality (e.g., effectiveness, timeliness, etc.) and almost all condition areas (e.g., cancer, diabetes, etc.).[v] The largest of these are:
  - An increase of 32% in the proportion of patients who left the Nation's emergency departments without being seen (National Hospital Ambulatory Medical Care Survey, 2000-2001).
  - A decrease of 20% in the proportion of elderly patients with pneumonia who received their initial antibiotic according to current clinical recommendations (Centers for Medicare & Medicaid Services, Quality Improvement Organization [CMS QIO] program, 2002).
  - An increase of 12% in the admission rate for short-term complications of diabetes (Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project [AHRQ, HCUP] Nationwide Inpatient Sample, 2001).
- Patients in the highest performing States are getting care at a level of quality many times higher than that of the lowest performing States. For example:
  - Nursing home residents were physically restrained at a rate over 9 times higher in the lowest performing State versus the highest performing State (CMS, 2003).
  - The proportion of elderly patients with pneumonia who received recommended pneumococcal screenings or vaccinations was over 7.5 times lower in the lowest performing State versus the highest performing State (CMS, QIO program, 2002).
  - The median time to critical thrombolytic therapy for heart attack patients was 6.6 times longer in the lowest performing State (2 hours and 20 minutes) versus the highest performing State (21 minutes) (CMS, QIO program, 2001).
- The report documents areas in which comprehensiveness of care is lacking:
  - Although 90% of persons with diabetes state that they had their hemoglobin A1c checked, only 32% state that they have received all five of the prevention tests recommended for long-term diabetes management[vi] (AHRQ, Medical Expenditure Panel Survey, 2001).

[v] Data years vary according to the data source. Additional detail is presented in the specific chapters and in the Tables Appendix.

[vi] The five prevention tests are receipt of hemoglobin A1c test, lipid profile, retinal eye exam, foot exam, and influenza vaccination.

- Although 80% of elderly hospitalized pneumonia patients get their blood cultured before getting antibiotics as recommended, only 30% get all the recommended interventions for elderly patients admitted with pneumonia[vii] (CMS, QIO program, 2001-2002).

Further Improvement in Health Care Is Possible

The 2003 report documented a limited set of best practices in each of the measurement areas that underscored the possibilities which exist for improvement. Although the 2004 report focuses on national performance rather than best practices, it is clear that there are lessons to be learned from improvement efforts that target specific, national consensus measures. Below are examples that offer lessons for improving care in areas in which major improvements in care have already been achieved.

- Major improvements were seen in specific measures in many areas of the measure set. The largest of these improvements are listed below.[viii]
  - A relative decrease of 37% in the percentage of nursing home patients who have moderate to severe pain (CMS, Minimum Data Set, 2002 to 2003).
  - A relative decrease of 34% in the hospital admission rate for uncontrolled diabetes (AHRQ, HCUP Nationwide Inpatient Sample, 1994 to 2001).
  - A relative decrease of 34% in the percentage of elderly patients who were given medications potentially inappropriate for the elderly (AHRQ, Medical Expenditure Panel Survey, 1996 to 2000).

It must be noted that improvement is the result of focused efforts. For example, as part of the CMS Nursing Home Quality Initiative (NHQI), Quality Improvement Organizations worked on targeted, intensive programs with a selected group of facilities. There was significantly greater improvement among facilities that participated in the intensive effort compared with those who did not, as follows:

- For chronic pain, a relative decline of 46% for the intensive group compared with a 33% decline in the non-intensive group.
- For postacute care pain, a relative decline of 17% for the intensive group compared with a 9% decline in the non-intensive group.
- For residents in physical restraints, a relative decline of 29% for the intensive group compared with a 17.6% decline among facilities in the non-intensive group.[ix]

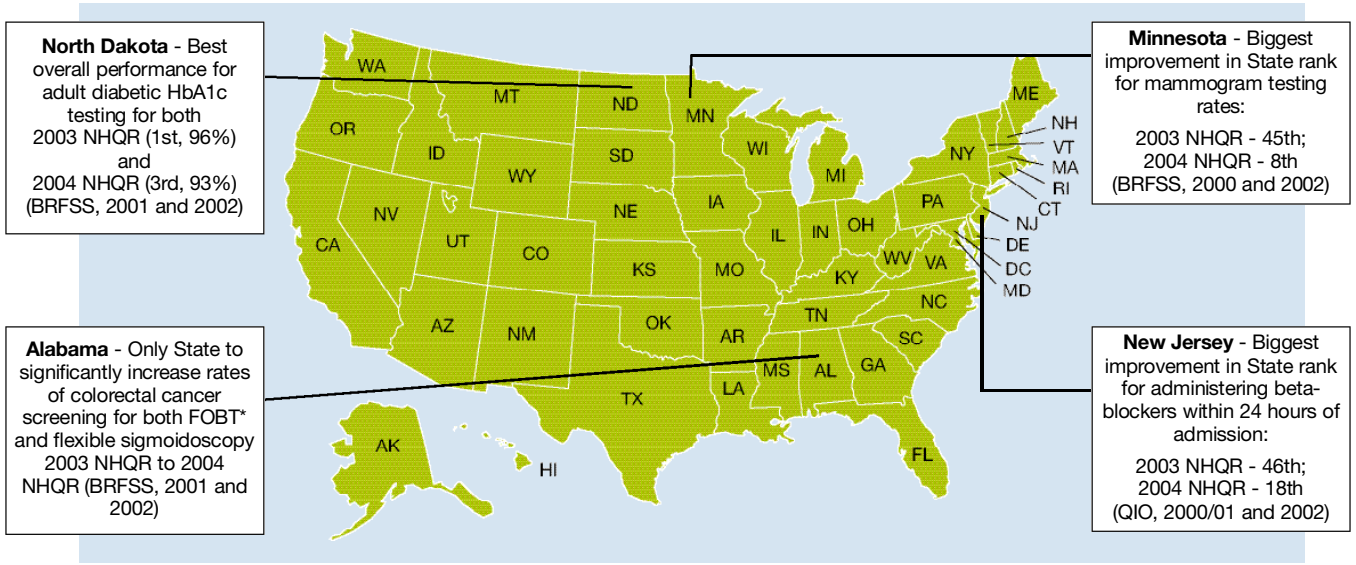
[vii] The recommended interventions tracked here are receipt of antibiotics within 4 hours of hospital arrival, recommended antibiotics consistent with current guidelines, and blood cultures before antibiotics are administered.

[viii] See the Tables Appendix for detailed data information.

[ix] These relative declines are the fourth quarter of 2003 relative to the second quarter of 2002 (CMS, Nursing Home Quality Initiative). More detail on the NHQI is presented in the Nursing Home and Home Health Care section of Chapter 2.

- Improvements by specific States were seen in a variety of areas across the country. While no State rates best or worst in every measure, some States made significant improvements in their performance between the 2003 report and the 2004 report. A selected number of notable improvements in NHQR measures for cancer and diabetes care by States are highlighted in Figure H.3. Data for all States on these measures are presented in the Tables Appendix.[x] Detailed examination of initiatives that may have brought about these improvements is beyond the scope of this report. However, such an examination is possible with the NHQR data and will be necessary to learn lessons from these improvements.

Figure H.3. Quality at the State level, 2003 NHQR vs. 2004 NHQR



* Colorectal cancer screening can be done using fecal occult blood testing (FOBT) or flexible sigmoidoscopy or colonoscopy or barium enema. The NHQR measure tracks FOBT and flexible sigmoidoscopy or colonoscopy.

Note: Depending on the measure, not all States may have been included in the analysis.

Looking Forward

The NHQR is the broadest examination of quality of health care, in terms of number of measures and number of dimensions of care, ever undertaken in the United States. The 2004 report documents progress versus the 2003 baseline in many areas, although the nature of national quality monitoring means that comprehensive change in health care quality is gradual.

Sustained data measurement is the foundation for sustained quality improvement. That is why the NHQR will continue to track all of the measures in its measure set in future reports. At the same time, AHRQ and its public and private sector colleagues will continue efforts to keep the measure set parsimonious yet robust and concurrent with the latest science. Broad quality monitoring can serve as the foundation for a national "scorecard" on the health care system as well as a potential evaluation system for public-sector, as well as private-sector, health care initiatives.

[x] Although the NHQR does not present detailed information on best practices, readers with interest in additional information on quality improvement and tools for improving care are encouraged to consult www.qualitytools.ahrq.gov. Information on the Behavioral Risk Factor Surveillance System (BRFSS) and QIO programs noted in Figure H.3 is presented in the Measure Specifications Appendix.

Improved data availability for tracking and improving health care quality is one of several potential results of an improved health information technology (HIT) infrastructure. Health information technology also has the potential to improve quality of care, reduce medical errors, and lower administrative costs. The Department of Health and Human Services has developed a strategy to accelerate the development of the Nation's health information infrastructure, including electronic health records and a new network to link health records nationwide to improve the quality of health care delivery in the Nation. Future versions of the report will benefit from this ongoing development of the Nation's HIT infrastructure.

However, high impact quality improvement is not achieved through broad, diffuse measurement initiatives but rather through focused assessment, rapid improvement initiatives, and targeting specific audiences.[3] For this reason, the NHQR will continue to evolve in future years to focus the report text on a set of high-impact "highlight" measures of health care quality while, at the same time, tracking the breadth of the measures in the measure set through the detailed data tables. The report will also serve as the basis for derivative products designed by AHRQ and its Departmental partners. These products will guide users of the report data to engender ongoing improvement in quality of health care for all Americans.

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Chapter 1. Introduction and Methods

Purpose and Goals

This is the second annual National Healthcare Quality Report (NHQR). In its reauthorization legislation, Congress directed the Agency for Healthcare Research and Quality (AHRQ) to produce an annual report on health care quality in the United States (Section 913(b)(2) of the Public Health Service Act as amended by Public Law 106-129). The National Healthcare Quality Report was designed and produced by AHRQ, with support from the Department of Health and Human Services (HHS) and private-sector partners, to respond to this legislative mandate.

The first NHQR was issued in December 2003. This second annual report builds on the first year "baseline" report and tracks trends and progress in health care quality. The purpose of the report is to measure the state of health care quality, and thereby contribute to improvements in care for all Americans. In addition to summarizing changes in health care quality in the Nation, data in the 2004 report provide insight into opportunities for improvement in care. Finally, ongoing work on the NHQR measure set continues to allow HHS to aid in the long-term goal of aligning quality measurement efforts.

Changes in the 2004 Report

There are two substantial changes in this year's report that were undertaken to enhance its readability and utility. The first is a focus on highlight measures with in-depth analysis, rather than broad, but sparse, coverage of all 179 measures. The second is a shift in presentation toward less narrative and more charts with bulleted key findings. Note that data for all the measures are included in tables at the end of each section. Other changes include:

- An improved online version of the report, including easier access to tables and hyperlinks to data and sources (www.qualitytools.ahrq.gov).
- The addition of summary measures in many areas. Summary measures as used in the report are either summarizations of information across multiple measures (i.e. median change across a set of measures) or a composite measure assessing the percent of patients who received a range of recommended interventions (i.e. the percent of patients who received all recommended diabetes management interventions.)
- An addition of 31 new measures, deletion of 9 measures, and changes to 19 measures. These measure updates respond to new science and consensus on health care quality measures for clinical conditions like diabetes, heart disease, respiratory disease, and other priority areas.
- Additional derivative products including workbooks and fact sheets, in both printed and online format, that focus on cross-cutting and important issues of health care quality.

Additional detail on these changes is presented below.

How This Report Is Organized

The NHQR consists of the report itself and two appendixes.[i] The report itself is organized as a chartbook into the following chapters:

- **Chapter 1: Introduction and Methods** documents the organization and major changes from the 2003 report and summarizes the data sources for the report.
- **Chapter 2: Effectiveness** examines quality of care for nine separate clinical conditions or care settings. These condition areas (listed subsequently) were developed and approved for use in the 2003 report and are based largely on Healthy People 2010 (HP2010) condition areas. The section also includes a discussion of nursing home and home health care. In developing future reports, AHRQ and its partners will examine the list of conditions tracked in this chapter and alter or add to them as appropriate.
- **Chapter 3: Patient Safety** tracks measures of patient safety, hospital-acquired infections, injuries or adverse events due to medical care, complications of health care, and medication safety.
- **Chapter 4: Timeliness** examines both the delivery of time-sensitive clinical care and patients' perceptions of the timeliness and accessibility of their care.
- **Chapter 5: Patient Centeredness** incorporates the patient's perspective into the report by tracking patients' experiences with care for both routine and emergency services.

The two appendixes are available online:

- **Data Tables** provides detailed tables for most measures analyzed for the report, including both measures highlighted in the report text and measures examined but not included in the text. There are two primary types of tables: 1) national tables, which present a national estimate and breakdowns by sociodemographic and other characteristics; and 2) State tables, which present a national estimate and estimates for each State. In all cases, where estimates are provided, standard errors for those estimates are also provided to facilitate additional statistical testing.
- **Measure Specifications** provides information about how to generate each measure analyzed for the report. It includes both measures highlighted in the report text as well as other measures that were examined but not included in the text. This appendix is divided into two parts: 1) specifications for each measure and 2) specifications for each data source used in the report.

This chapter describes the goals and organization of the report, important changes since the 2003 report, and methodological steps taken in analysis and synthesis of data for the report. Subsequent chapters cover the components of health care quality—effectiveness, patient safety, timeliness, and patient centeredness. Each chapter is subdivided as follows:

- **Importance and Measures** provides summary information on the background and impact of a particular disease area or component of quality. Also presented is a description of how the report measures quality in this area and the measures that are "highlighted" in the subsequent charts.
- **Findings** presents one or more charts on key highlight measures with bulleted findings on major points.

[i] The appendixes for the report are available online at www.qualitytools.ahrq.gov.

For information on the specifications for the measures and the data sources, readers are encouraged to consult the Measure Specifications Appendix noted above. For additional information on the rationale for selection of the measures and detailed tables for all measures, readers are encouraged to consult the Tables Appendix. The Tables Appendix also summarizes the statistical testing procedures conducted for the detailed tables in the NHQR.

How the Report Was Created

AHRQ has received ongoing input from numerous HHS agencies and offices that are represented on an Interagency Workgroup formed to provide advice on the design of the report. AHRQ also received considerable external input through several mechanisms, including AHRQ's National Advisory Council, a subcommittee of which has been organized under the leadership of Dr. Don Berwick to provide ongoing input on the report. The final 2004 measure set builds on extensive work conducted for the development of the 2003 report measure set.

In order to select measures for the 2003 report a "call for measures" was sent to all relevant Federal agencies. The Institute of Medicine (IOM) issued a complementary call for measures to the private sector. Those submitting measures also had to submit the name of a proposed data set. More than 600 measures were submitted for consideration in response to these calls.

The NHQR Interagency Workgroup mapped the candidate measures into the NHQR conceptual framework. The measures within each category of care were evaluated for inclusion in two parts:

1. Measures were selected to maintain consistency with existing consensus-based measure sets where possible.
2. The workgroup assessed candidate measures using the following criteria:[1]
    - **Importance.** What is the impact on health associated with the health problem assessed by the measure? Are policymakers and consumers concerned about this area of health care quality? Can the health care system meaningfully address this aspect or problem?
    - **Scientific soundness.** Does the measure actually reflect what it is intended to measure? Does the measure provide stable results across various populations and circumstances? Is there scientific evidence available to support the measure?
    - **Feasibility.** Is the measure in use? Can information needed for the measure be collected in the scale and time frame required? How much will it cost to collect the data needed for the measure? Can the measure be used to compare different population groups?

A particular effort was made to include both process measures that assess what happens to patients during their care and outcome measures that track what ultimately happens as a result of that care.

In order to update the measure set for the 2004 report, AHRQ, through the NHQR Interagency Workgroup, conducted a review process from December 2003 through April 2004 to propose and analyze possible changes to the 2003 measure set. The revised measure set was then published for public comment in the *Federal Register* on May 28, 2004, and amended accordingly. Additionally, a consultant performed an evaluation of the development process of the first NHQR and the presentation and dissemination of the report, including those involved in the process as well as the intended audiences. The results of these studies, the comments received during the clearance process and those from other stakeholders, and the substantial input from the Interagency Workgroup shaped the changes made in the second report.

Conceptual Framework

The NHQR is based on a conceptual framework developed for AHRQ and HHS by the Institute of Medicine in 2001. In its report to AHRQ, the IOM reinforced components of health care quality that have been used in numerous other contexts. Quality health care means doing the right thing, at the right time, in the right way, for the right people—and having the best possible results.[2] Quality health care is care that is:

- **Effective**—Providing services based on scientific knowledge to all who could benefit and refraining from providing services to those not likely to benefit.
- **Safe**—Avoiding injuries to patients from the care that is intended to help them.
- **Timely**—Reducing waits and sometimes harmful delays for both those who receive and those who give care.
- **Patient centered**—Providing care that is respectful of and responsive to individual patient preferences, needs, and values and ensuring that patient values guide all clinical decisions.

The conceptual framework designed by the IOM (see Figure 1.1) is a matrix including components of health care quality (e.g., effectiveness, safety, timeliness, patient centeredness, as well as equity) and patient needs (e.g., staying healthy, getting better, living with illness or disability, coping with the end of life). The measures that populate this matrix are both process and outcome measures, in keeping with recommendations from the IOM. This mix allows the report to present clinically specific, "actionable" measures of health care quality that can be changed in the process measures and "end result" measures that track what people ultimately experience in their interactions with the health care system.

The matrix is not evenly represented by measures. For example, the majority of measures are in the effectiveness component, and there are no measures in the end of life category. It is not clear what the correct distribution of measures is, and more thought will be given to whether the matrix needs updating in future reports. Additionally, the priority conditions identified by the IOM in its recent work, *Priority Areas for National Action: Transforming Health Care Quality*, will receive increased focus in future years.[3]

Figure 1.1. NHQR framework

Components of Health Care Quality

Health care needs	Effectiveness	Safety	Timeliness	Patient Centeredness
Staying healthy				
Getting better				
Living with illness or disability				
End of life care				

Source: Institute of Medicine. *Envisioning the National Health Care Quality Report*. 2001.

New in This Report

Changes to Report Format

The move from a longer text-based report to a shorter chartbook format resulted from input received during the Departmental clearance process and public review of the 2003 report and its companion report, the National Healthcare Disparities Report (NHDR). This format is well suited to summarizing and synthesizing data findings across the wide range of clinical conditions and dimensions tracked in the NHQR and NHDR. In 2004, both reports have adopted this chartbook presentation format.

This format change necessitates a more selective approach to highlighting measures in the text as only a limited number of measures/presentations of measures can be made in a chartbook format.

In addition to the general criteria described in the previous section, the NHQR and NHDR AHRQ team applied secondary criteria for selecting measures with priority given to measures with:

- Current data
- Proximity to care (i.e., process measures preferred to outcome measures, where possible)
- Clinical significance
- Methodological soundness
- High prevalence
- Variability over time, across States, or among relevant subpopulations
- Nationally representative data
- Specificity (i.e., measures that are more specific for particular target populations)

In order to make the selection of "highlight" measures, AHRQ worked closely with Departmental colleagues through the NHQR Interagency Workgroup to review the initial selection of highlight measures and determine their appropriateness for use in the 2004 report.

New Data and Data Sources

The report explicitly relies on existing measures. Also, the report tracks selected conditions using measures for which national data are available. It does not directly address facility or individual practitioner performance, consumer choice, or provider accountability. As noted, the report addresses four dimensions of quality and, within the effectiveness dimension, nine clinical condition areas as presented below:

Dimensions of quality

- Effectiveness
- Safety
- Timeliness
- Patient centeredness

Clinical effectiveness areas

- Cancer
- Diabetes
- End stage renal disease
- Heart disease
- HIV/AIDS
- Maternal and child health
- Mental health
- Respiratory diseases
- Nursing home and home health care

This report is intended to track quality for the Nation over time. As such, it must rely on readily available, reliable and valid, regularly and consistently collected data at both the national and State levels. Wherever possible, these requirements were applied to available data sources and, as such, they restricted the data sources that could be used for the report. When the call for measures for the 2003 report was made, there was also an accompanying request for data sources for the proposed measures. During the developmental phase of the project, the workgroup devised a two-tiered scheme for categorizing possible data sources for the report. Each potential data source was examined and classified according to the following criteria:

Tier I: Substantively relevant and nationally representative—	**Tier II: Substantively relevant but—**
• For the target population under consideration. • For a given population such as civilian, resident, noninstitutionalized, nursing home residents, etc. • And accurate and reliable with specified relative error. • With the capacity for multiple levels of detail. • With acceptable response rates.	• Adjusted to compensate for limitations in national representation. • Data representative at the subnational level (such as State or Metropolitan Statistical Area). • Data not nationally representative but substantively important.

This system of categorization helped to identify established, national data sources that are the standard for providing national estimates over time for the report. The data from these data sources provide estimates for the U.S. civilian noninstitutionalized population.

Although the 2003 NHQR included nearly a dozen databases, gaps in measurement existed. This year, new sources of data were identified and added to help fill these gaps. As in the 2003 report, standardized suppression criteria were applied to all databases to support reliable estimates.[ii] New data added this year come from:

- Medicare Patient Safety Monitoring System, which includes information from chart reviews about patient safety events among hospitalized Medicare beneficiaries.
- Healthcare Cost and Utilization Project, which now also contributes Inpatient Quality Indicators related to mortality in addition to the Prevention Quality Indicators and Patient Safety Indicators that were contributed to the 2003 report.

In addition, adjustments for survey design complexities for individual data sources were accounted for in the production of the survey estimates, standard errors, and significance tests. Detailed information on data sources is presented in the Measure Specifications Appendix.

[ii] Estimates based on sample size fewer than 30 or with relative standard error greater than 30% were considered unreliable and suppressed. Databases with more conservative suppression criteria were allowed to retain them.

New and Continuing Analyses Issues

Trend and summary analysis. A particular emphasis in this year's report is the analysis of trends in data over time. Although this analysis is an addition to the 2004 report, it is limited because of the limited amount of data available to make such comparisons in the second report. Special analyses were undertaken for summarizing the data across the measure set for presentation in the Highlights section of this report. These include a summary of median change over time across all measures with trend data, a presentation of the distribution of change in the measures from data presented in the 2003 report versus the latest year data presented in the 2004 report, and a presentation of relative differences in key measures over time and between States. Notes on these analyses are presented in the Highlights section.

With a range of conditions and measures, AHRQ maintains a systematic process for reviewing data and assessing relevant differences as they are presented in the chapters that follow. Reported comparisons are for statistically significant differences unless otherwise noted. Statistical testing was conducted on the estimates. The tests done were two-tailed t-tests of significance at the alpha level of 0.05. All data highlighted in this report meet this statistical criterion. The testing included these steps:

- For national tables, differences between estimates for subgroups and the identified comparison (reference) group were tested for statistical significance.
- For national tables with data over time, the least recent year was used as the reference and subsequent years were tested versus that reference year.
- For State tables, States were compared with the national average. (Readers should note that these differences between States and the national average were computed solely to highlight opportunities for improvement nationally rather than as assessments of the performance of individual States.) In response to specific input from the NHQR Interagency Workgroup, State comparisons in the 2004 report were made using quartiles.

Data suppression. Sometimes not all the data collected from surveys, medical records, or administrative sources can be presented. The rule employed for data suppression for this report was to adhere to the rules specified by the data source from which the measure was derived. (Detailed information on each of the data sources is contained in the Measure Specifications Appendix.)

For most data sources, there were two main data suppression criteria:

1. Cell values based on unweighted N less than 30, and
2. Relative standard errors greater than 30%, when appropriate.

Details on the data suppression approaches for the NHQR data are presented in the preface to the Tables Appendix.

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Chapter 2. Effectiveness

Cancer

Importance[i] and Measures

Prevalence and Incidence

- The number of new cancer cases is projected to reach over 1.4 million in 2004.
- Four cancers—lung, colorectal, breast, and prostate—account for over half of the new cases.

Morbidity and Mortality

- Cancer is the Nation's second leading cause of death, after heart disease.
- The number of cancer deaths is expected to top 560,000, or over 1,500 per day, in 2004.

Cost

- Cancer is among the most expensive diseases. Total expenses are projected to reach $189.5 billion in 2003, including over $64.2 billion in total direct health care expenses.

Measures

Evidence-based consensus on what comprises good quality care and how to measure it currently exists for only a few cancers and a few aspects of care, including screening and the incidence of advanced stage detection for breast, cervical, and colorectal cancers. Mortality rates are also an accepted distal measure of outcome. Because colorectal cancers have the highest mortality and advanced stage detection rate and the lowest screening rate, measures highlighted in this section are:

- Trends in colorectal cancer mortality
- Advanced stage detection rate
- Screening for colorectal cancer

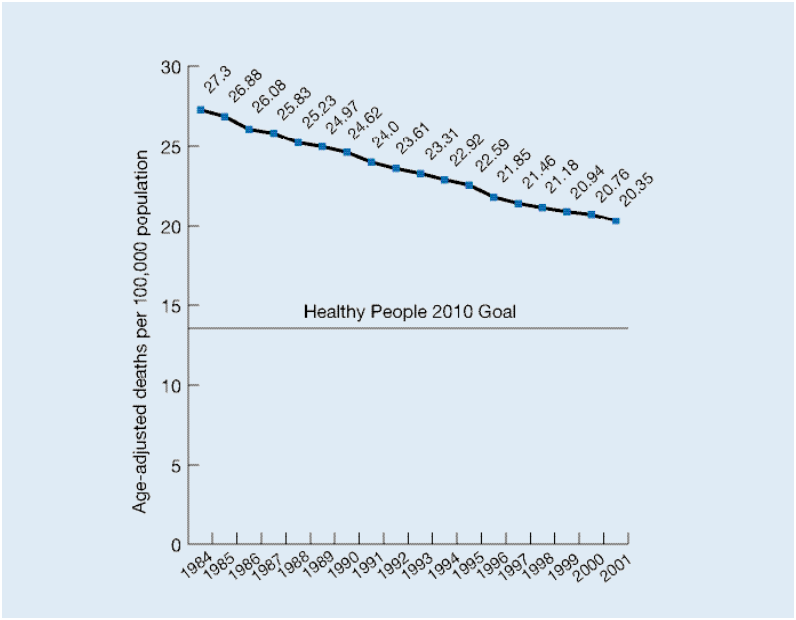
[i]Statistics are from the American Cancer Society, Cancer Facts and Figures; 2003 (see http://www.cancer.org).

Findings

Trends in Colorectal Cancer Mortality

The NHQR tracks both process and outcome measures of quality. The ultimate outcome of the quality of care offered for cancer is the death rate from leading cancers. Colorectal cancer mortality is measured below as the number of deaths per 100,000 persons.

Figure 2.1. U.S. death rate for colorectal cancer, 1984-2001



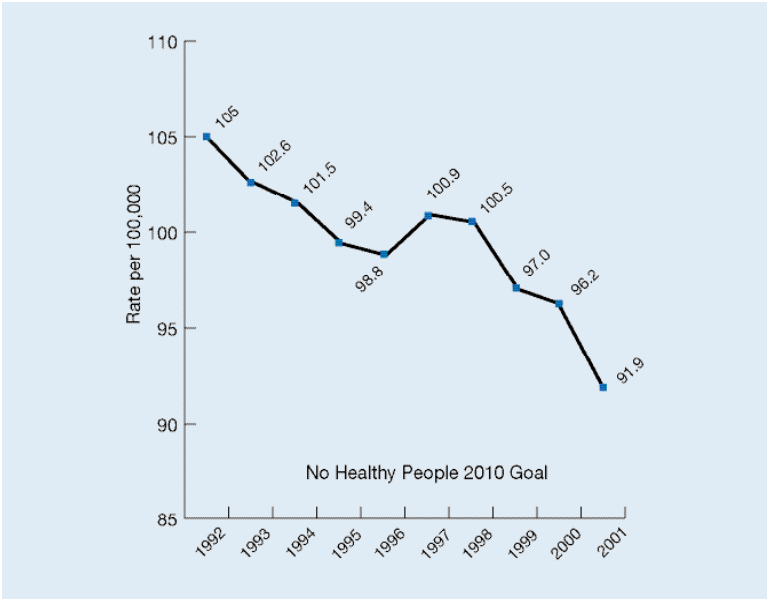
Source: Centers for Disease Control and Prevention, National Center for Health Statistics data, National Vital Statistics System-Mortality (analyzed by National Cancer Institute).

- Colorectal cancers are the second leading cause of cancer mortality with 56,000 deaths projected in 2004.
- The death rate from colorectal cancers has been falling steadily since 1984 by an average of almost 2% per year (Figure 2.1).
- The Healthy People 2010 goal of 13.9 deaths per 100,000 people will not be met if the long-term trend continues at its current pace.

Advanced Stage Detection Rate

Cancers can be diagnosed at different stages of development. Monitoring the rate of cases of cancer that are diagnosed at late or advanced stages is a good measure of the effectiveness of cancer screening efforts.

Figure 2.2. Rate of new cases of advanced stage colorectal cancer, 1992-2001



Source: National Cancer Institute, Surveillance, Epidemiology, and End Results (SEER) Program, released April 2004, based on the November 2003 submission.

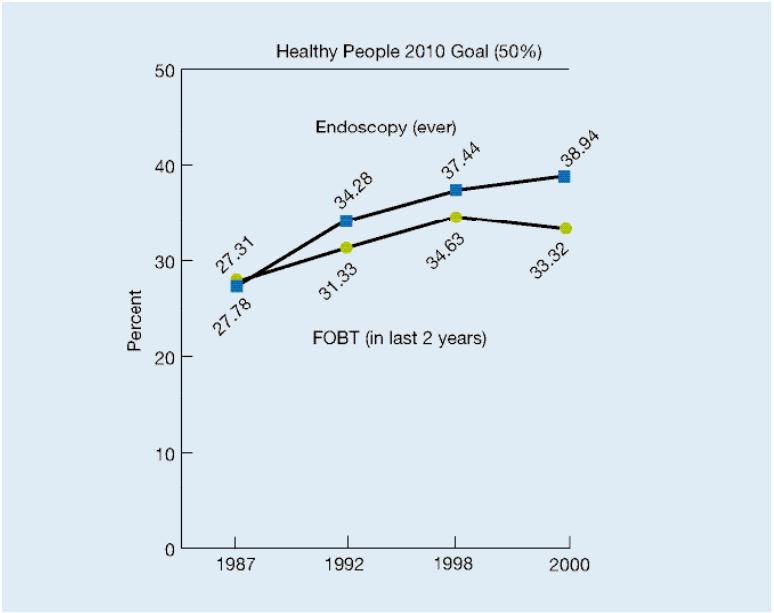
Note: Denominator includes men and women age 50 and over. Numerator includes those in the age group diagnosed at an advanced stage (tumors diagnosed at regional or distant stage). Rates are age adjusted to the 2000 U.S. population.

- The incidence rate of advanced stage colorectal cancer has steadily declined between 1998 and 2001 on the average of 2.9 per 100,000 per year for people 50 years of age and older.
- The largest 1-year drop of the last decade (4.3 new cases per 100,000) was for the most recent year of data, 2001 (Figure 2.2).

Screening for Colorectal Cancer

National guidelines support the use of two types of colorectal cancer screening, colorectal endoscopy and fecal occult blood testing (FOBT). Guidelines suggest that FOBT is most effective when done at 1- to 2-year intervals, while research is ongoing on the optimal timing for endoscopy.

Figure 2.3. Percent of adults (ages 50+) who had colorectal cancer screening, by type, 1987-2000



Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey (analyzed by the National Cancer Institute).

- The trend for colorectal screening with endoscopy has been rising since 1987 to 39% of the population age 50 and over in 2000 (Figure 2.3). However, at that rate, the HP2010 goal of 50% will not be met.
- The trend for colorectal screening with FOBT rose between 1987 and 1998 and then showed no change between 1998 and 2000. At this rate of change, the HP2010 goal of 50% will not be met.
- Although the screening rate for colorectal cancers has been increasing overall, less than half of Americans age 50 and over—about 45 million people—are screened for colorectal cancer by FOBT in the last 2 years or endoscopy ever.

List of Measures: Cancer

Measure	Year	National estimate	National table number	State table number
Screening for breast cancer:				
Percent of women (age 40 and over) who report they had a mammogram within the past 2 years	2000	70.3	1.1a	1.1b
Rate of breast cancer incidence per 100,000 women age 40 and over diagnosed at advanced stage (regional, distant stage or local stage w/tumor greater than 2 cm)	2001	149.7	1.2	xxx
Screening for cervical cancer:				
Percent of women (age18 and over) who report that they had a Pap smear within the past 3 years	2000	81.4	1.3a	1.3b
Rate of cervical cancer incidence per 100,000 women age 20 and over diagnosed at advanced stage (all invasive tumors)	2001	12.1	1.4	xxx
Screening for colorectal cancer:				
Percent of men and women (age 50 and over) who report they ever had a flexible sigmoidoscopy/ colonoscopy	2000	38.9	1.5a	1.5b
Percent of men and women (age 50 and over) who report they had a fecal occult blood test (FOBT) within the past 2 years	2000	33.3	1.6a	1.6b
Rate of colorectal cancer incidence per 100,000 men and women age 50 and over diagnosed at advanced stage (tumors diagnosed at regional or distant stage)	2001	91.9	1.7	xxx
Cancer treatment:				
Cancer deaths per 100,000 persons per year for all cancers	2001	196	1.8a	1.8b
Cancer deaths per 100,000 persons per year for most common cancers: prostate cancer	2001	29.1	1.9a	1.9b
Cancer deaths per 100,000 persons per year for most common cancers: breast cancer	2001	26	1.10a	1.10b
Cancer deaths per 100,000 persons per year for most common cancers: lung cancer	2001	55.3	1.11a	1.11b

List of Measures: Cancer *(continued)*

Measure	Year	National estimate	National table number	State table number
Cancer treatment: *(continued)*				
Cancer deaths per 100,000 persons per year for most common cancers: colorectal cancer	2001	20.1	1.12a	1.12b
Deaths per 1,000 admissions with esophageal resection for cancer	2001	89.408	1.13	xxx
Deaths per 1,000 admissions with pancreatic resection for cancer	2001	67.295	1.14	xxx

Note: See Tables Appendix for national and State tables listed above.

Diabetes

Importance and Measures

There are three forms of diabetes. All forms of diabetes are characterized by elevated blood glucose, which can cause a number of complications over time if not controlled.[1]

Prevalence and Incidence

- In 2003, the number of adults with diagnosed diabetes was 13 million. With the addition of 5.2 million undiagnosed cases, the total prevalence of diabetes was 6.3%.
- According to the Centers for Disease Control and Prevention (CDC), in 2002 the number of new cases of diabetes in adults was 1.3 million.
- The number of cases of diagnosed diabetes is projected to increase 165% between 2000 and 2050, from 12 million to 39 million.[2]

Morbidity and Mortality

- Diabetes is the leading cause of blindness, nontraumatic lower extremity amputation, and end stage renal disease and increases the risk of complications with pregnancy.
- Diabetes was the sixth leading cause of death in the United States in 2001.[3]
- People with diabetes are generally at twice the risk of death and are two to four times more likely to die from heart disease or stroke than those without diabetes.[1]

Cost

- In 2002, costs of diabetes totaled $132 billion, including about $92 billion in direct medical expenditures and about $40 billion in lost productivity and premature death.[4]

Measures

The NHQR diabetes measures include five recommended diabetes interventions and measures of associated outcomes (such as cholesterol and blood pressure levels and diabetes-related complications and hospital admissions). Measures highlighted in this section include:

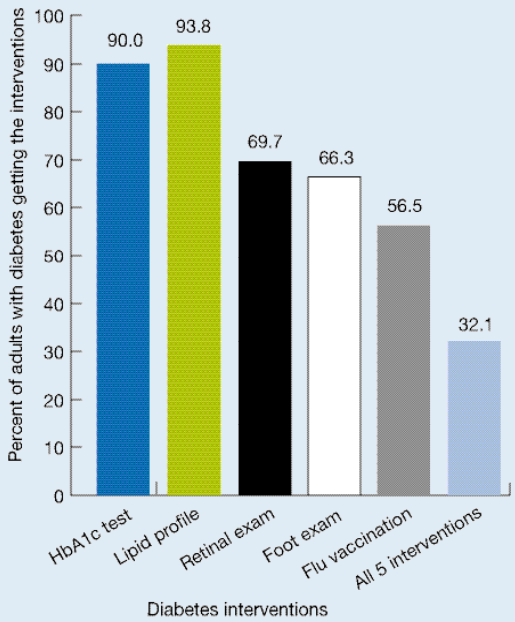
- Receipt of recommended interventions for diabetes management
- State variation in HbA1c testing
- Hospital admission rates for long-term diabetes complications (renal, eye, neurological, circulatory, or complications not otherwise specified, excluding pregnancy-related diabetes)

Findings

Receipt of Recommended Interventions for Diabetes Management

The NHQR tracks the national intervention rates for each of five recommended diabetes interventions as well as a composite of the respondents who received all five interventions.

Figure 2.4. Adults age 18 and over with diabetes who received HbA1c test, lipid profile, retinal exam, foot exam, and influenza vaccination, and rate for receipt of all five tests, 2001



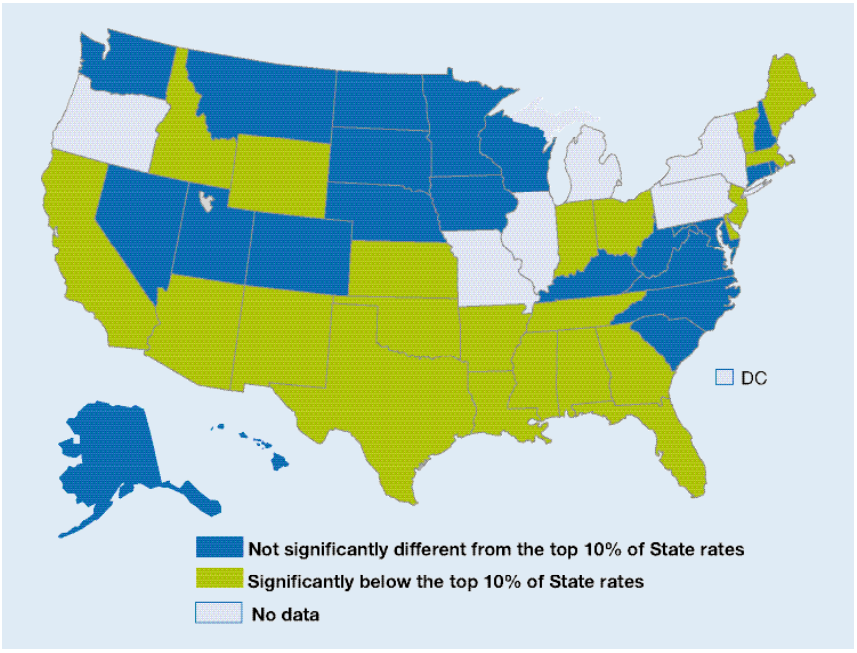
Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2001.

- Approximately one-third of adults with diabetes received all five interventions recommended for comprehensive diabetes care in 2001 (Figure 2.4).
- The national rate for HbA1c testing at least once annually for adults with diabetes age 18 and over was nearly 90% in both 2000 and 2001.
- In 2001, nearly 94% of diabetics had a lipid profile sometime in the previous 2 years. Although controlling cholesterol can significantly reduce the risk for cardiovascular disease in individuals with diabetes, about 60% have their most recent LDL cholesterol at a minimally acceptable level of <130 mg, and 32% have it at an optimal level of <100 mg, up from 8% in 1988-94 (National Health and Nutrition Examination Survey [NHANES], 1999-2000).
- In 2001, only two-thirds of people with diabetes reported having regular foot exams in the past year. People with diabetes account for over 60% of nontraumatic lower extremity amputations; foot care and preventive exams can reduce rates of such amputation by 45%-85%.[1] All individuals with diabetes should receive an annual foot examination to identify high-risk foot conditions.[5]
- People with diabetes are considered at an increased risk for complications from influenza. Just over half of adults (56.5%; see Tables Appendix, Table 1.19a) with diabetes received an influenza vaccination in 2001.

State Variation in HbA1c Testing

Variation across the country is one measure of the consistency with which care is offered. Examining State variation in diabetes testing rates can offer lessons on opportunities for improvement.

Figure 2.5. State variation in rates of receipt of HbA1c testing for adults, 2002



Source: Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System, 2002.

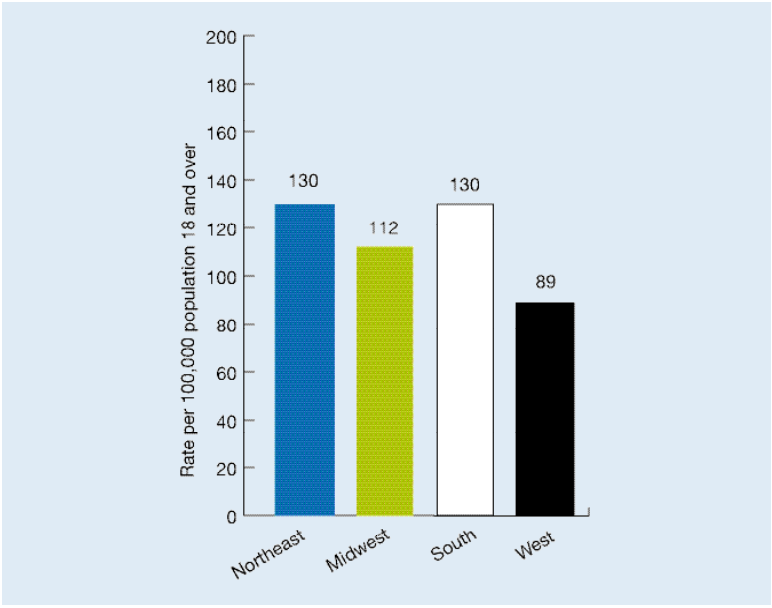
- Performance is high across the country relative to other diabetes measures. Half of the reporting States had rates that were not statistically different from the mean of the top decile of States (94.2%) and nearly a quarter of reporting States had rates over 90% (Figure 2.5).
- The State rates of reporting States for at least one HbA1c test for people with diabetes in 2002 ranged from 77.1% to 96.3%. Variation across States is lower for this measure than other diabetes quality measures—retinal exams, foot exams, and influenza immunization.
- Uniformly high performance is not seen when assessing the percentage of patients having two or more HbA1c tests per year (a standard tracked by BRFSS). State averages of reporting States are more varied than for one or more times per year, ranging from 53.4% to 82.6%.[i]
- Although the HbA1c testing rates for most reporting States did not change significantly between 2001 and 2002, South Carolina, West Virginia, and Wyoming each showed significant improvement over their previous rates.

[i]Alaska's rate is 42.9%, SE=11.8 and N=129. Because of the large standard error and small N, this rate is left out of the range of values.

Hospital Admissions for Long-term Diabetes Complications

Admissions for conditions that can be managed in an outpatient setting is one indicator of the effectiveness and timeliness of outpatient care. Quality diabetes care captured in the NHQR diabetes process measures will ideally result in lower admissions for long-term complications. However, admissions for diabetes may also be an indicator of access to care, patient compliance, and other factors. Long-term complications include renal, eye, neurological, circulatory, or complications not otherwise specified and do not include pregnancy-related diabetes.

Figure 2.6. Adult admissions per 100,000 population 18 and over (general population) for long-term complications of diabetes, by region, 2001



Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2001.

- The estimated national rate of hospital admissions of the general population for long-term complications of diabetes in 2001 was just over 117 per 100,000 adult population.
- There is significant variation across regions with regard to hospital admissions for long-term diabetes complications. Admission rates in the Northeast and South are approximately 16% higher than in the Midwest and 47% higher than in the West (Figure 2.6). This measure is influenced by State variation on diabetes prevalence.
- Individuals living in areas with a median income of less than $25,000 per year are hospitalized for long-term complications more than twice as often as those living in areas with median income of $45,000 or more.
- The difference in hospital admissions for long-term complications between men and women is highly significant, with women 22% less likely than men to be admitted.

List of Measures: Diabetes

Measure	Year	National estimate	National table number	State table number
Management of diabetes:				
Percent of adults with diabetes who had a hemoglobin A1c measurement at least once in past year	2001	90.0	1.15a	1.15b
Percent of patients with diabetes who had a lipid profile in past 2 years	2001	93.8	1.16	xxx
Percent of adults with diabetes who had a retinal eye examination in past year	2001	69.7	1.17a	1.17b
Percent of adults with diabetes who had a foot examination in past year	2001	66.3	1.18a	1.18b
Percent of adults with diabetes who had an influenza immunization in past year	2001	56.5	1.19a	1.19b
Percent of adults with diagnosed diabetes with HbA1c level < 7.0 % (optimal);	1999-2000	38.30	1.20	xxx
> 9 % (poor control)	1999-2000	28.60		
Percent of adults with diagnosed diabetes with most recent LDL-cholesterol level < 130 mg/dL(minimally acceptable);	1999-2000	60	1.21	xxx
<100 mg/dL (optimal)	1999-2000	32.9		
Percent of adults with diagnosed diabetes with most recent blood pressure <140/90 mm/Hg	1999-2000	59.3	1.22	xxx
Hospital admissions for uncontrolled diabetes per 100,000 population	2001	26.822	1.23a	1.23b
Hospital admissions for short term complications of diabetes per 100,000 population	2001	52.367	1.24a	1.24b
Hospital admissions for long term complications of diabetes per 100,000 population	2001	117.098	1.25a	1.25b
Hospital admissions for lower extremity amputations in patients with diabetes per 100,000 population	1999-2001	5.6	1.26a	1.26b

Note: See Tables Appendix for national and State tables listed above.

References

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End Stage Renal Disease

Importance and Measures

End stage renal disease (ESRD) is the complete or nearly complete shutdown of kidney functions requiring lifetime renal replacement therapy (either dialysis or kidney transplantation).

Prevalence and Incidence

- Over 400,000 people have ESRD in the United States.
- Almost 100,000 new ESRD patients begin renal replacement therapy each year, and the disease is on the rise.
- It is estimated that by 2030, there will be approximately 2.2 million ESRD patients in the Nation.[1]
- Diabetes is the most common cause of ESRD, and it is expected to surpass all other causes combined in terms of ESRD incidence by 2006 and of ESRD prevalence by 2018.[2]

Morbidity and Mortality

- Without treatment, ESRD is fatal. Even with dialysis treatment, 20% of ESRD patients die yearly.
- Most ESRD patients are on hemodialysis at a dialysis center 3 days a week, which seriously affects their quality of life.

Cost

- Expenditures for ESRD totaled almost $23 billion in 2001 (Medicare and non-Medicare).
- According to the Medicare program, ESRD expenditures totaled over $15 billion, 6.4% of the total Medicare budget in 2001.[1]

Measures

The NHQR includes six measures to assess the quality of care provided to renal dialysis patients. Two measures are highlighted in this section:

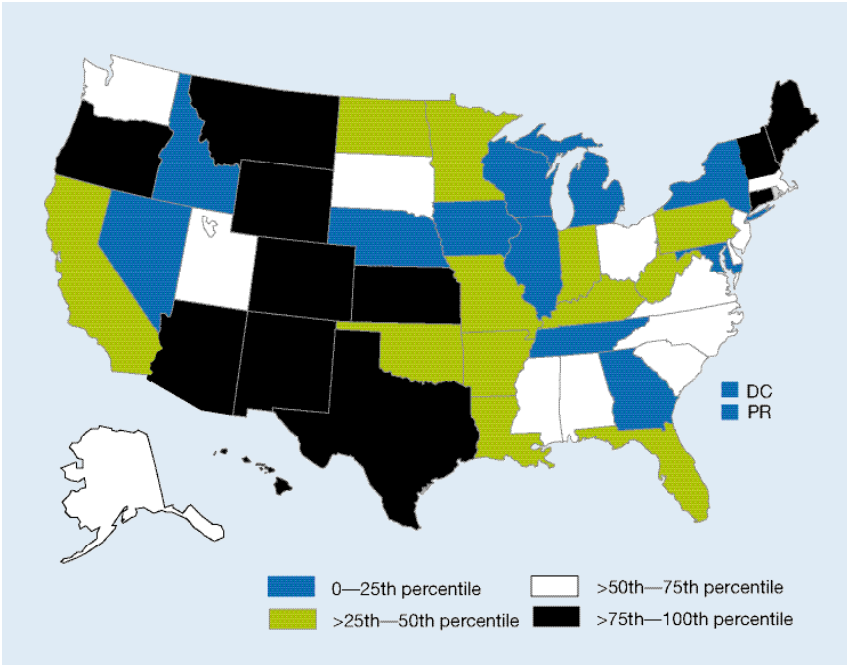
- Adequacy of hemodialysis, as measured by patient's urea reduction ratio (URR)
- Percent of hemodialysis patients using arteriovenous fistulas (AVFs) for vascular access

Findings

Adequacy of Hemodialysis

The adequacy of dialysis is measured by the percent of hemodialysis patients with a urea reduction ratio equal to or greater than 65; this measure indicates how well urea, a waste product in the blood, is eliminated by the artificial kidney. The first NHQR reported that 88.6% of in-center hemodialysis patients were receiving adequate dialysis as measured by urea reduction ratio of 65 or greater.

Figure 2.7. State variation in percent of hemodialysis patients with urea reduction ratio of 65 or greater



Source: University of Michigan Kidney Epidemiology and Cost Center, 2002

Note: Values for quartiles are: 0-25th percentile=85.79%-88.71%; >25th-50th percentile=88.82%-90.38%; >50th-75th percentile=90.49%-92.43%; >75th-100th percentile=92.94%-96.04%.

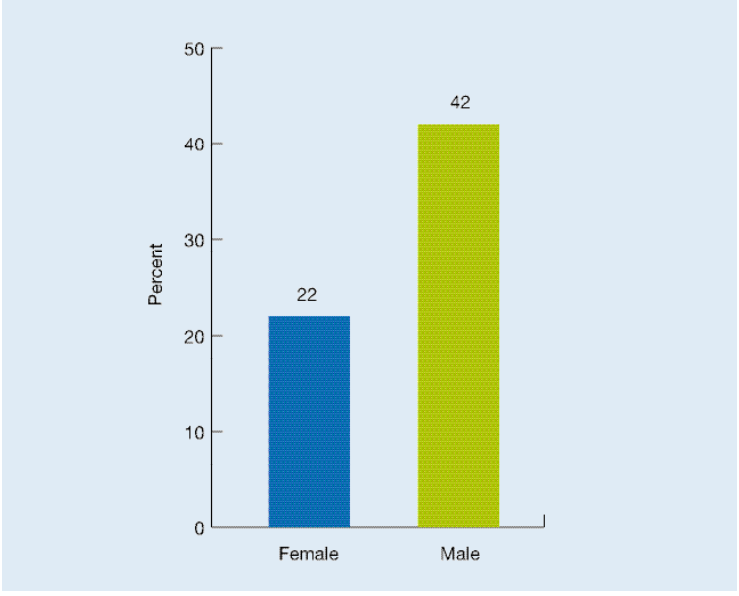
- Variation among the States for urea reduction ratio of 65 or greater in hemodialysis patients ranged from 86% to 96% (Figure 2.7).
- Performance on this measure has increased from 74% in 1996 to 90.1% in 2002 (University of Michigan Kidney Epidemiology and Cost Center, 2003).
- In 2002, hemodialysis adequacy was greater for females than males: 81% of males vs. 91% of females had URR of 65 or greater.

Use of Arteriovenous Fistulas for Vascular Access

Vascular access is a way to reach the blood vessels so that harmful urea can be removed from the blood. There are three general types of vascular access devices: fistulas, grafts, or catheters. Arteriovenous vascular fistula access is the preferred type of access for most renal dialysis patients. Vascular access is measured by the percentage of hemodialysis patients who dialyze using an AVF as their primary vascular access type.

Vascular access devices provide routine access to the blood stream for hemodialysis treatment. The National Kidney Foundation, in its Kidney Disease Outcomes Quality Initiative Clinical Practice Guidelines for Vascular Access, recommends an AVF placement goal of 50% in all new patients, with ultimate AVF use rate of 40%.[3]

Figure 2.8. Percent of hemodialysis patients using arteriovenous fistulas for vascular access



Source: CMS ESRD Clinical Performance Measures Project, 2002.

- Among 8,487 adult, in-center hemodialysis patients, 33% were dialyzed through a fistula (ESRD Clinical Performance Measures Project, 2003). This is an increase over 2000 when 27% used fistulas for dialysis.[3]
- Men were nearly twice as likely as women to be dialyzed with AVFs. Use of arteriovenous fistulas for 2002 was 42% for males and 22% for females (Figure 2.8). Males have exceeded the recommended target use rate.

List of Measures: End Stage Renal Disease

Measure	Year	National estimate	National table number	State table number
Management of end stage renal disease:				
Percent of dialysis patients registered on waiting list for transplantation	2001	14.83	1.27a	1.27b
Percent of patients with treated chronic kidney failure who receive a transplant within 3 years of renal failure	1998	19.35	1.28a	1.28b
Percent of hemodialysis patients with URR 65 orgreater	2002	86	1.29a	1.29b
Percent of patients with hematocrit 33 or greater or hemoglobin 11 or greater	2002	79	1.30a	1.30b
Patient survival rate	2001	98	xxx	1.31
Use of arteriovenous fistulas - New hemodialysis patients (age 20 years and over)	2002	33	1.32	xxx

Note: See Tables Appendix for national and State tables listed above.

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Heart Disease

Importance and Measures

Heart, or cardiovascular, disease is a collection of diseases of the heart and blood vessels that includes heart attack, stroke, and heart failure.

Prevalence and Incidence

- Sixty-four million Americans live with heart disease—almost one-fourth of the U.S. population.[1]

Morbidity and Mortality

- Heart disease, along with other cardiovascular disease and stroke, causes more American deaths among men, women, and most racial and ethnic groups than any other disease.[2, 3] In addition there is a significant State variation in the death rate for both heart disease and stroke.[4]
- Heart failure affects 2 to 3 million Americans. It affects 5% of people over age 75, with 400,000 new cases of heart failure each year.[5] The death rate from heart failure has more than doubled from 1972 to 2002, while the death rate from other cardiovascular diseases dropped by 56% during the same period.[4]
- Half of the deaths from heart attack occur before a person reaches a hospital.[6]

Cost

The cost of heart disease and stroke in the United States is projected to be $368 billion in 2004,[1] including health care expenditures and lost productivity from death and disability.

Measures

The NHQR tracks several quality measures for preventing and treating heart disease, including screening and management of cholesterol and hypertension (high blood pressure) and treatment of heart attack and acute heart failure.[i] Measures highlighted in this section include:

- Awareness, treatment, and control of cholesterol
- Administration of beta-blockers to heart attack patients
- Administration of ACE inhibitors to heart failure patients

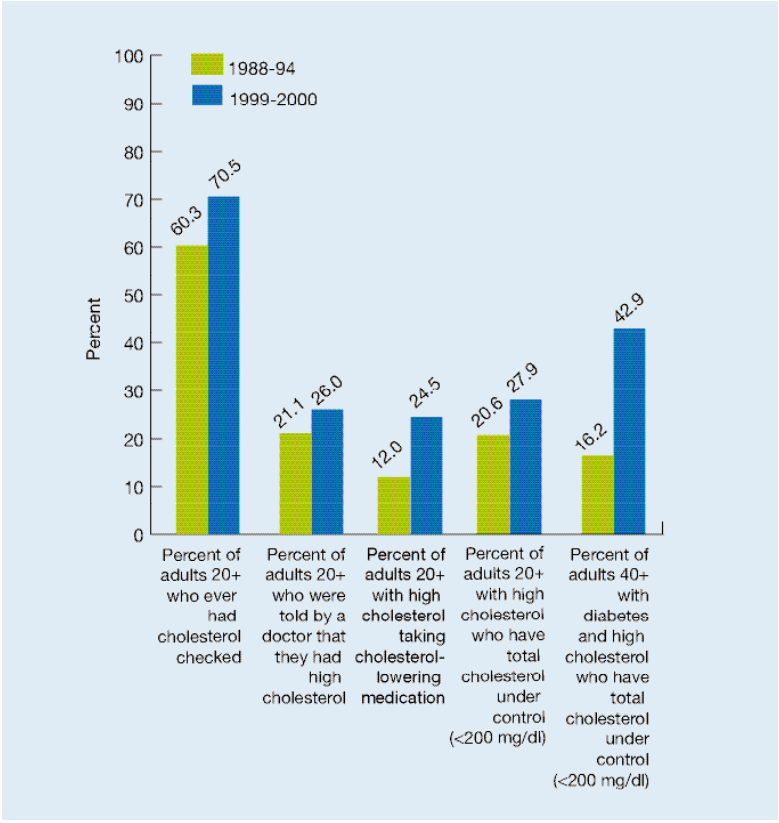
[i] Note that the 2003 NHQR tracks screening for high blood pressure using the National Health Interview Survey (NHIS). Data on this measure from NHIS are not available for the 2004 NHQR. In order to track this important measure, the 2004 NHQR uses NHANES data. Further details on the data sources are contained in the Measure Specifications Appendix.

Findings

Awareness, Treatment, and Control of Cholesterol

High blood cholesterol is an important risk for heart disease. The major culprit is LDL cholesterol which makes up 60%-70% of the total cholesterol. When elevated, cholesterol, a fat-like substance, builds up in the walls of the arteries and causes them to narrow, and slow down or block the flow of needed blood and oxygen to the heart. High cholesterol is one of the major risk factors for heart attacks.

Figure 2.9. Cholesterol screening, awareness and control, 1988-94 and 1999-2000



Source: National Health and Nutrition Examination Survey, 1988-94 and 1999-2000.

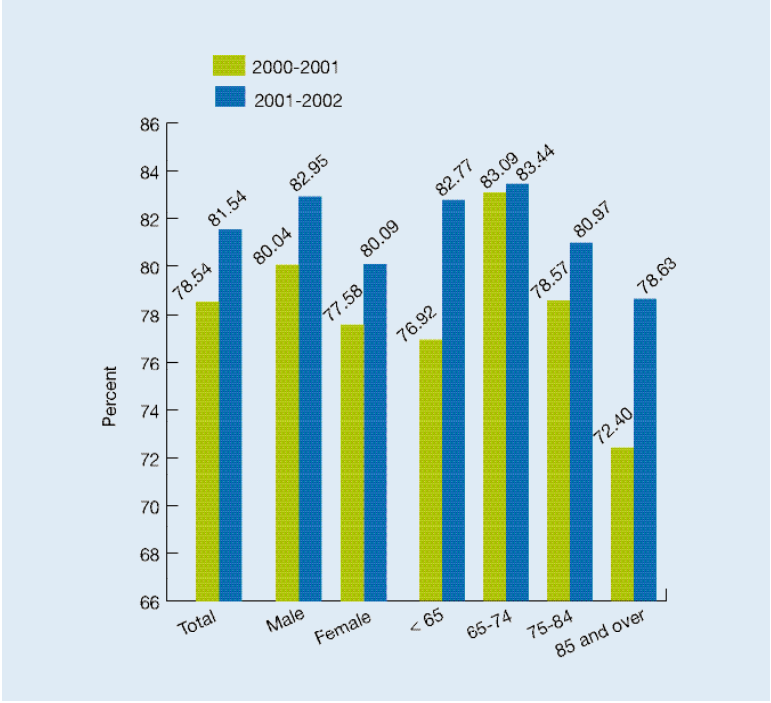
Note: Percentages are age adjusted. Data on cholesterol screening are not available from the National Health Interview Survey for the 2004 NHQR. The above measures from NHANES have been included as supplemental measures to the 2004 NHQR to allow reporting on cholesterol screening.

- Progress has been made in raising awareness of the importance of cholesterol screening and in patients' knowledge of their own cholesterol levels between 1988-94 and 1999-2000.
- In addition, more adults with high cholesterol are taking medication to help control it and more adults with hypertension actually have their cholesterol under control.
- Additional progress has been made in addressing heart disease risk factors for patients with other conditions. For example, the percent of patients with diabetes and high cholesterol who have their cholesterol under control has increased over 2.5 times.
- However, still more than three-fourths of adults with high cholesterol are not taking any medication for their condition and nearly three-quarters of adults with high cholesterol do not have it under control (Figure 2.9).

Administration of Beta-Blockers to Heart Attack Patients

For those people who get to the hospital in time, treatments for heart attack (acute myocardial infarction, or AMI) and heart failure that are based on scientific evidence and knowledge of contraindications are crucial in saving lives and preventing disability.[7, 8] Beta-blockers protect the heart by slowing the heart and helping the heartuse less energy to pump blood.

Figure 2.10. Percent of Medicare AMI patients with a beta-blocker prescribed when leaving hospital, 2000-2001 and 2001-2002



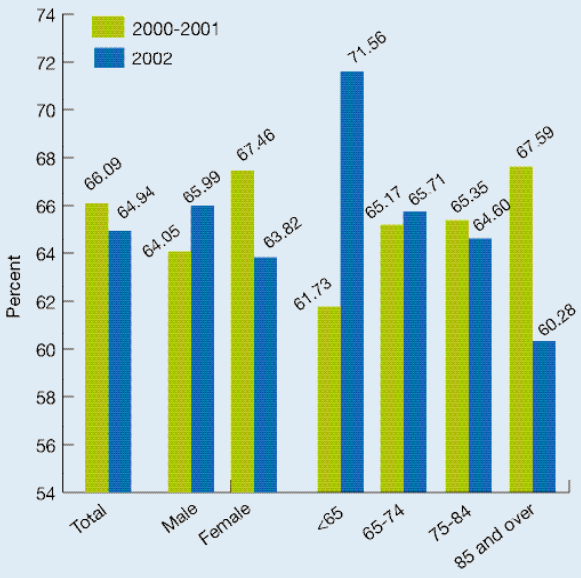
Source: Centers for Medicare & Medicaid Services, Medicare Quality Improvement Organization Program.

- The total percentage of patients receiving beta-blockers at discharge improved from 78.54% in 2000-2001 to 81.54% in 2001-2002 (Figure 2.10).
- The percentages of men and women receiving beta-blockers at discharge improved during 2000-2002, but the lower rates for women persisted.
- The rates for patients under age 65 and age 75 and older improved but the rate for patients ages 65 to 74 remained the same.

Administration of ACE Inhibitors to Heart Failure Patients

Generally, when an individual has clinical heart failure, the left ventricle—the strongest pumping muscle of the heart—is not functioning adequately. A type of medication called an acetyl-cholinesterase (or ACE) inhibitor has been found to improve survival and slow or prevent further loss of the heart's pumping ability.

Figure 2.11. Percent of acute heart failure Medicare patients with LV systolic dysfunction who were prescribed ACE inhibitor when leaving hospital, 2000-2001 and 2002



Source: Centers for Medicare & Medicaid Services, Medicare Quality Improvement Organization Program.

- The percentage of heart failure patients prescribed ACE inhibitors when leaving the hospital decreased over the 2000-2002 period (Figure 2.11).
- The percentage of women leaving the hospital with prescriptions for ACE inhibitors also decreased and the lower rates for women persisted, even as the rates for men improved.
- The percentage of patients prescribed ACE inhibitors decreased for patients age 75 and older during 2000-2002. Patients age 74 and younger have higher percentages than patients in the older age groups, with a marked improvement for patients less than 65 years of age.

List of Measures: Heart Disease

Measure	Year	National estimate	National table number	State table number
Screening for high blood pressure:				
Percent of people age 18 and over who have had blood pressure measured within preceding 2 years and can state whether their blood pressure is normal or high	1998	90.1	1.33	xxx
Screening for high cholesterol:				
Percent of adults 18 and over receiving cholesterol measurement within 5 years	1998	67.0	1.34a	1.34b
Counseling on risk factors:				
Percent of smokers receiving advice to quit smoking	2001	60.9	1.35a	1.35b
Treatment of acute myocardial infarction (AMI):				
Percent of AMI patients administered aspirin within 24 hours of admission	2002	85.34	1.36a	1.36b
Percent of AMI patients with aspirin prescribed at discharge	2002	87.45	1.37a	1.37b
Percent of AMI patients administered beta-blocker within 24 hours of admission	2002	76.26	1.38a	1.38b
Percent of AMI patients with beta-blocker prescribed at discharge	2002	81.54	1.39a	1.39b
Percent of AMI patients with left ventricular systolic dysfunction prescribed ACE inhibitor at discharge	2002	66.82	1.40a	1.40b
Percent of AMI patients given smoking cessation counseling while hospitalized	2002	49.52	1.41a	1.41b
Median time to thrombolysis. Time from arrival to initiation of a thrombolytic agent in patients with ST segment elevation or left bundle branch block (LBBB) on the electrocardiogram (ECG) performed closest to hospital arrival time	2001	47	1.42a	1.42b
Median time to PTCA. Median time from arrival to percutaneous transluminal coronary angioplasty (PTCA) in patients with ST segment elevation or left bundle branch block (LBBB) on the electrocardiogram (ECG) performed closest to hospital arrival time	2001	187.5	1.43a	1.43b
Treatment of acute heart failure:				
Percent of heart failure patients having evaluation of left ventricular ejection fraction	2002	76.04	1.44a	1.44b
Percent of heart failure patients with left ventricular systolic dysfunction prescribed ACE inhibitor at discharge	2002	64.94	1.45a	1.45b
Management of hypertension:				
Percent of people with hypertension who have blood pressure under control	1999-2000	26.8	1.46	xxx

List of Measures: Heart Disease *(continued)*

Measure	Year	National estimate	National table number	State table number
Management of CHF:				
Hospital admissions for congestive heart failure (CHF)	2001	3.5	1.47a	1.47b
Heart disease treatment:				
Pediatric heart surgery mortality rate (number of deaths per 1,000 heart surgeries in patients under age 18 years)	2001	49.766	1.48	xxx
Abdominal aortic aneurysm (AAA) repair mortality rate (number of deaths per 1,000 AAA repairs)	2001	100.687	1.49	xxx
Coronary artery bypass graft (CABG) mortality rate (number of deaths per 1,000 CABG procedures)	2001	32.998	1.50	xxx
Percutaneous transluminal coronary angioplasty (PTCA) mortality rate (number of deaths per 1,000 PTCAs)	2001	14.423	1.51	xxx
Acute myocardial infarction (AMI) mortality rate (number of deaths per 1,000 discharges for AMI)	2001	99.051	1.52	xxx
Congestive heart failure (CHF) mortality rate (number of deaths per 1,000 discharges for CHF)	2001	44.698	1.53	xxx

Note: See Tables Appendix for national and State tables listed above.

Supplemental Measures Related to Heart Disease

Measure	Year	National estimate	National table number	State table number
Percent of adults 20 and over who ever had cholesterol checked	2000	70.5	xxx	xxx
Percent of adults 20 and over who were ever told by a doctor that they had high cholesterol	2000	26.0	xxx	xxx
Percent of adults 20 and over with high cholesterol taking cholesterol-lowering medication	2000	24.5	xxx	xxx
Percent of adults 20 and over with high cholesterol who have total cholesterol under control (<200 mg/dl)	2000	27.9	xxx	xxx
Percent of adults 40 and over with diabetes and high cholesterol who have total cholesterol under control (<200 mg/dl)	2000	42.9	xxx	xxx

Note: Data on cholesterol screening are not available from the National Health Interview Survey for the 2004 NHQR. The above measures from the National Health and Nutrition Examination Survey have been included as supplemental measures to the 2004 NHQR to allow reporting on cholesterol screening.

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HIV and AIDS

Importance and Measures

Human immunodeficiency virus (HIV) causes the progressive deterioration of the body's immune system, which, if untreated, eventually leads to a condition known as acquired immune deficiency syndrome (AIDS). Since 1996, new antiretroviral treatments using combinations of different antiretroviral drugs (known as highly active antiretroviral therapy, or HAART) have been used.

Prevalence and Incidence

- 877,275 adult and adolescent Americans have been diagnosed with AIDS through 2002.[1] Of these, 81.8% are male.[1]
- 9,300 children under the age of 13 have been diagnosed with AIDS.[1]
- The greatest numbers of AIDS cases have occurred in the age groups of 25-34 and 35-44 years, affecting 301,278 and 347,860 Americans, respectively.[1]

Morbidity and Mortality

- After years on the increase, the rate of HIV mortality began a decline in the mid-1990s.
- As of 2002, HIV was the seventh leading cause of death for Americans ages 15-24 and the fifth leading cause of death for Americans ages 25-44.[2]

Cost

- The total cost of treating HIV and AIDS patients in the United States is between $6.7 billion and $7.8 billion annually, or $20,000 to $24,700 per person with a diagnosed infection.[3, 4]
- More than half of adult AIDS patients and more than 90% of children with AIDS rely on Medicaid for coverage.[5] Combined Federal and State Medicaid expenditures for AIDS patients totaled $8.5 billion in fiscal year 2003.[6]

Measures

This report tracks two quality measures for HIV and AIDS:

- HIV-infection deaths per 100,000 population
- New AIDS cases per 100,000 population age 13 and over

The report also presents supplemental data on receipt of highly active anti-retroviral therapy (HAART), prophylaxis for *Pneumocystis pneumonia* (PCP), and prophylaxis for mycobacterium avium complex (MAC)[i] from the HIV Research Network. Providers in this network pool data and collaborate on research to provide policymakers and investigators with timely information about access to and cost, quality, and safety of HIV care as well as to share information and best practices.

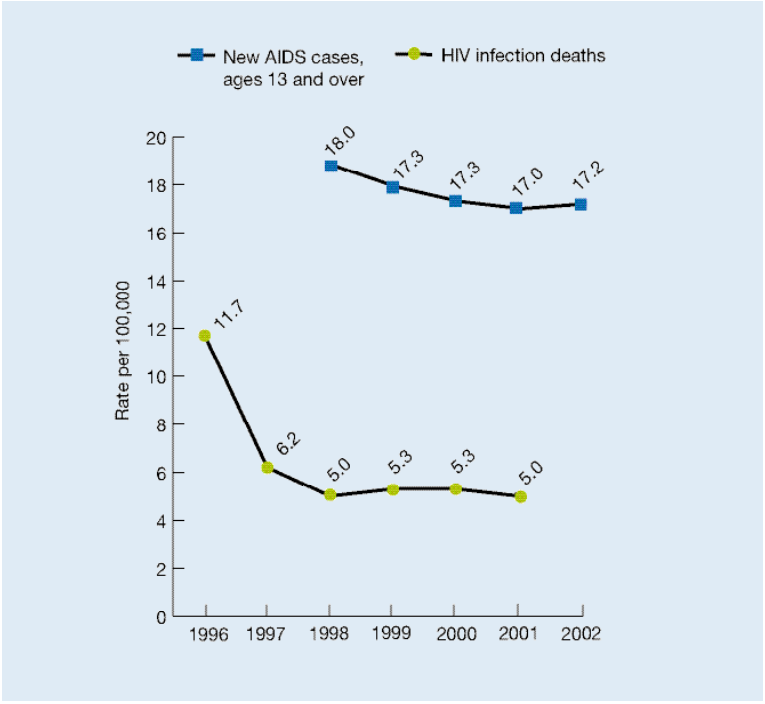
[i] It is recommended that persons with HIV infection receive prophylaxis for PCP when CD4 cells fall below 200 per cubic milliliter, and they should receive prophylaxis for MAC when CD4 cells reach 50.

Findings

HIV-Infection Deaths per 100,000 Population

Although a cure for HIV infection has not been identified, current drug therapies are sometimes able to reduce the amount of virus in an infected individual's body, resulting in better prognosis for an HIV patient today versus 10 years ago.

Figure 2.12. New AIDS cases and HIV infection deaths, per 100,000 population, 1996-2002



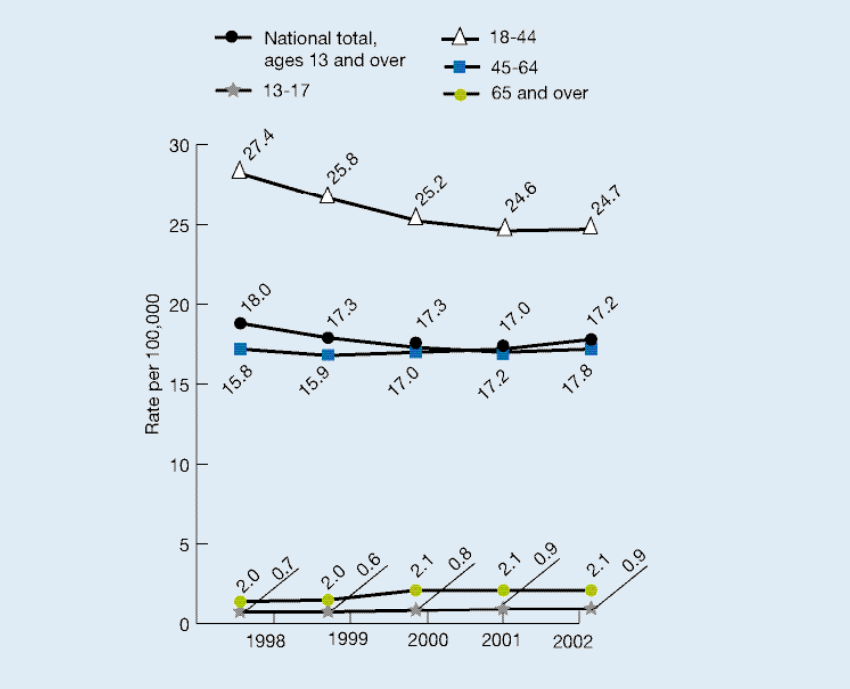
Source: Centers for Disease Control and Prevention, National Center for HIV, STD and TB Prevention, HIV/AIDS Reporting System; Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System - Mortality.

- Mortality rates due to AIDS have declined considerably since 1995. HIV deaths declined more than 57% from 1996 to 1998 (Figure 2.12).
- Although there was a decline in the rate of new AIDS cases between 1998 and 2001, the rate of HIV mortality stayed virtually the same during that time.

New AIDS Cases per 100,000 Population Age 13 and Older

Changes in HIV infection rates are a reflection of behavioral changes in at-risk individuals that may only partly be influenced by the health care system. However, individual and community programs have shown progress in changing care-seeking behaviors, and, if patients get appropriate treatment for HIV infection, the incidence of new cases may be reduced.

Figure 2.13. New AIDS cases by age group, 1998-2002



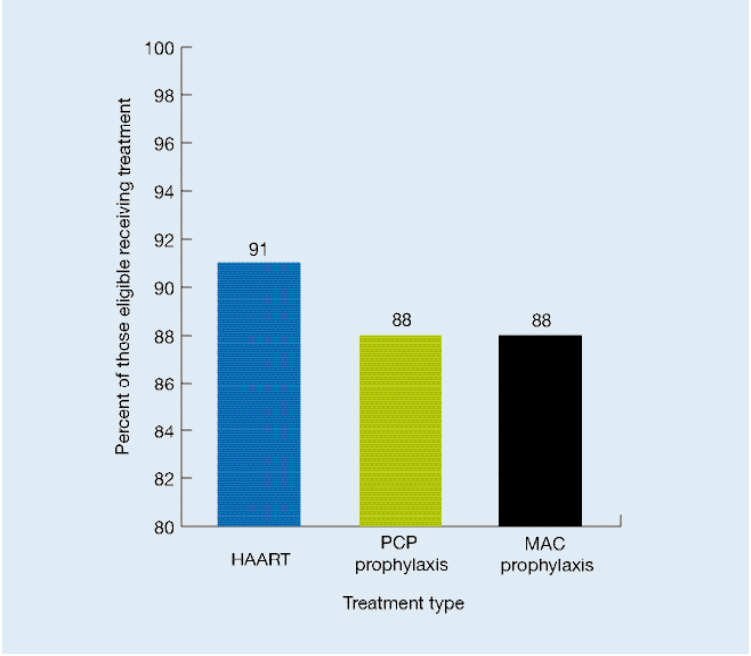
Source: Centers for Disease Control and Prevention, National Center for HIV, STD and TB Prevention, HIV/AIDS Reporting System.

- After declining nearly 5.6% between 1998 and 2001, the rate of new AIDS cases has leveled.
- New AIDS infection rates vary by age, with adults between 18 and 44 being infected at a rate that is 44% higher than the national rate of Americans age 13 and older (Figure 2.13).
- Black, non-Hispanic adults contract AIDS at a rate that is over four times higher (75.4 cases per 100,000) than the national average of 17.2 cases per 100,000 (see Tables Appendix, Table 1.54).

Receipt of HAART, Prophylaxis for PCP, and Prophylaxis for MAC

Receipt of these three treatments by eligible AIDS patients represents widely accepted standards for appropriate HIV care. Current national data do not reflect the extent to which these standards are being met; data from the HIV Research Network are presented below. (The Network is sponsored by AHRQ, the Substance Abuse and Mental Health Services Administration, the Health Resources and Services Administration, the Office of AIDS Research at the National Institutes of Health, and the Office of the Assistant Secretary for Planning and Evaluation, HHS.)

Figure 2.14. Percentage of eligible AIDS patients receiving recommended treatments, 2001



Source: HIV Research Network.

Note: Data from the HIV Research Network are not nationally representative of the level of care received by all Americans living with HIV. Participation in this network is voluntary, and network data only represent patients that are actually receiving care. Furthermore, data shown above are not representative of the HIV Research Network as a whole, because they represent only a subset of network sites that have the best quality data. (For more information on the HIV Research Network, see: http://www.ahrq.gov/data/hivnet.htm.)

- In 2001, 91% of eligible patients (two or more CD4 test results below 350) received HAART (Figure 2.14).
- Of those eligible (2,533 patients with at least two CD4 cell counts below 200), 88% received PCP prophylaxis.
- Of those eligible (754 patients with at least two CD4 cell counts below 50), 88% received MAC prophylaxis.

List of Measures: HIV and AIDS

Measure	Year	National estimate	National table number	State table number
AIDS prevention:				
New AIDS cases per 100,000 population (age 13 and over)	2002	17.2	1.54	xxx
Management of HIV/AIDS:				
HIV-infection deaths per 100,000 population	2001	5.0	1.55a	1.55b

Note: See Tables Appendix for national and State tables listed above.

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Maternal and Child Health

Importance and Measures

In 2002, there were over 4 million babies born in the United States with an average life expectancy of 77.4 years.[1, 2] In 2000, children under age 18 comprised 26% of the U.S. population—72.3 million people.[3]

Maternal Morbidity and Mortality

- During pregnancy and delivery, women are at risk for high blood pressure, gestational diabetes, and other disorders.
- Maternal mortality (death during delivery or soon afterward) is rare in the United States. In 2001, there were only 399 reported cases of maternal mortality.[4]

Child Morbidity and Mortality

- Infants (children younger than 1 year of age) had a higher death rate than any other age group under age 55.
- Accidents were the leading cause of death for children and youth ages 1-24; leading causes of death for young people ages 15-24 also included homicide and suicide.[4]
- In 2001, from 12% to 19.6% of children were identified as having a special health care need—a chronic condition with a functional limitation or other consequence.[5]
- Among the most highly prevalent chronic conditions of childhood in 2002 were asthma (12% of children), respiratory allergies (12%), learning disabilities (8% of children ages 3-17), and attention-deficit/hyperactivity disorder (7% of children 3 to 17).[6]
- Although not in itself a disease, overweight, if unchecked, can lead to other diseases (e.g., diabetes, cardiovascular disease) during childhood and in adulthood. Overweight among children has increased over time. In 2000, 15.3% of children ages 6-11 were overweight, compared to 11% in 1988-94.[7]

Cost

- Children ages 0-17 accounted for about 10% of total national health care expenditures in 2001, or about $73.4 billion.
- Among all children with expenditures, children with special health care needs (CSHCN) account for a disproportionate percentage of health care expenditures.[8, 9]

Measures

The NHQR tracks several measures related to maternal and child health care throughout the report. This section highlights measures in three areas:

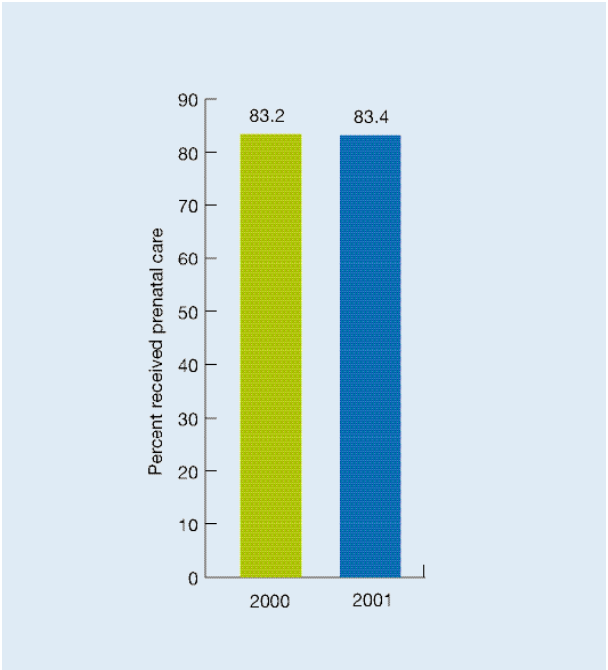
- Maternity care, including prenatal care and obstetric trauma
- Clinical preventive services to prevent overweight in children
- Experiences of care for children with and without special health care needs

Findings

Maternity Care

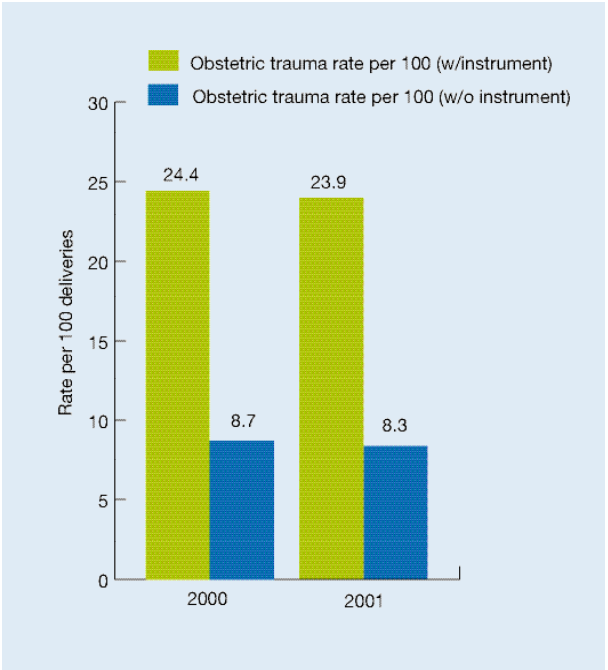
Prenatal care is a preventive service intended to identify and manage risk factors in pregnant women and their unborn children in order to improve the chances of a healthy pregnancy and delivery. Prenatal care is recommended during the first trimester and throughout pregnancy. Obstetric trauma is a Patient Safety Indicator that measures injury—primarily third and fourth degree lacerations—to the mother during delivery. It is tracked for vaginal deliveries with and without use of instruments.

Figure 2.15. Percent of women who delivered live births and who received prenatal care in the first trimester of pregnancy, 2000 and 2001



Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System-Natality, 2000 and 2001.

Figure 2.16. Obstetric trauma rate per 100 vaginal deliveries, with and without instruments, 2000 and 2001



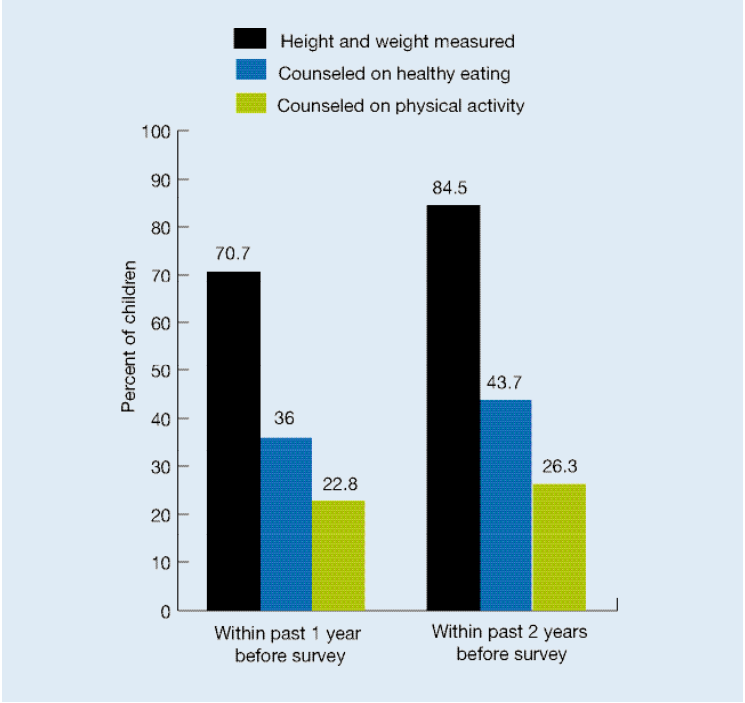
Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2000 and 2001.

- In 2001, 83% of pregnant women received early prenatal care, remaining at the same high level as 2000 (Figure 2.15).
- The rates of obstetric trauma remained at about 8% for women delivering vaginally without instrument assistance and 24% for women with instrument-assisted vaginal deliveries (Figure 2.16).

Clinical Preventive Services To Prevent Overweight in Children

In 1996, the U.S. Preventive Services Task Force recommended that clinicians measure children's height and weight and provide counseling about healthy eating and engaging in physical activity.[10]

Figure 2.17. Percent of children who had preventive care related to obesity prevention: height and weight measurement, counseling on physical activity, and counseling on healthy eating by doctors or other health care providers within 1 year and within 2 years of survey, 2001



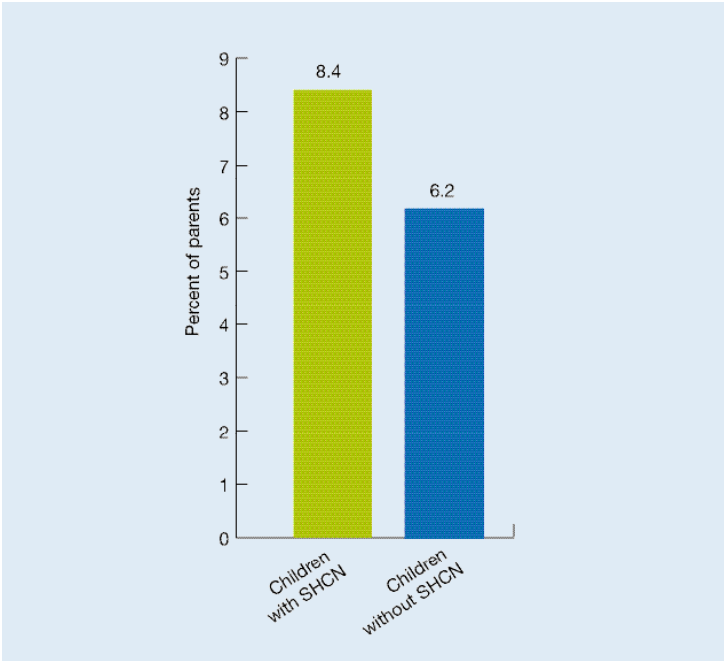
Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2001.

- In 2001, 70.7% of children had both their height and weight measured within the last year by doctors or other health care professionals, according to parents' reports; 84.5% of children had height and weight measured within the last 2 years (Figure 2.17).
- In 2001, 36% of children were counseled on healthy eating within the year before the survey; 43.7% had been counseled on healthy eating within the last 2 years.
- In 2001, 22.8% of children got counseling about the value of physical activity from doctors or other health professionals within the last year; 26.3% got counseling about physical activity within the last 2 years.

Experiences of Care for Children With and Without Special Health Care Needs

High quality pediatric care can be assessed on a number of factors, including parents' perceptions of the provider's ability to listen carefully, explain clearly, show respect, and spend enough time with the patient. These aspects of health care are particularly important for children with special health care needs.

Figure 2.18. Percent of children with and without special health care needs with a doctor visit in past year whose parents reported their child's provider sometimes or never listened carefully, 2001



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2001.

- Respondents for CSHCN more often reported that the child's provider sometimes or never listened carefully to them than those of other children—8.4% versus 6.2%, respectively (Figure 2.18).

List of Measures: Maternal and Child Health

Measure	Year	National estimate	National table number	State table number
Maternity care:				
Percent of pregnant women receiving prenatal care in first trimester	2001	83.4	1.56a	1.56b
Percent of live-born infants with low and very low birthweight (less than 2,500 grams, less than 1,500 grams)	2001 2001	7.7 (<2,500 g) 1.4 (<1,500 g)	1.57a 1.57b	1.57c 1.57d
Infant mortality per 1,000 live births	2001	6.8	1.58a	1.58b
Maternal deaths per 100,000 live births	2001	9.9	1.59a	1.59b
Immunization, childhood:				
Percent of children 19-35 months who received all recommended vaccines	2002	74.8	1.60a	1.60b
Immunization, adolescent:				
Percent of adolescents (age 13-15) reported to have received 3 or more doses of hepatitis B vaccine	2001	74.4	1.61	xxx
Percent of adolescents (age 13-15) reported to have received 2 or more doses of MMR vaccine	2001	93.0	1.62	xxx
Percent of adolescents (age 13-15) reported to have received 1 or more doses of tetanus-diphtheria booster	2001	92.0	1.63	xxx
Percent of adolescents (age 13-15) reported to have received 3 or more doses of varicella vaccine	2001	56.6	1.64	xxx
Childhood dental care:				
Percent of persons over 2 years who report dental visit in last year	2001	47.6	1.65	xxx
Treatment of pediatric gastroenteritis:				
Hospital admissions for pediatric gastroenteritis per 100,000 population less than 18 years of age	2001	106.289	1.66a	1.66b
Childhood preventive care:				
Percent of children under age 18 who had their height and weight measured by a doctor or other health provider	2001	90.3 (both) 70.7 (within 1 year) 84.5 (within 2 years)	1.67	xxx
Percent of children age 2-17 for whom a doctor or other health provider gave advice about amount and kind of physical activity	2001	28.0 (ever) 22.8 (within 1 year) 26.3 (within 2 years)	1.68	xxx
Percent of children age 2-17 for whom a doctor or other health provider gave advice about eating healthy	2001	47.7 (ever) 36.0 (within 1 year) 43.7 (within 2 years)	1.69	xxx
Percent of children age 3-6 whose vision was checked by a doctor or other health provider	2001	59.3	1.70	xxx
Percent of children under age 18 for whom a doctor or other health provider gave advice about how smoking in the house can be harmful	2001	42.8 (ever) 30.7 (within 1 year) 37.2 (within 2 years)	1.71	xxx

List of Measures: Maternal and Child Health *(continued)*

Measure	Year	National estimate	National table number	State table number
Percent of children under age 18 for whom a doctor or other health provider gave advice about using car safety restraints	2001	36.1 (ever) 26.4 (within 1 year) 30.7 (within 2 years)	1.72	xxx
Percent of children age 2-17 for whom a doctor or other health provider gave advice about using a helmet when riding a bicycle or motorcycle	2001	32.1 (ever) 23.6 (within 1 year) 28.1 (within 2 years)	1.73	xxx

Note: See Tables Appendix for national and State tables listed above.

Other Measures Related to Maternal and Child Health in the NHQR Measure Set

Measure	Year	National estimate	National table number	State table number
Cancer:				
Cancer deaths per 100,000 persons per year for all cancers (ages 0-17)	2001	2.6	1.8a	1.8b
End stage renal disease:				
Percent of dialysis patients registered on waiting list for transplantation (ages 0-17)	2001	34.41	1.27a	xxx
Percent of patients with treated chronic kidney failure who receive a transplant within 3 years of renal failure (ages 0-17)	1998	70.95	1.28a	xxx
HIV and AIDS:				
New AIDS cases per 100,000 population (ages 13-17)	2002	0.9	1.54	xxx
HIV-infection deaths per 100,000 population (ages 0-17)	2001	0.1	1.55a	xxx
Mental health:				
Deaths due to suicide per 100,000 population (ages 0-17)	2001	1.4	1.77a	1.77b
Respiratory diseases:				
Rate antibiotic prescribed at visit with diagnosis of common cold by selected characteristics, United States, per 10,000 visits (ages 0-17)	2000-01	333.79	1.91	xxx
Hospital admissions for pediatric asthma (under age 18)	2001	26.2	1.93a	1.93b
Patient safety:				
Birth trauma to neonate, per 1,000 live births	2001	7.358	2.1	xxx
Deaths per 1,000 admissions in low mortality DRGs (ages 0-17), some exclusions	2001	0.628	2.2	xxx
Failure to rescue or deaths per 1,000 discharges having developed specified complications of care during hospitalization (excluding patients transferred in or out, patients admitted from long-term care facilities, neonates, and patients over 74 years old), (ages 0-17)	2001	136.630	2.3	xxx
Transfusion reactions per 1,000 discharges (excluding neonates) (ages 0-17)	2001	0.007	2.4a	xxx
Transfusion reactions per 100,000 population (excluding neonates) (ages 0-17)	2001	0.035	2.4b	xxx
Foreign body left in body during procedure (excluding neonates) (ages 0-17)	2001	0.058	2.5a	xxx
Foreign body left in body during procedure per 100,000 population (excluding neonates) (ages 0-17)	2001	0.212	2.5b	xxx
Complications of anesthesia per 1,000 surgical discharges (ages 0-17)	2001	0.948	2.8	xxx

Other Measures Related to Maternal and Child Health in the NHQR Measure Set *(continued)*

Measure	Year	National estimate	National table number	State table number
Decubitus ulcers per 1,000 discharges of length 5 or more days (excluding obstetrical patients and others) (ages 0-17)	2001	4.977	2.9	xxx
Iatrogenic pneumothorax per 1,000 discharges (excluding neonates and obstetric admissions, others) (ages 0-17)	2001	0.465	2.10a	xxx
Iatrogenic pneumothorax per 100,000 population (excluding neonates and obstetric admissions, others) (0-17)	2001	0.746	2.10b	xxx
Selected infections due to medical care per 1,000 discharges (ages 0-17)	2001	2.171	2.11a	xxx
Selected infections due to medical care per 100,000 population (ages 0-17)	2001	8.154	2.11b	xxx
Postoperative hemorrhage or hematoma per 1,000 surgical discharges (excluding obstetric admissions) (ages 0-17)	2001	1.422	2.13	xxx
Postoperative physiologic and metabolic derangements per 1,000 elective surgical discharges (excluding obstetric admissions, others) (ages 0-17)	2001	0.800	2.14	xxx
Postoperative respiratory failure per 1,000 elective surgical discharges (excluding obstetric conditions, others) (ages 0-17)	2001	1.753	2.15	xxx
Postoperative pulmonary embolism or deep vein thrombosis per 1,000 surgical discharges (excluding obstetrics, others) (ages 0-17)	2001	0.155	2.16	xxx
Postoperative sepsis per 1,000 elective surgery discharges of longer than 3 days (excluding obstetric conditions, others) (ages 0-17)	2001	3.227	2.17	xxx
Accidental puncture or laceration during procedures per 1,000 discharges (excluding obstetric admissions) (ages 0-17)	2001	2.107	2.18a	xxx
Accidental puncture or laceration during procedures per 100,000 population (excluding obstetric admissions) (ages 0-17)	2001	2.998	2.18b	xxx
Reclosure of postoperative disruption of abdominal wall (postoperative abdominal wound dehiscence) per 1,000 abdominopelvic surgery discharges (excluding obstetric conditions) (ages 0-17)	2001	1.534	2.19a	xxx
Reclosure of postoperative disruption of abdominal wall (postoperative abdominal wound dehiscence) per 100,000 population (excluding obstetrics) (ages 0-17)	2001	0.202	2.19b	xxx
Obstetric trauma – vaginal with instrument	2001	24.0	2.20	xxx
Obstetric trauma – vaginal without instrument	2001	8.26	2.21	xxx
Obstetric trauma - cesarean delivery	2001	5.715	2.22	xxx

Other Measures Related to Maternal and Child Health in the NHQR Measure Set *(continued)*

Measure	Year	National estimate	National table number	State table number
Ventilator-associated pneumonia in infants weighing ≤ 1,000 grams at birth in intensive care, per 1,000 days of use	2002	3.1	2.25	xxx
Central line-associated bloodstream infection in infants weighing 1,000 grams or less at birth in intensive care, per 1,000 days of use	2001	10.7	2.7	xxx
Timeliness:				
Percent of persons who report that they have a usual source of medical care, by place of care (ages 0-17)	2001	94.2	3.1a	xxx
Among children under age 18 who had appointments reported for routine health care in the last 12 months, percent distribution of how often they got an appointment as soon as wanted	2001	69.7 (ages 0-5 always) 66.2 (ages 6-17 always)	3.4a	3.4b 3.4c
Among children under age 18 who had appointments reported for an illness or injury in the last 12 months, percent distribution of how often they got an appointment as soon as wanted	2001 2001	77.9 (ages 0-5 always) 76.3 (ages 6-17 always)	3.6a	3.6b 3.6c
ED visits: Percent ED visits where patient was admitted to the hospital or transferred to other facility whose ED visit was greater than or equal to 6 hours (ages 0-17)	2000-01	19.374	3.7	xxx
ED visits: Percent of patients who left without being seen	2000-01	1.745	3.8	xxx
Patient centeredness:				
Among children under age 18 who had a doctor's office or clinic visit reported in the last 12 months, percent distribution of how often their health care providers listened carefully to their parents	2001	8.4% (sometimes/ never -CSHCN) 6.2% (sometimes/ never-Children w/o SHCN)	4.2a	xxx
Among children under age 18 who had a doctor's office or clinic visit in the last 12 months, percent distribution of how often their health providers spent enough time with them and their parents	2001	67.9 (ages 0-5 always) 67.6 (ages 6-17 always)	4.8a	xxx
Overall measures:				
Among children under age 18 who had a doctor's office or clinic visit in the last 12 months, percent of parents giving a best rating for health care received	2001	87.0 (ages 0-5) 71.0 (ages 6-17)	5.2a	5.2b

Note: See Tables Appendix for national and State tables listed above.

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Mental Health

Importance and Measures

Prevalence and Incidence

- Depression affects about 9.5% of Americans—19 million people—in a given year.[1]

Morbidity and Mortality

- About 60% of people who commit suicide have had a mood disorder, including major depression, bipolar disorder, or dysthymia.[2]
- The World Health Organization estimates that depression will be the second leading cause of disability worldwide by 2020.[3]

Cost

- The financial costs of depression among the working population are estimated at over $43 billion per year.[4]

Measures

The NHQR tracks four measures for clinical depression, including two measures of appropriate antidepressant medication treatment, one measure of practitioner contact,[i] and the national suicide rate. This section highlights both measures of medication treatment quality for adults:

- Receipt of antidepressant medication treatment during acute phase (i.e., first 3 months following initial diagnosis)
- Receipt of antidepressant medication treatment through continuation phase (6 months) of treatment

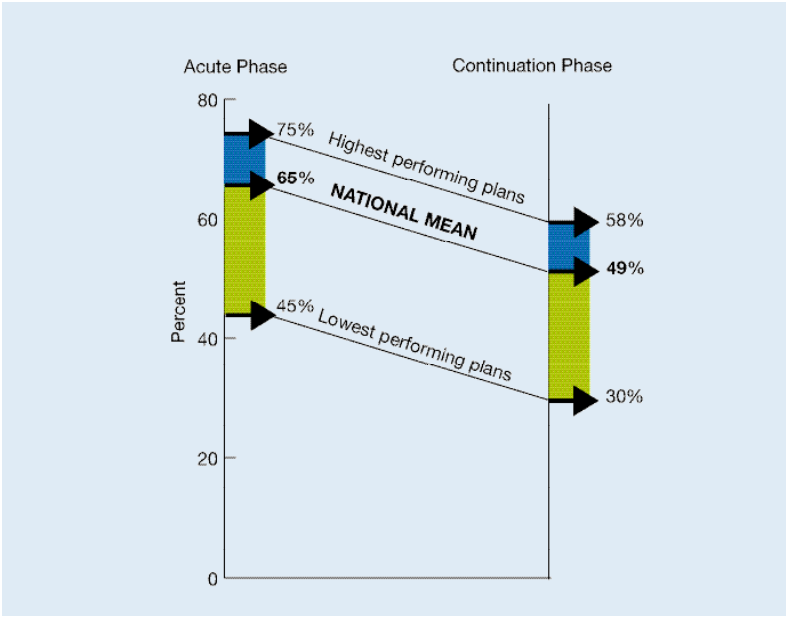
[i] This report does not focus on optimal practitioner contacts for medication management because the measure specifications are changing this year.

Findings

While there are major efforts developing nationally in developing comprehensive measures of mental health care quality, there remains some disagreement about the optimal measures of quality of care for mental health services. There is agreement about which antidepressant medications and psychological therapies are effective in treating depression and how medications should be prescribed and used for maximum benefit.

Appropriate Antidepressant Medication Treatment

Figure 2.19. Percent of adults diagnosed with depression who are prescribed antidepressant medication and remained on medication by treatment phase



Source: National Committee for Quality Assurance, 2003. The sample includes only participating managed care plans and may not be representive of all plans nationally.

Note: The rate is the weighted average of commercial, Medicare, and Medicaid managed care plans. The lowest performing plans are those in the first quartile of the sample; the highest performing plans are those in the fourth quartile. The mean rate of the plans in the quartile is reported in chart.

- Almost two-thirds of adults newly diagnosed with depression and treated with antidepressants remain on medication during the initial, acute phase of treatment.
- Less than half of adults newly diagnosed with depression and on antidepressants remain on the medication through the continuation phase, as recommended by experts.
- The mean rate for the continuation phase measure among the lowest performing plans is almost half that of the highest performing plans, 30% vs. 58% (Figure 2.19).

List of Measures: Mental Health

Measure	Year	National estimate	National table number	State table number
Treatment of depression:				
Percent of adults diagnosed with a new episode of depression who had optimal practitioner contacts for medication management during the acute treatment phase	2003	20.60	1.74	xxx
Percent of adults diagnosed with a new episode of depression and initiated on an antidepressant drug who received a continuous trial of medication treatment during the acute treatment phase	2003	65.10	1.75	xxx
Percent of adults diagnosed with a new episode of depression and initiated on an antidepressant drug who remained on an antidepressant medication through the continuation phase of treatment	2003	48.80	1.76	xxx
Deaths due to suicide per 100,000 population	2001	10.7	1.77a	1.77b

Note: See Tables Appendix for national and State tables listed above.

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Respiratory Diseases

Importance and Measures

Respiratory diseases comprise a broad category of illnesses, including influenza, pneumonia, asthma, upper respiratory infection, and tuberculosis.

Prevalence and Incidence

- Upper respiratory infections affect over 62 million people annually.[1]
- Approximately 5 million cases of pneumonia occur annually.[2]
- Between 22 million and 32 million Americans have asthma, and a disproportionate number of these are children.[3, 4]

Morbidity and Mortality

- Influenza and pneumonia together are the seventh leading cause of death in the Nation.[5]
- Pneumonia results in nearly 55 million days of restricted activity, 31.5 million bed days, and 1.3 million hospitalizations each year.[2]
- As many as one-third of children with private insurance and two-fifths of children covered by Medicaid do not receive a prescription to control their asthma.[6]

Cost

- Inpatient treatment for pneumonia alone amounts to over $7.5 billion annually.[7]
- Upper respiratory infections cost approximately $40 billion in direct health care costs and lost productivity.[8]
- Indirect and direct costs for asthma total between $11.3 billion and $14 billion, with direct costs of hospital care, physician services, and prescriptions as much as $9.4 billion.[9, 10]

Measures

This report tracks several quality measures for respiratory diseases, including management of upper respiratory tract infection and tuberculosis and immunizations for pneumonia. Two areas of measures are highlighted in this section:

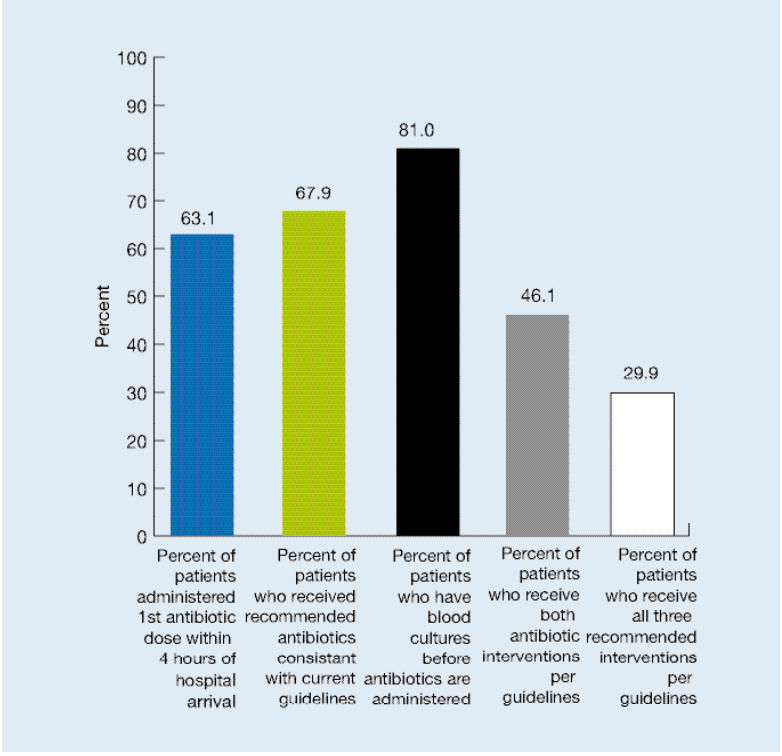
- Receipt of recommended interventions for pneumonia by the elderly
- Hospital admissions for pediatric asthma

Findings

Receipt of Recommended Interventions for Pneumonia by the Elderly

The Centers for Medicare & Medicaid Services (CMS) tracks a set of measures for quality of pneumonia care for hospitalized adults age 65 and older through the CMS Quality Improvement Organization (QIO) Program.

Figure 2.20. Percent of pneumonia patients 65 and older who had blood cultures before antibiotics, who received their initial dose of antibiotics within 4 hours of admission, and who received antibiotics consistent with current recommendations, 2002



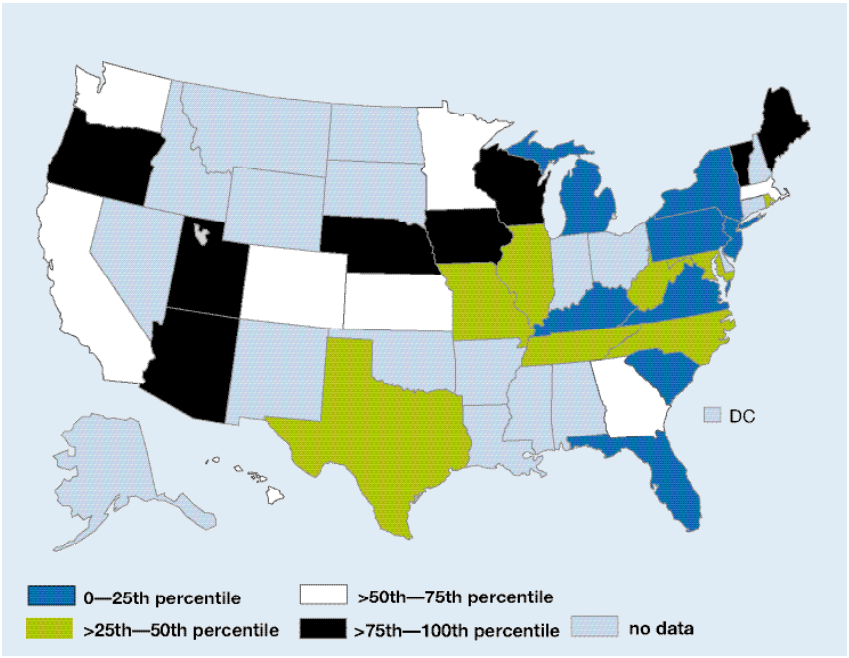
Source: Centers for Medicare & Medicaid Services, Quality Improvement Organization Program, 2002.

- The percentage of pneumonia discharges for patients 65 and older who had blood cultures before antibiotics was 81%; the percentage who received their initial dose of antibiotics within 4 hours of admission was 63.1%; and the percentage who received antibiotics consistent with current recommendations was 67.9% (Figure 2.20).
- The percentage of pneumonia discharges for patients age 65 and older who received all of the above interventions was 29.9%.

Hospital Admissions for Pediatric Asthma

Asthma can be effectively controlled over the long term with recommended medications. Preventing hospital admissions for asthma is one measure of successful management of asthma at the population level.

Figure 2.21. State variation in pediatric hospital admissions for asthma per 100,000 population, 2001



Source: Agency for Healthcare Research and Quality, HCUP State Inpatient Databases, 2001.

Note: Not all States are included. Values for quartiles are: 0-25th percentile= 221.4-315.3 admissions/100,00 population; >25th-50th percentile=187.3-220.9; >50th-75th percentile=125.6-176.6; >75th-100th percentile=66.3-120.6.

- Child asthma admission rates vary from 98 admissions per 100,000 population for the best performing quartile of States to 261.5 admissions per 100,000 population for the lowest performing quartile of States—a difference of 167% (Figure 2.21).
- While prevalence rates vary by age, admission rates nationally for children are more than twice those for adults—26.2 admissions for children per 100,000 population in 2001 vs. 12.5 admissions for adults per 100,000 population (National Hospital Discharge Survey, 2001; see Tables Appendix, Tables 1.93a, 1.94a).
- According to health plan performance data, on average, 67.9% of patients get proper medication for long-term control of asthma[i] (National Committee for Quality Assurance, 2002; see Tables Appendix, Table 1.92).

[i] Percentage refers to patients commercially insured. The percentage of Medicaid patients for this same measure is 61.6%.

List of Measures: Respiratory Diseases

Measure	Year	National estimate	National table number	State table number
Immunization, influenza:				
Percent of high risk persons (e.g. COPD) ages 18-64 who received an influenza vaccination in the past 12 months	2001	25.1	1.78a	1.78b
Percent of persons age 65 and over who received an influenza vaccination in the past 12 months	2001	63.1	1.79a	1.79b
Percent of institutionalized adults (persons in long-termcare or nursing homes) who received influenza vaccination in past 12 months	1999	57.3	1.80	xxx
Hospital admissions for immunization-preventable influenza per 100,000 population	2001	13.357	1.81a	1.81b
Immunization, pneumonia:				
Percent of high risk persons (e.g. COPD) ages 18-64 who ever received pneumococcal vaccination	2001	14.2	1.82a	1.82b
Percent of persons age 65 and over who ever received pneumococcal vaccination	2001	54.0	1.83a	1.83b
Percent of institutionalized adults (persons in long-termcare or nursing homes) who ever received pneumococcal vaccination	1999	32.7	1.84	xxx
Treatment of pneumonia:				
Percent of patients with pneumonia who have blood cultures collected before antibiotics are administered	2001-2002	80.95	1.85a	1.85b
Percent of patients with pneumonia who receive the initial antibiotic dose within 4 hours of hospital arrival	2002	63.09	1.86a	1.86b
Percent of patients with pneumonia who receive the initial antibiotic consistent with current recommendations	2002	67.95	1.87a	1.87b
Percent of patients with pneumonia who receive influenza screening or vaccination	2002	27.67	1.88a	1.88b
Percent of patients with pneumonia who receive pneumococcal screening or vaccination	2002	26.13	1.89a	1.89b
Pneumonia mortality rate (number of deaths per 100 discharges for pneumonia)	2001	84.70	1.90	xxx
Treatment of URI:				
Visit rates where antibiotics were prescribed for a diagnosis of common cold per 10,000 population	2000-2001	184.28	1.91	xxx

List of Measures: Respiratory Diseases *(continued)*

Measure	Year	National estimate	National table number	State table number
Management of asthma:				
Percent of people with persistent asthma who are prescribed medications acceptable as primary therapy for long-term control of asthma (inhaled corticosteroids)	2003	69.7	1.92	xxx
Hospital admissions for pediatric asthma per 100,000 population under age 18	2001	26.2	1.93a	1.93b
Hospital admissions for adult asthma per 100,000 population ages 18-64	2001	12.5	1.94a	1.94b
Hospital admissions for adult asthma per 100,000 population ages 65+	2001	170.640	1.95a	1.95b
Treatment of TB:				
Percent of TB patients that complete a curative course of TB treatment within 12 months of initiation of treatment	2000	80.2	1.96	xxx

Note: See Tables Appendix for national and State tables listed above.

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Nursing Home and Home Health Care

Importance and Measures

Demographics

- According to the latest available national data, there were 1.6 million current nursing home residents in 1999 and 2.5 million discharges from nursing homes in 1998-99.[1]
- There were more than 1.4 million current home health patients and 7.8 million discharges from home health agencies in 2000.[2]
- Assuring quality for this frail and expanding population has been a significant challenge and longstanding concern.[3-6]

Cost

- Nursing home and home health services accounted for at least $139.3 billion, or 9%, of national health expenditures in 2002.[7]

Measures

- **Nursing home care**—Based on the recommendations of the National Quality Forum consensus panel, nine new nursing home measures were selected for the 2004 NHQR; five measures were retained from the 2003 NHQR. There are separate measures for the two major populations that reside in nursing homes: one set for postacute care residents and one set for chronic care residents.[i] Some measures are common to both populations. This section highlights the following:
  - Prevalence of pain among postacute and chronic care residents
  - Use of physical restraints among chronic care residents
  - Presence of pressure ulcers among postacute and chronic care residents
- **Home health care**—Performance measures for home health show the portion of patients whose conditions improved or declined during the course of their care from a certified home health agency (the measures are the same as in the 2003 NHQR). Based on national data[ii] for the measures reported here, statistically significant improvement or decline did occur between 2001 and 2003. Quality of home health care is highlighted in this section in two general areas:
  - Improvement in getting around
  - Acute-care hospitalization of home health patients

[i] Data are from the CMS Minimum Data Set (MDS), used by Medicare- and Medicaid-certified nursing homes for all residents, regardless of payer; Medicare Quality Improvement Organization (QIO) data are also presented and show the effect of intensive quality improvement efforts on selected nursing home measures. CMS definitions of postacute and chronic residents are used here. "Postacute" care refers to patients who are admitted to a facility and stay fewer than 30 days. These admissions typically follow an acute-care hospitalization and involve high-intensity rehabilitation or clinically complex care. The postacute quality measures are calculated on any patients with a 14-day MDS assessment (required under the Prospective Payment System) in the last 6 months. "Chronic" care refers to those types of patients who enter a nursing facility typically because they are no longer able to care for themselves at home. These patients (or residents) tend to remain in the nursing facility from several months to several years. The chronic quality measures were calculated on any residents with a full or quarterly MDS in the target quarter. For exact specification see: http://www.cms.hhs.gov/quality/nhqi/QMUserManual200401.pdf

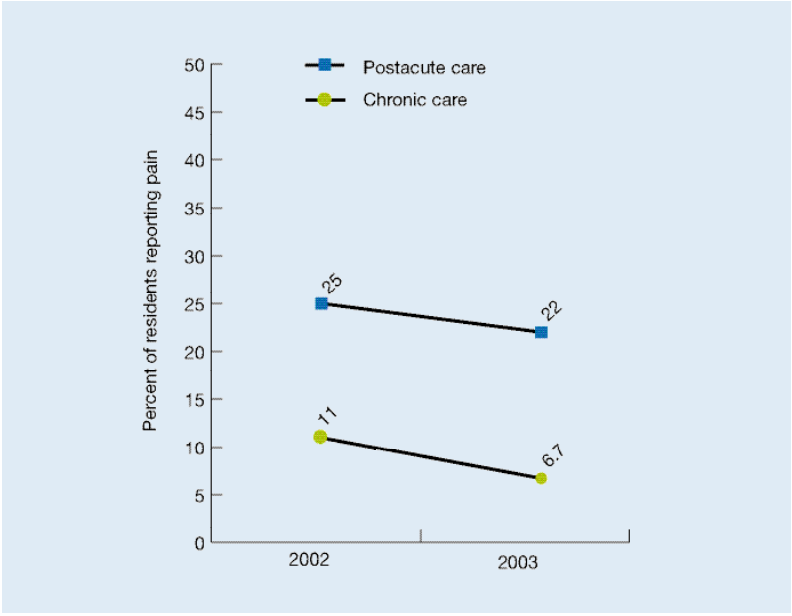
[ii] Data are from the Outcome and Assessment Information Set (OASIS), used by Medicare-certified home health agencies for all adult (non-maternity) home health patients receiving skilled services during calendar years 2001-2003.

Findings

Prevalence of Pain Among Postacute and Chronic Care Residents

Pain prevalence—characterized as moderate or severe in the past 7 days or excruciating at any time in the past week—is common to both postacute and chronic care nursing home residents.

Figure 2.22. Percent of nursing home residents reporting pain, by type of resident, 2002 and 2003



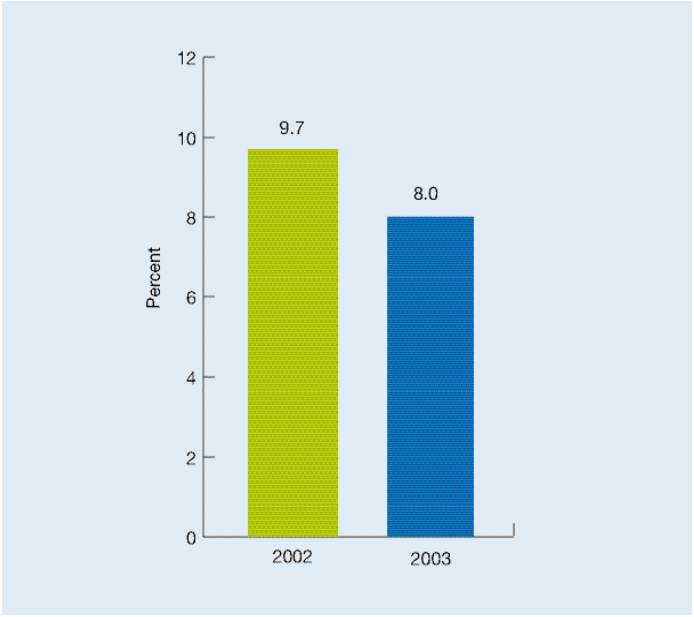
Source: Centers for Medicare & Medicaid Services, Minimum Data Set (see www.medicare.gov/nhcompare/home.asp).

- Between 2002 and 2003, pain prevalence declined 12% for postacute residents and 39% for chronic care residents (Figure 2.22).
- State variation of pain prevalence narrowed for both groups of residents, particularly for the chronic care population, which declined by half, from 22 percentage points (7% to 29%) in 2002 to about 10 percentage points (3% to 12%) in 2003.
- A study of the CMS Nursing Home Quality Initiative compared nursing homes participating in intensive quality improvement efforts against facilities that did not. Between the second quarter of 2002 and the fourth quarter of 2003, it was found:
  - For chronic residents' pain, a relative decline of 46% for the intensive group compared with a 33% decline in the nonintensive group (CMS, 2004; unpublished QIO data).
  - For postacute residents' pain, a relative decline of 17% for the intensive group compared with a 9% decline in the nonintensive group.

Prevalence of Physical Restraints Among Chronic Care Residents

According to regulations for the nursing home industry, restraints should be used only to ensure the physical safety of a nursing home resident, and CMS encourages gradual restraint reduction because of the many negative outcomes associated with restraint use.

Figure 2.23. Percent of chronic care nursing home residents with restraints, 2002 and 2003



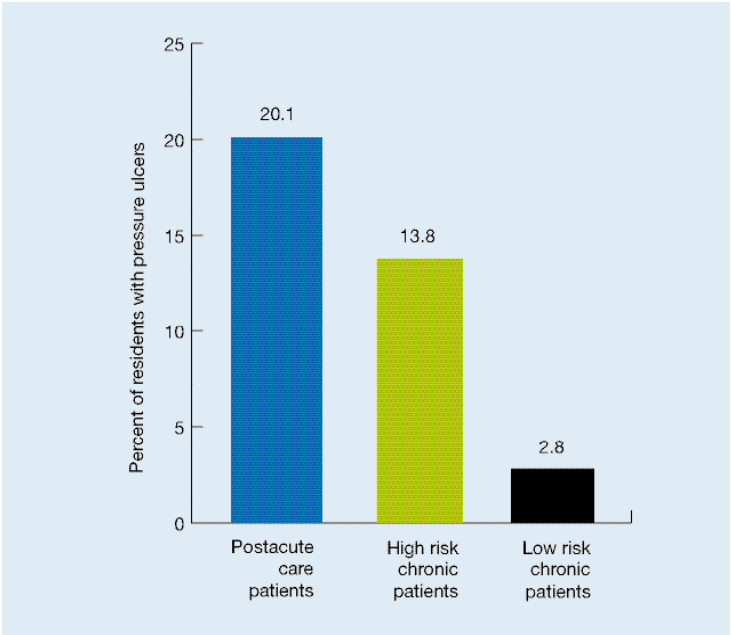
Source: Centers for Medicare & Medicaid Services, Minimum Data Set (see www.medicare.gov/nhcompare/home.asp).

- The percentage of chronic care residents with restraints dropped from 9.7% in 2002 to 8% in 2003, an 18% decline (Figure 2.23).
- The same Nursing Home Quality Initiative study noted above found a relative decline of 29% in the use of restraints for the intensive quality improvement facility group compared with a 17.6% decline among facilities in the nonintensive group (CMS, 2004; unpublished QIO data).

Presence of Pressure Ulcers Among Postacute and Chronic Care Residents

Pressure sores are important because they can be painful, take a long time to heal, and cause complications such as skin or bone infections. These sores are classified into four stages according to severity, and these measures include all stages.

Figure 2.24. Percent of nursing home residents with pressure ulcers, by type of resident, 2003



Source: Centers for Medicare & Medicaid Services, Minimum Data Set (see http://www.medicare.gov/nhcompare/home.asp).

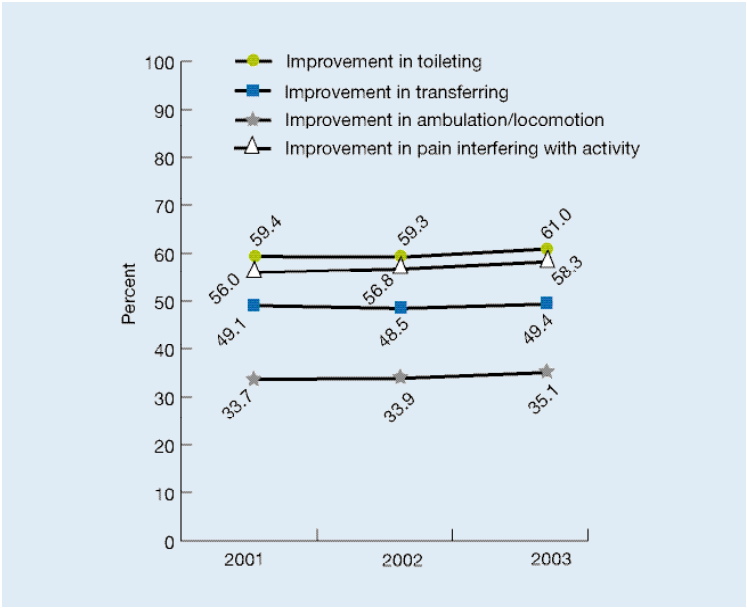
- One in 5 postacute care residents either developed pressure sores or had pressure sores that did not get better between their 5th and 14th day assessments (Figure 2.24).
- For chronic care residents, 13.8% of high risk residents had pressure sores on their most recent assessment compared with 2.8 % of low risk residents.[iii]

[iii] High risk residents are those who are in a coma, who do not get the nutrients they need, or who cannot move or change position on their own. Conversely, low risk residents can be active, can change positions, and are getting the nutrients they need.

Improvements in Mobility in Home Health Episodes

Four mobility measures are used to describe how well a home health patient can get around his or her home.

Figure 2.25. Percent of home health episodes showing mobility improvements, 2001-2003



Source: Calculated by the Center for Health Services and Policy Research, University of Colorado, from OASIS data.

Note: The four measures that describe how well a home health patient can get around the home are described as follows: *improvement in toileting* = improved ability to get to and from the toilet; *improvement in transferring* = improved ability to get in and out of bed; *improvement in ambulation/locomotion* = improved ability to walk or move around; *improvement in pain interfering with activity* = percent of patients with less pain when moving around.

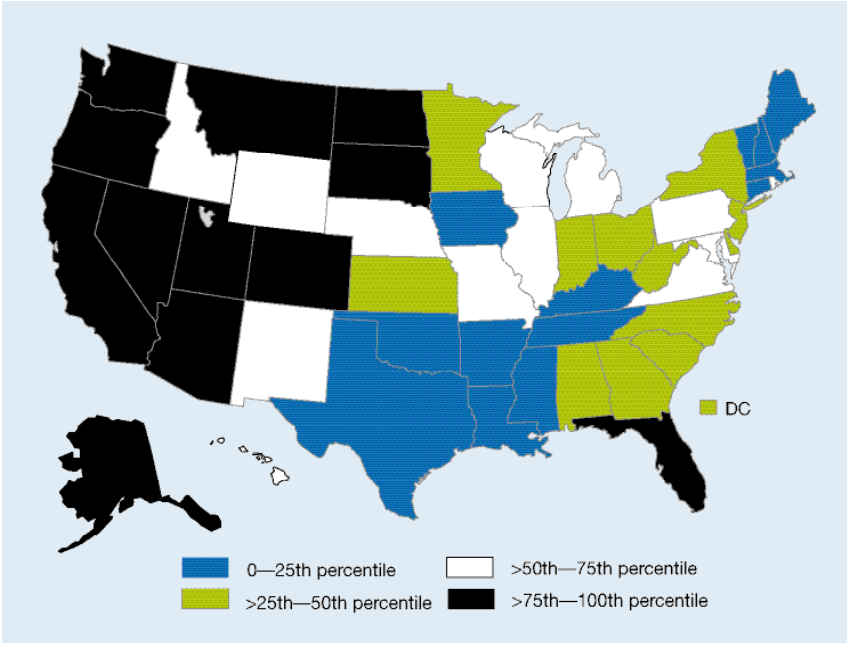
- All four measures showed statistically significant improvement between 2001 and 2003 (Figure 2.25).
- The category in which most improvement occurred—2.3 percentage points—was pain interfering with activity.

Acute Care Hospitalization of Home Health Patients

Hospitalization, improvement so that care is no longer needed, and death of the patient are among the possible end points to an episode of home health care. On average, just over a quarter (27.87%) of home health episodes end in hospitalization.

Figure 2.26. State variation in percentage of home health episodes with acute care hospitalization, 2003

[National average = 27.87%]



Source: Calculated by the Center for Health Services and Policy Research, University of Colorado, from OASIS data, calendar year 2003.

Note: Values for quartiles are: 0-25th percentile=30.86%-36.94%; >25th-50th percentile=27.84%-30.61%; >50th-75th percentile=24.41%-27.65%; >75th-100th percentile=20.04%-24.14%.

- The percent of home health episodes ending in hospitalization varies from 20%-30% percent among States. Twelve States had lower (better) rates (i.e., in the top quartile) while 13 had higher rates (i.e., in the bottom quartile) in 2003 (Figure 2.26).

List of Measures: Nursing Home and Home Health Care

Measure	Year	National estimate	National table number	State table number
Nursing facility care:				
Percent of residents whose need for help with daily activities has increased	2003	15.24	xxx	1.97
Percent of residents who have moderate to severe pain	2003	6.73	xxx	1.98
Percent of residents who were physically restrained	2003	8.01	xxx	1.99
Percent of residents who spent most of their time in bed or in a chair	2003	4.40	xxx	1.100
Percent of residents whose ability to move about in and around their room got worse	2003	11.98	xxx	1.101
Percent of residents with a urinary tract infection	2003	8.39	xxx	1.102
Percent of residents who have become more depressed or anxious	2003	14.56	xxx	1.103
Percent of high risk residents who have pressure sores	2003	13.83	xxx	1.104
Percent of low risk residents who have pressure sores	2003	2.77	xxx	1.105
Percent of low risk residents who lose control of their bowels or bladder	2003	46.35	xxx	1.106
Percent of residents who have/had a catheter inserted and left in their bladder	2003	5.66	xxx	1.107
Percent of short stay residents who had moderate to severe pain	2003	22.11	xxx	1.108
Percent of short stay residents with delirium	2003	3.26	xxx	1.109
Percent of short stay residents with pressure sores	2003	20.14	xxx	1.110
Home health care:*				
Outcome: improvement in upper body dressing	2003	63.40	xxx	1.111
Outcome: improvement in management of oral medications	2003	36.46	xxx	1.112
Outcome: improvement in bathing	2003	58.46	xxx	1.113
Outcome: stabilization in bathing	2003	91.59	xxx	1.114
Outcome: improvement in transferring	2003	49.40	xxx	1.115
Outcome: improvement in ambulation/locomotion	2003	35.09	xxx	1.116
Outcome: improvement in toileting	2003	61.01	xxx	1.117
Outcome: improvement in pain interfering with activity	2003	58.32	xxx	1.118
Outcome: improvement in dyspnea	2003	55.06	xxx	1.119
Outcome: improvement in urinary incontinence	2003	47.37	xxx	1.120
Outcome: improvement in confusion frequency	2003	41.11	xxx	1.121
Outcome: acute care hospitalization	2003	27.87	xxx	1.122

Note: See Tables Appendix for national and State tables listed above.

*Home health national estimates were incorrectly listed in the initial printing of the 2004 NHQR. Estimates listed above are the proper estimates.

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Chapter 3. Patient Safety

Importance and Measures

Morbidity and Mortality

- A 1999 report by the Institute of Medicine, *To Err Is Human,* estimated that 44,000 to 98,000 Americans die each year as a result of medical errors, making it the eighth leading cause of death.[1]
- A recent study reported that at least 32,000 Americans die in the hospital each year due to 18 types of medical injuries.[2]

Cost

- The cost attributable to medical errors is as much as $29 billion annually in lost income, disability, and health care costs.[1]

Measures

Much progress has been made in recent years in raising awareness, developing event reporting systems, and developing national standards for data collection. However, data remain incomplete for a comprehensive national assessment of patient safety.[3] Nevertheless, several measures are available to provide insight into the level of patient safety in the United States. This section highlights NHQR patient safety measures in three areas:

- Hospital-acquired (nosocomial) infections
- Adverse events and postoperative complications of care
- Inappropriate use of medications by the elderly

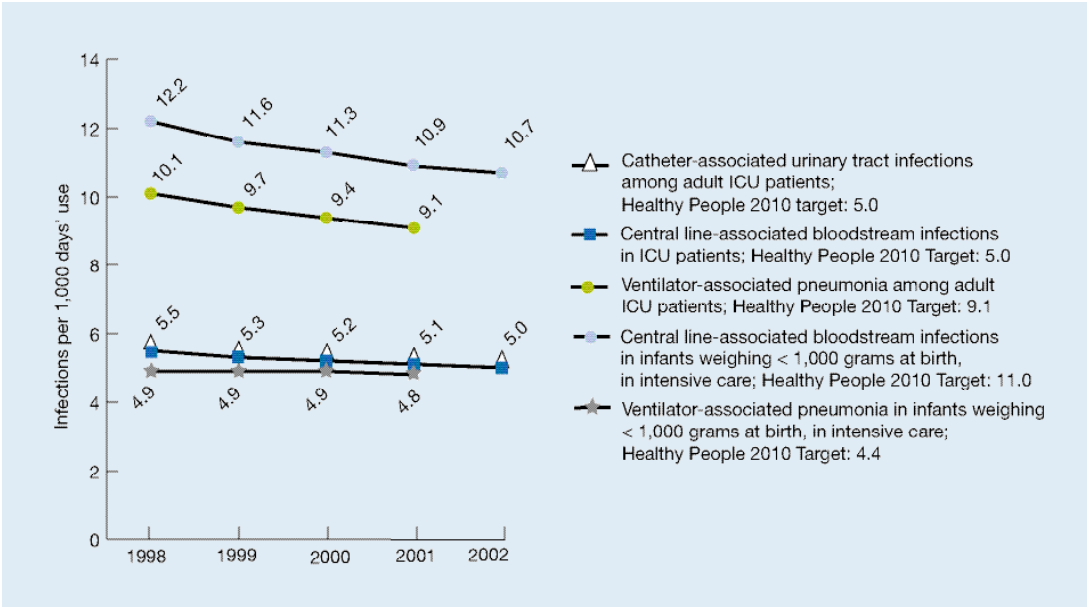
The measures reviewed are based on data from the CDC's National Nosocomial Infection Surveillance (NNIS) System,[4] AHRQ's Patient Safety Indicators applied to the HCUP Nationwide Inpatient Sample (NIS),[5] CMS's Medicare Patient Safety Monitoring System (MPSMS),[6] and AHRQ's Medical Expenditure Panel Survey (MEPS).[7]

Findings

Hospital-Acquired (Nosocomial) Infections

Infections acquired in the process of care, or nosocomial infections, are one of the most serious patient safety concerns. This is especially true in some care settings, such as intensive care units (ICUs), and for some procedures, such as central vascular catheters (CVCs).

Figure 3.1. Nosocomial infections in ICU patients, 1998-2002



Source: Centers for Disease Control and Prevention, National Nosocomial Infection Surveillance (NNIS) System.

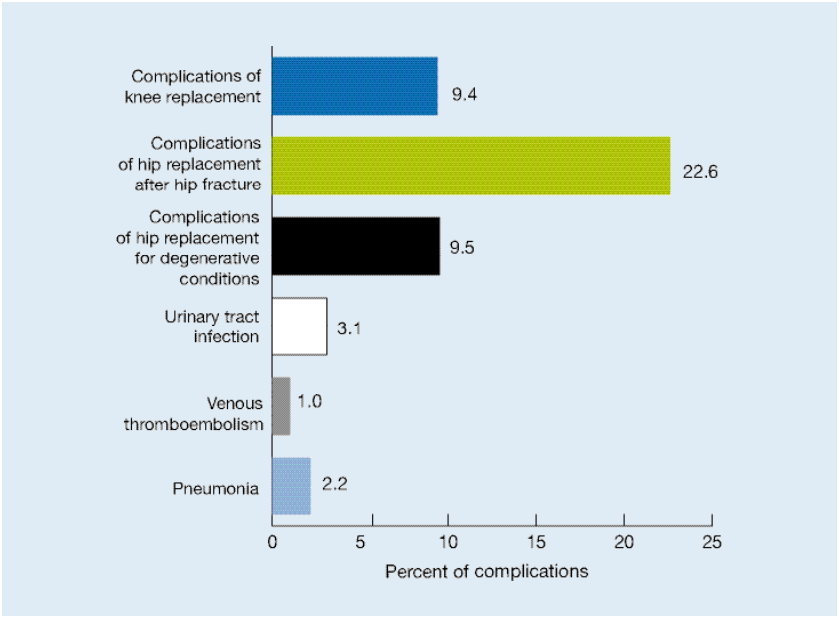
Note: The lines for catheter-associated urinary tract infections and central-line bloodstream infections in ICU patients overlap. Both ventilator-associated pneumonia measures were redefined in 2002; thus data for these two measures for 2002 are not presented in this chart.

- NNIS data show that hospital-acquired infections in some types of ICUs have gradually declined from 1998 to 2002 (Figure 3.1). The targets set for Healthy People 2010[8] for four of the five measures tracked through NNIS were met by 2002.
- High risk is associated with the use of CVCs and ventilators. In 2002, 2.4% of CVC procedures resulted in infections at the insertion sites, 1.5% of CVC procedures resulted in bloodstream infections, and 7.9% of ventilator uses caused pneumonia (MPSMS, 2002).

Adverse Events and Postoperative Complications of Care

Adverse events and postoperative complications may be exacerbated by or related to a patient's underlying condition, but many complications can be avoided if adequate care is provided.

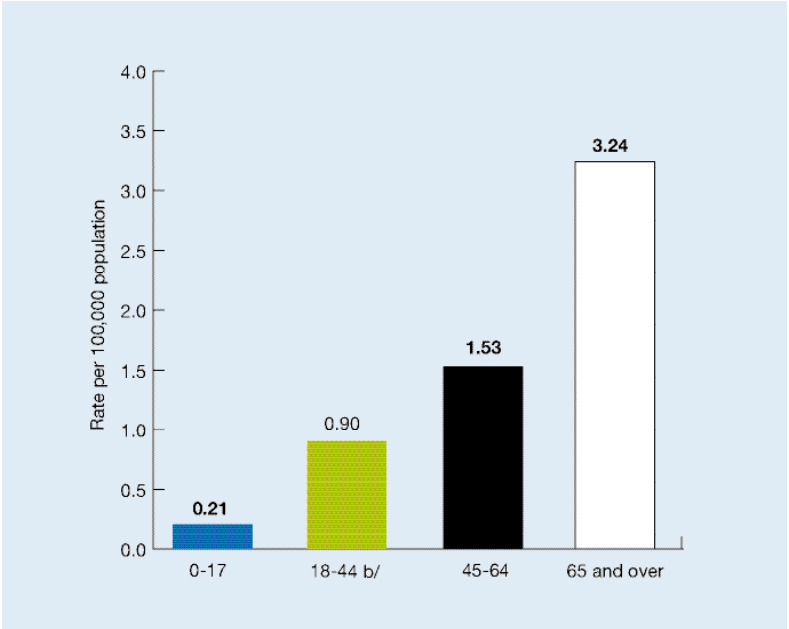
Figure 3.2. Prevalence of selected postoperative complications, 2002



Source: Centers for Medicare & Medicaid Services, Medicare Patient Safety Monitoring System, 2002.

- Nearly 1 in 10 total hip replacements for degenerative conditions and 1 in 10 knee replacement operations have complications of various severity including infection, hemotoma, or death (Figure 3.2).
- The higher complication rate for hip replacement after hip fracture (23%) suggests that the development of adverse events is also determined by the severity of patient condition.
- Postoperative pneumonia, venous thromboembolism, and urinary tract infections are among the most common risks in surgical patients.

Figure 3.3. Prevalence of foreign body left in during procedure, by age, 2001



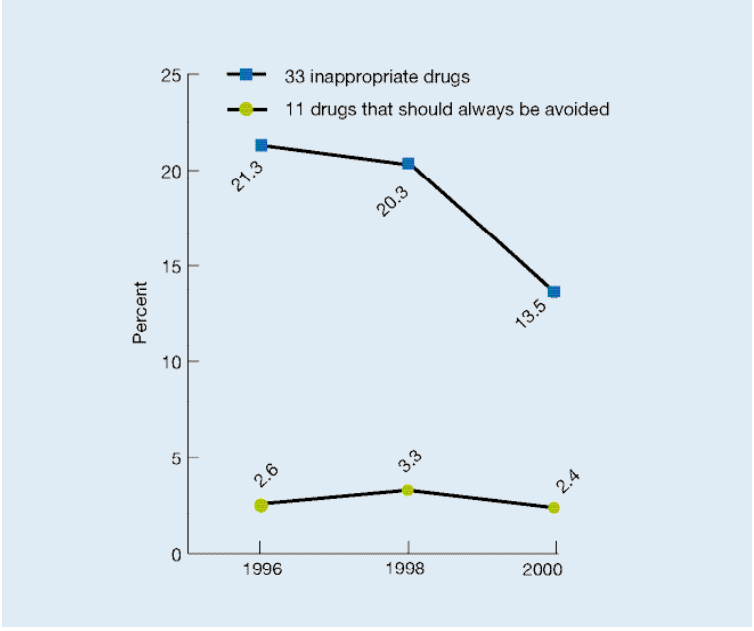
Source: Agency for Healthcare Research and Quality, HCUP Nationwide Inpatient Sample, 2001.
Note: Boldface rate is statistically different from b/; adjusted by gender.

- About 1 case of foreign body left in after procedure, either retained during current hospitalization or a previous hospitalization, was discovered in eve ry 100,000 persons in 2001, declining from 1.4 per 100,000 population in 1994 (HCUP 1994-2001).
- Foreign bodies left in after procedure were more likely to be detected in elderly patients (Figure 3.3).
- Mechanical adverse events such as perforation occurred in 3.3% of CVC procedures in 2002 (MPSMS, 2002).

Inappropriate Use of Medications by the Elderly

Adverse drug events bring serious risk to patients, but the magnitude of this problem is difficult to assess.[9] Examination of whether doctors take precautions when prescribing drugs and the extent to which medicines that are inappropriate and potentially harmful to patients are prescribed are alternative ways to assess safe use of medication.

Figure 3.4. Inappropriate use of medications by the elderly, 1996-2000



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 1996-2000.

- The percentage of community dwelling elderly American who had at least 1 of the 33 drugs considered potentially inappropriate for the elderly[10] declined from 21.3% in 1996 to 13.5% in 2000, while the percentages of the elderly that had 1 of 11 drugs that should always be avoided by the elderly[10] remained at 2.4%-2.6% (Figure 3.4).
- Of people with a usual source of care, 25.5% of elderly respondents reported that their usual source of care did not ask them about medications prescribed by other doctors in 2001 (MEPS, 2001; see Tables Appendix, Table 2.38).

List of Measures: Patient Safety

Measure	Year	National estimate	National table number	State table number
Complications of care:				
Birth trauma (injury to neonate) per 1,000 live births	2001	7.358	2.1	xxx
Deaths per 1,000 admissions in low mortality DRG	2001	0.628	2.2	xxx
Failure to rescue (deaths) per 1,000 discharges with complications potentially resulting from care)	2001	136.630	2.3	xxx
Transfusion reactions per 1,000 discharges	2001	0.004	2.4a	xxx
Transfusion reactions per 100,000 population	2001	0.054	2.4b	xxx
Foreign body accidentally left in body during procedure per 1,000 discharges	2001	0.085	2.5a	xxx
Foreign body accidentally left in body during procedure per 100,000 population	2001	1.143	2.5b	xxx
Central line-associated bloodstream infection in ICU patients (%)	2002	5.0	2.6	xxx
Central line-associated bloodstream infection in infants weighing 1,000 grams or less at birth in intensive care (%)	2002	10.7	2.7	xxx
Complications of anesthesia per 1,000 surgical discharges	2001	0.802	2.8	xxx
Decubitus ulcer per 1,000 discharges of length 5 or more days	2001	22.988	2.9	xxx
Iatrogenic pneumothorax per 1,000 discharges	2001	0.753	2.10a	xxx
Iatrogenic pneumothorax per 100,000 population	2001	8.495	2.10b	xxx
Selected infections due to medical care per 1,000 discharges	2001	1.877	2.11a	xxx
Selected infections due to medical care per 100,000 population	2001	39.826	2.11b	xxx
Postoperative hip fracture per 1,000 surgical patients age 18 years or older	2001	0.640	2.12	xxx
Postoperative hemorrhage or hematoma per 1,000 surgical discharges	2001	2.153	2.13	xxx
Postoperative physiologic and metabolic derangements per 1,000 elective-surgery patients	2001	1.035	2.14	xxx
Postoperative respiratory failure per 1,000 elective surgery patients	2001	3.541	2.15	xxx
Postoperative pulmonary embolism or deep vein thrombosis per 1,000 surgical discharges	2001	8.615	2.16	xxx
Postoperative sepsis per 1,000 elective surgery discharges	2001	10.079	2.17	xxx
Accidental puncture or laceration during procedures per 1,000 discharges	2001	3.535	2.18a	xxx
Accidental puncture or laceration during procedures per 100,000 population	2001	36.800	2.18b	xxx
Reclosure of postoperative disruption of abdominal wall per 1,000 abdominopelvic surgery discharges	2001	2.282	2.19a	xxx
Reclosure of postoperative disruption of abdominal wall per 100,000 population	2001	1.716	2.19b	xxx
Obstetrical trauma per 1,000 instrument-assisted vaginal deliveries	2001	239.454	2.20	xxx
Obstetrical trauma per 1,000 vaginal deliveries without instrument assistance	2001	82.593	2.21	xxx
Obstetrical trauma per 1,000 cesarean deliveries	2001	5.715	2.22	xxx

Measure	Year	National estimate	National table number	State table number
Complications of care: *(continued)*				
Catheter-associated urinary tract infection in intensive care unit patients (%)	2002	5.0	2.23	xxx
Ventilator-associated pneumonia in intensive care unit patients (%)	2002	5.9	2.24	xxx
Ventilator-associated pneumonia in infants weighing 1,000 g or less at birth in intensive care (%)	2002	3.1	2.25	xxx
Postoperative venous thromboembolic events (%)	2002	1.0	2.26	xxx
Postoperative pneumonia events (%)	2002	2.2	2.27	xxx
Mechanical adverse events associated with central vascular catheters (CVCs) (%)	2002	3.3	2.28	xxx
Insertion-site infections associated with central vascular catheters (CVCs) (%)	2002	2.4	2.29	xxx
Bloodstream infections (BSIs) associated with central vascular catheters (CVCs) (%)	2002	1.5	2.30	xxx
Postoperative urinary tract infections (UTIs) (%)	2002	3.1	2.31	xxx
Ventilator-associated pneumonia (VAP) events (%)	2002	7.9	2.32	xxx
Hospital-acquired bloodstream infections (BSIs) (%)	2002	0.4	2.33	xxx
Adverse events associated with hip joint replacement due to degenerative conditions (%)	2002	9.5	2.34	xxx
Adverse events associated with hip joint replacement due to fracture (%)	2002	22.6	2.35	xxx
Adverse events associated with knee replacement (%)	2002	9.4	2.36	xxx
Prescribing medications:				
Community dwelling elderly who had at least 1 of 33 inappropriate drugs (%)	2000	13.5	2.37a	xxx
Community dwelling elderly who had at least 1 of 11 drugs that should always be avoided by the elderly (%)	2000	2.42	2.37b	xxx
Patients who report that usual source of care asks about Rx from other providers (%)	2001	81.6	2.38	xxx

Note: See Tables Appendix for national and State tables listed above.

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Chapter 4. Timeliness

Importance and Measures

Timeliness, or the ability to receive care when needed,[1] is one of the six aims for improving health care quality established by the Institute of Medicine. Long waits in doctors' offices and emergency departments and in getting treatments and tests define the elements of measuring and understanding timeliness in the health care system.[2]

Morbidity and Mortality

- Lack of timeliness can result in emotional distress, physical harm, and financial consequences for patients.[3]
- Early intervention, whether with percutaneous coronary stenting or thrombolytic therapy, is regarded as the best chance for protecting heart muscle damage in patients suffering heart attacks.[4]
- Stroke patients' mortality and long-term disability are largely influenced by the timeliness of therapy.[5, 6]
- Timely delivery of appropriate care can help reduce mortality and morbidity for both acute conditions such as heart attacks and chronic conditions such as chronic kidney disease.[7-9]

Cost

- Early care for comorbid conditions such as depression has been shown to reduce hospitalization rates and costs for Medicare beneficiaries.[10]
- Early care for complications in patients with diabetes can reduce overall costs of the disease.[11] Some research suggests that complications can amount to nearly $50,000 per patient over 30 years.[12]
- Timely outpatient care can reduce admissions for pediatric asthma, which account for $835 million in total hospitalization charges annually.[13,14]

Measures

This report focuses on two of the nine measures in the timeliness measure set:

- Time to initiation of thrombolytic therapy for heart attack patients[i]
- Patient's perceptions of the timeliness of appointments for routine care and illness care

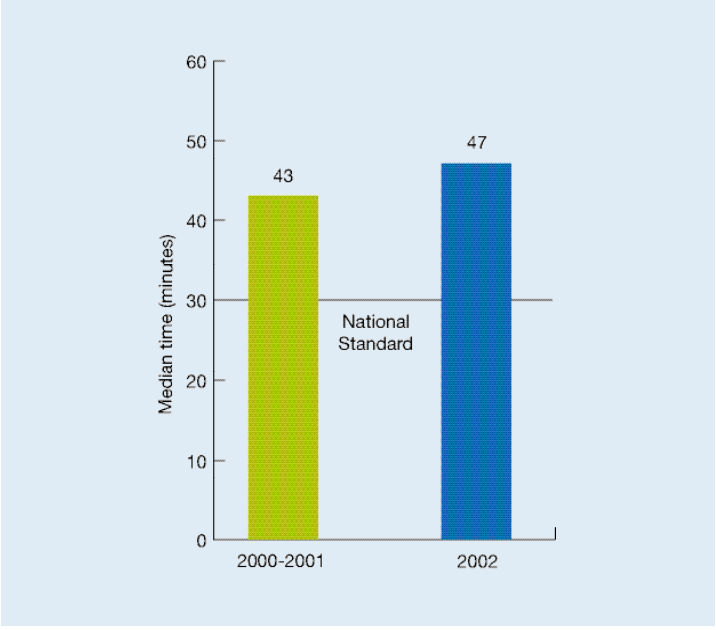
[i] These measures are described in the Heart Disease section of Chapter 2.

Findings

Time to Initiation of Thrombolytic Therapy for Heart Attack Patients

The necessity of treating patients in a timely fashion within an episode of care is especially important for emergency situations such as heart attacks. Timely administration of thrombolytic agents can save lives for patients suffering from such attacks.

Figure 4.1. Median time (minutes) from arrival of heart attack patient to initiation of thrombolytic agent, by year, 2000-2001 and 2002

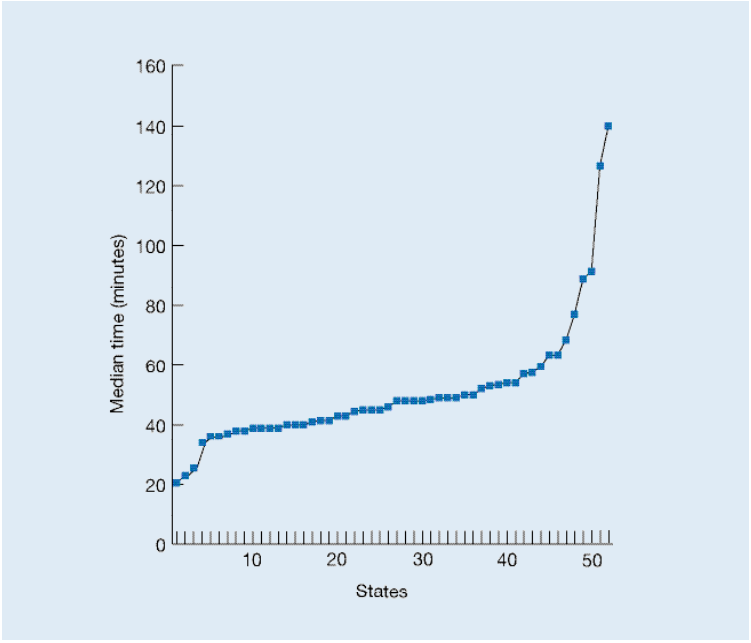


Source: Centers for Medicare & Medicaid Services, Medicare Quality Improvement Organization Program, 1999-2000 and 2000-2001.

Note: This measure is assessed for patients with ST segment elevation or left bundle branch block (LBBB) on the electrocardiogram (ECG) performed closest to the hospital arrival time.

- Between 2000-2001 and 2002, the median time to the initiation of a thrombolytic agent increased slightly but not significantly from 43 to 47 minutes (Figure 4.1).
- The median time to the initiation of thrombolytic agent exceeds the national standard of 30 minutes.[15]

Figure 4.2. Variation in median time to initiation of thrombolytic agent across the 50 States, 2000-2001



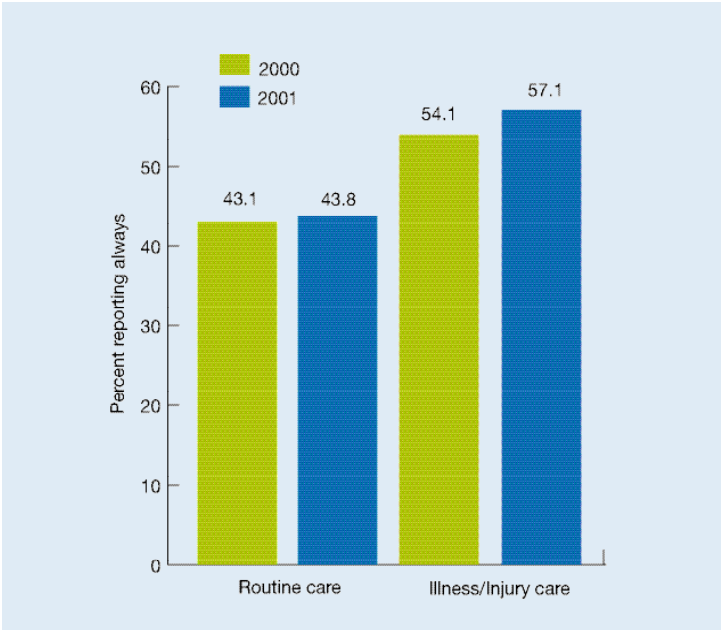
Source: Centers for Medicare & Medicaid Services, Medicare Quality Improvement Organization Program, 2000-2001.
Note: Number of State units is 52 (includes DC and PR).

- There is a sevenfold variation in timeliness for the administration of a thrombolytic agent across States, ranging from a low of 20 minutes to a high of 140 minutes (Figure 4.2).

Patient Perceptions of Timeliness of Appointments for Care

The ability of patients to obtain appropriate care for a specific problem once they have entered the health care system is a key element in a patient-focused health care system. Obtaining appointments for illness or injury and for routine care are important markers of how well the health care system is responding to patients' perceived needs.

Figure 4.3. Percent of adults who report always getting an appointment as soon as wanted, by type of care and year, 2000 and 2001



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2000 and 2001.

- Less than half of adults report that they always get an appointment as soon as they wanted for routine care; slightly more than half report that they always get an appointment as soon as they wanted for illness/injury care (Figure 4.3).
- There has been no statistical change in patient perceptions of timeliness of appointments for routine care and illness/injury care for adults between 2000 and 2001.

List of Measures: Timeliness

Measure	Year	National estimate	National table number	State table number
Basic access:				
Percent of persons who report that they have a usual source of medical care, by place of care	2001	88.2	3.1a 3.1b 3.1c	 xxx
Percent of families that experience difficulties in obtaining care, by reason (overall)	2001	11.6	3.2a 3.2b	 xxx
Getting appointments for care:				
Among persons age 18 and over who reported making an appointment for routine health care in the last 12 months, percent distribution of how often they got an appointment as soon as wanted (always)	2001	43.8	3.3a 3.3b	3.3c 3.3d 3.3e 3.3f
Among children under age 18 who had appointments reported for routine health care in the last 12 months, percent distribution of how often they got an appointment as soon as wanted (always)	2001	67.6	3.4a	3.4b 3.4c
Among adults age 18 and over who reported making an appointment for an illness or injury in the last 12 months, percent distribution of how often they got an appointment as soon as wanted (always)	2001	57.1	3.5a 3.5b	3.5c 3.5d 3.5e 3.5f
Among children under age 18 who had appointments reported for an illness or injury in the last 12 months, percent distribution of how often they got an appointment as soon as wanted (always)	2001	76.9	3.6a	3.6b 3.6c
Waiting time:				
ED visits: Percent ED visits where patient was admitted to the hospital or transferred to other facility whose ED visit was greater than or equal to six hours	2000-2001	25.935	3.7	xxx
ED visits: Percent of ED visits where patients left before being seen	2000-2001	1.607	3.8a 3.8b	xxx

Note: See Tables Appendix for national and State tables listed above.

Other Measures Related to Timeliness in the NHQR Measure Set

Measure	Year	National estimate	National table number	State table number
Process: Percent of AMI patients administered aspirin within 24 hours of admission	2002	85.34	1.36a	1.36b
Process: Percent of AMI patients administered beta-blocker within 24 hours of admission	2002	76.26	1.38a	1.38b
Process: Median time in minutes to thrombolysis for AMI patients. Time from arrival to initiation of a thrombolytic agent in patients with ST segment elevation or left bundle branch block (LBBB) on the electrocardiogram (ECG) performed closest to hospital arrival time	2001	47	1.42a	1.42b
Process: Median time in minutes to PTCA for AMI patients. Median time from arrival to percutaneous transluminal coronary angioplasty (PTCA) in patients with ST segment elevation or left bundle branch block (LBBB) on the electrocardiogram (ECG) performed closest to hospital arrival time.	2001	187.5	1.43a	1.43b
Process: Percent of patients with pneumonia who receive the initial antibiotic dose within 4 hours of hospital arrival	2002	63.09	1.86a	1.86b

Note: See Tables Appendix for national and State tables listed above.

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Chapter 5. Patient Centeredness

Importance and Measures

As noted in the 2003 NHQR, "patient centeredness" is defined as: "[H]ealth care that establishes a partnership among practitioners, patients, and their families (when appropriate) to ensure that decisions respect patients' wants, needs, and preferences and that patients have the education and support they need to make decisions and participate in their own care."[1] Patient centeredness "encompasses qualities of compassion, empathy, and responsiveness to the need, values, and expressed preferences of the individual patient."[2]

Morbidity and Mortality

- Patient centered approaches to care that rely on building a doctor-patient relationship, improving communication techniques, and fostering a positive atmosphere have been shown to improve the health status of patients.[3, 4]
- A patient centered approach has been shown to lessen the symptom burden on patients.[5]
- Patient centered care encourages patients to comply with and adhere to treatment regimens.[6, 7]
- Patient centered care reduces the chance of misdiagnosis due to poor communication.[8]

Cost

- Patient centeredness has been shown to reduce underuse and overuse of medical services.[9]
- Patient centeredness can reduce the strain on system resources or save money by reducing the number of diagnostic tests and referrals.[4, 5]
- Although some studies have shown that being patient centered reduces costs and use of health service resources,[5, 10] others have shown that patient centeredness increases costs to providers, especially in the short run.[11]
- The practice of patient centered care may reduce the risk factors that often lead to malpractice suits;[12, 13] however, others dispute the evidence of this.[14]

Measures

The NHQR tracks four measures of the patient experience of care. This section highlights two of these measures:

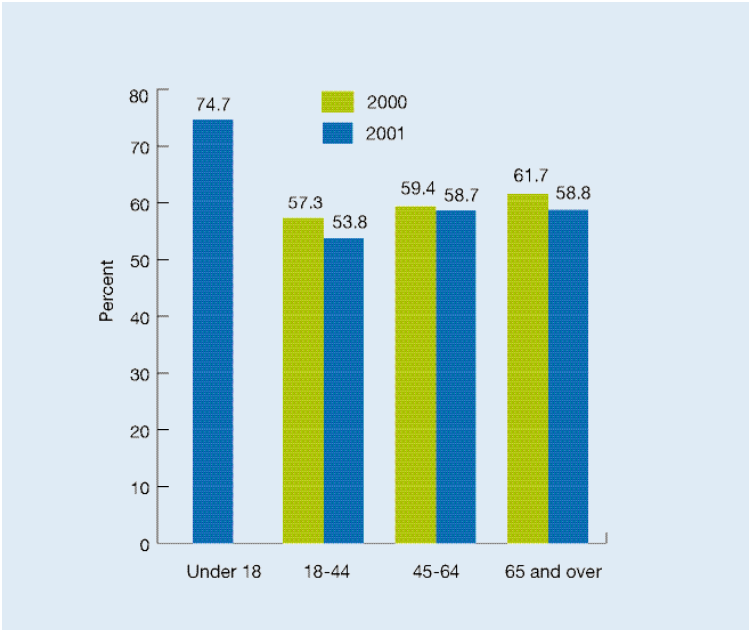
- Patients who report that their doctor explains things clearly
- Patients who report that their doctor shows respect for what they have to say

Findings

Patients Who Report That Their Doctor Explains Things Clearly

It is important for providers to listen to patients since they must rely on them for information about symptoms and other information bearing on medical conditions and treatments. It is also important for the provider to listen because patients and physicians often have different views of symptoms and treatment effectiveness.[15]

Figure 5.1. Percent of persons having a health care provider that always explains things clearly, by age group, 2000-2001



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2000 and 2001.

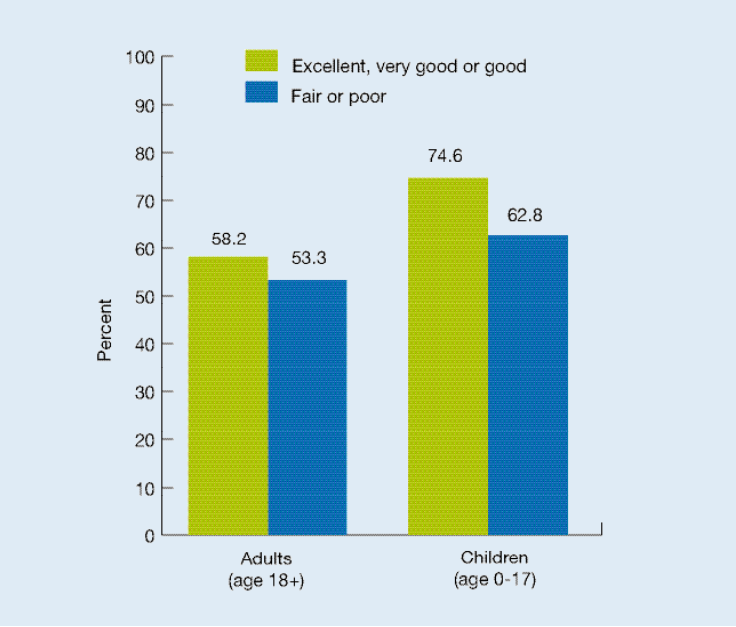
Note: Due to a methodological change between 2000 and 2001 in the way children's data were collected, trend data for the under 18 age group are unavailable for 2000.

- Overall the percentage of adults having a doctor who always explained things clearly remained stable from 2000 to 2001 (Figure 5.1).
- Percentages reported for children are higher than those reported for adults, irrespective of insurance type.
- In general, percentages for older adults on Medicare (both managed care and fee-for-service) on this measure tend to be higher than those for adults with commercial insurance. This is especially true for Medicare fee-for-service where States who reported scores ranged from a low of 60.8% to a high of 76.3% (see Tables Appendix, Tables 4.4.c-h).
- Similarly, adults on Medicaid have higher percentages than do adults with commercial insurance, with the majority of States reporting scores above the national average (see Tables Appendix, Tables 4.4b-h).

Patients Who Report That Their Doctor Shows Respect for What They Have To Say

Respect for patient's values, preferences, and expressed needs is one of several important dimensions of patient centered care.[2]

Figure 5.2. Percent of persons having a health care provider that always shows respect, by perceived health status, 2001



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2001.

- Adult scores for providers showing respect remained stable from 2000 to 2001 (Figure 5.2).
- Children in fair or poor health were significantly less likely than other children to have a provider that always showed them respect.
- Percentages for older adults on Medicare (both managed care and fee-for-service) tend to be higher than those for adults with commercial insurance. For example, States that reported Medicare fee-for-service scores ranged from a low of 64.1% to a high of 77.0% (see Tables Appendix, Tables 4.5c-h).
- Similarly, adults on Medicaid have higher percentages than do adults with commercial insurance, with the majority of States reporting scores above the national average (see Tables Appendix, Tables 4.5c-h).

List of Measures: Patient Centeredness

Measure	Year	National estimate	National table number	State table number
Patient experience of care:				
Among adults age 18 and over who reported going to a doctor's office or clinic in the last 12 months, percent distribution of how often their health providers listened carefully to them	2001	55.0	4.1a 4.1b	4.1c 4.1d 4.1e 4.1f 4.1g 4.1h
Among children under age 18 who had a doctor's office or clinic visit reported in the last 12 months, percent distribution of how often their health providers listened carefully to their parents	2001	71.9	4.2a	4.2b 4.2c
Among adults age 18 and over who reported going to a doctor's office or clinic in the last 12 months, percent distribution of how often their health providers explained things clearly	2001	56.4	4.3a 4.3b	4.3c 4.3d 4.3e 4.3f 4.3g 4.3h
Among children under age 18 who had a doctor's office or clinic visit in the last 12 months, percent distribution of how often their health providers explained things clearly	2001	74.7	4.4a	4.4b 4.4c
Among adults age 18 and over who reported going to a doctor's office or clinic in the last 12 months, percent distribution of how often their health providers showed respect for what they had to say	2001	57.4	4.5a 4.5b	4.5c 4.5d 4.5e 4.5f 4.5g 4.5h
Among children under age 18 who had a doctor's office or clinic visit in the last 12 months, percent distribution of how often their health providers showed respect for what their parents had to say	2001	74.3	4.6a	4.6b 4.6c
Among adults age 18 and over who reported going to a doctor's office or clinic in the last 12 months, percent distribution of how often their health providers spent enough time with them	2001	44.0	4.7a 4.7b	4.7c 4.7d 4.7e 4.7f 4.7g 4.7h
Among children under age 18 who had a doctor's office or clinic visit in the last 12 months, percent distribution of how often their health providers spent enough time with them and their parents	2001	67.7	4.8a	4.8b 4.8c

Note: See Tables Appendix for national and State tables listed above.

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List of Measures

Measure	Measure number	Measure specifications a/	National database a/	State database a/
EFFECTIVENESS OF CARE				
CANCER				
Screening for breast cancer:				
Percent of women (age 40 and over) who report they had a mammogram within the past 2 years	1.1	HP2010 (3-13)	NHIS	BRFSS
Rate of breast cancer incidence per 100,000 women age 40 and over diagnosed at advanced stage(regional, distant stage or local stage w/tumor greater than 2 cm)	1.2	SEER program	SEER	n.a.
Screening for cervical cancer:				
Percent of women (age18 and over) who report that they had a Pap smear within the past 3 years	1.3	HP2010 (3-11b)	NHIS	BRFSS
Rate of cervical cancer incidence per 100,000 women age 20 and over diagnosed at advanced stage(all invasive tumors)	1.4	SEER program	SEER	n.a.
Screening for colorectal cancer:				
Percent of men and women (age 50 and over) who report they ever had a flexible sigmoidoscopy/colonoscopy	1.5	HP2010 (3-12b)	NHIS	BRFSS
Percent of men and women (age 50 and over) who report they had a fecal occult blood test (FOBT) within the past 2 years	1.6	HP2010 (3-12a)	NHIS	BRFSS
Rate of colorectal cancer incidence per 100,000 men and women age 50 and over diagnosed at advanced stage (tumors diagnosed at regional or distant stage)	1.7	SEER program	SEER	n.a.
Cancer treatment:				
Cancer deaths per 100,000 persons per year for all cancers	1.8	HP2010 (3-1)	NVSS-M	NVSS-M
Cancer deaths per 100,000 persons per year for most common cancers: prostate cancer	1.9	HP2010 (3-7)	NVSS-M	NVSS-M
Cancer deaths per 100,000 persons per year for most common cancers: breast cancer	1.10	HP2010 (3-3)	NVSS-M	NVSS-M
Cancer deaths per 100,000 persons per year for most common cancers: lung cancer	1.11	HP2010 (3-2)	NVSS-M	NVSS-M
Cancer deaths per 100,000 persons per year for most common cancers: colorectal cancer	1.12	HP2010 (3-5)	NVSS-M	NVSS-M
Deaths per 1,000 admissions with esophageal resection for cancer	1.13	AHRQ-QI	HCUP NIS	n.a.
Deaths per 1,000 admissions with pancreatic resection for cancer	1.14	AHRQ-QI	HCUP NIS	n.a.

Measure	Measure number	Measure specifications a/	National database a/	State database a/
DIABETES				
Management of diabetes:				
Percent of adults with diabetes who had a hemoglobin A1c measurement at least once in past year	1.15	Specs for MEPS	MEPS	BRFSS
Percent of patients with diabetes who had a lipid profile in past 2 years	1.16	Specs for MEPS	MEPS	n.a.
Percent of adults with diabetes who had a retinal eye examination in past year	1.17	Specs for MEPS	MEPS	BRFSS
Percent of adults with diabetes who had a foot examination in past year	1.18	Specs for MEPS	MEPS	BRFSS
Percent of adults with diabetes who had an influenza immunization in past year	1.19	Specs for MEPS	MEPS	BRFSS
Percent of adults with diagnosed diabetes with HbA1c level > 9.0% (poor control); < 7.0% (optimal)	1.20	National Diabetes Quality Improvement Alliance	NHANES	n.a.
Percent of adults with diagnosed diabetes with most recent LDL-C level < 130 mg/dL(minimally acceptable); <100 (optimal)	1.21	National Diabetes Quality Improvement Alliance	NHANES	n.a.
Percent of adults with diagnosed diabetes with most recent blood pressure <140/90 mm/Hg	1.22	National Diabetes Quality Improvement Alliance	NHANES	n.a.
Hospital admissions for uncontrolled diabetes per 100,000 population	1.23	AHRQ-QI	HCUP NIS	HCUP SID
Hospital admissions for short term complications of diabetes per 100,000 population	1.24	AHRQ-QI	HCUP NIS	HCUP SID
Hospital admissions for long-term complications of diabetes per 100,000 population	1.25	AHRQ-QI	HCUP NIS	HCUP SID
Hospital admissions for lower extremity amputations in patients with diabetes	1.26	HP 2010 (5-10)	NHDS	HCUP SID
END STAGE RENAL DISEASE				
Management of end stage renal disease:				
Percent of dialysis patients registered on waiting list for transplantation	1.27	HP2010 4-5	USRDS	USRDS
Percent of patients with treated chronic kidney failure who receive a transplant within 3 years of renal failure	1.28	HP2010 4-6	USRDS	USRDS
Percent of hemodialysis patients with URR 65 or greater	1.29	CMS	ESRD Clinical Performance Measures Project	U.Michigan
Percent of patients with hematocrit 33 or greater or hemoglobin 11 or greater	1.30	CMS	ESRD Clinical Performance Measures Project	U.Michigan
Patient survival rate	1.31	CMS	n.a.	U.Michigan

Measure	Measure number	Measure specifications a/	National database a/	State database a/
Use of arteriovenous fistulas - new hemodialysis patients (aged 18 years and over)	1.32	CMS	ESRD Clinical Performance Measures Project	n.a.
HEART DISEASE				
Screening for high blood pressure:				
Percent of people age 18 and over who have had blood pressure measured within preceding 2 years and can state whether their blood pressure is normal or high	1.33	HP2010 (12-12)	NHIS	BRFSS
Screening for high cholesterol:				
Percent of adults 18 and over receiving cholesterol measurement within 5 years	1.34	HP2010 (12-15)	NHIS	BRFSS
Counseling on risk factors:				
Percent of smokers receiving advice to quit smoking	1.35	HP2010 (1-3c)	MEPS	BRFSS
Treatment of AMI:				
Percent of AMI patients administered aspirin within 24 hours of admission	1.36	QIO scope of work	QIO	QIO
Percent of AMI patients with aspirin prescribed at discharge	1.37	QIO scope of work	QIO	QIO
Percent of AMI patients administered beta-blocker within 24 hours of admission	1.38	QIO scope of work	QIO	QIO
Percent of AMI patients with beta-blocker prescribed at discharge	1.39	QIO scope of work	QIO	QIO
Percent of AMI patients with left ventricular systolic dysfunction prescribed ACE inhibitor at discharge	1.40	QIO scope of work	QIO	QIO
Percent of AMI patients given smoking cessation counseling while hospitalized	1.41	QIO scope of work	QIO	QIO
Median time in minutes to thrombolysis. Time from arrival to initiation of a thrombolytic agent in patients with ST segment elevation or left bundle branch block (LBBB) on the electrocardiogram (ECG) performed closest to hospital arrival time	1.42	QIO scope of work	QIO	QIO
Median time in minutes to PTCA. Median time from arrival to percutaneous transluminal coronary angioplasty (PTCA) in patients with ST segment elevation or left bundle branch block (LBBB) on the electrocardiogram (ECG) performed closest to hospital arrival time.	1.43	QIO scope of work	QIO	QIO

Measure	Measure number	Measure specifications a/	National database a/	State database a/
Treatment of acute heart failure:				
Percent of heart failure patients having evaluation of left ventricular ejection fraction	1.44	QIO scope of work	QIO	QIO
Percent of heart failure patients with left ventricular systolic dysfunction prescribed ACE inhibitor at discharge	1.45	QIO scope of work	QIO	QIO
Management of hypertension:				
Percent of people with hypertension who have blood pressure under control	1.46	HP2010 (12-10)	NHANES	n.a.
Management of CHF:				
Hospital admissions for congestive heart failure (CHF)	1.47	HP2010 (12-6)	NHDS	HCUP SID
Heart disease treatment:				
Pediatric heart surgery mortality rate (number of deaths per 1,000 heart surgeries in patients under age 18 years)	1.48	AHRQ-QI	HCUP NIS	n.a.
Abdominal aortic aneurysm (AAA) repair mortality rate (number of deaths per 1,000 AAA repairs)	1.49	AHRQ-QI	HCUP NIS	n.a.
Coronary artery bypass graft (CABG) mortality rate (number of deaths per 1,000 CABG procedures)	1.50	AHRQ-QI	HCUP NIS	n.a.
Percutaneous transluminal coronary angioplasty (PTCA) mortality rate (number of deaths per 1,000 PTCAs)	1.51	AHRQ-QI	HCUP NIS	n.a.
Acute myocardial infarction (AMI) mortality rate (number of deaths per 1,000 discharges for AMI)	1.52	AHRQ-QI	HCUP NIS	n.a.
Congestive heart failure (CHF) mortality rate (number of deaths per 1,000 discharges for CHF)	1.53	AHRQ-QI	HCUP NIS	n.a.
HIV AND AIDS				
AIDS prevention:				
New AIDS cases per 100,000 population (age 13 and over)	1.54	HP2010 (13-1)	CDC-AIDS	n.a.
Management of HIV/AIDS:				
HIV-infection deaths per 100,000 population	1.55	HP2010 (13-14)	NVSS-M	NVSS-M
MATERNAL AND CHILD HEALTH				
Maternity care:				
Percent of pregnant women receiving prenatal care in first trimester	1.56	HP2010 (16-6a)	NVSS-N	NVSS-N
Percent of live-born infants with low and very low birthweight (less than 2,500 grams, less than 1,500 grams)	1.57	HP2010 (16-10)	NVSS-N	NVSS-N

Measure	Measure number	Measure specifications a/	National database a/	State database a/
Infant mortality per 1,000 live births	1.58	HP2010 (16-1c)	NVSS-I	NVSS-I
Maternal deaths per 100,000 live births	1.59	HP2010 (16-4)	NVSS-M	NVSS-M
Immunization, childhood:				
Percent of children 19-35 months who received all recommended vaccines	1.60	HP2010 (14-24a)	NIS	NIS
Immunization, adolescent:				
Percent of adolescents (age 13-15) reported to have received 3 or more doses of hepatitis B vaccine	1.61	HP2010 (14-27a)	NHIS	n.a.
Percent of adolescents (age 13-15) reported to have received 2 or more doses of MMR vaccine	1.62	HP2010 (14-27b)	NHIS	n.a.
Percent of adolescents (age 13-15) reported to have received 1 or more doses of tetanus-diphtheria booster	1.63	HP2010 (14-27c)	NHIS	n.a.
Percent of adolescents (age 13-15) reported to have received 1 or more doses of varicella vaccine	1.64	HP2010 (14-27d)	NHIS	n.a.
Childhood dental care:				
Percent of children age 2-17 who report dental visit in last year	1.65	HP 2010 (21-10)	MEPS	n.a.
Treatment of pediatric gastroenteritis:				
Hospital admissions for pediatric gastroenteritis per 100,000 population less than 18 years of age	1.66	AHRQ-QI	HCUP NIS	HCUP SID
Childhood preventive care:				
Percent of children under age 18 who had their height and weight measured by a doctor or other health provider	1.67	Specs for MEPS	MEPS	n.a.
Percent of children age 2-17 for whom a doctor or other health provider gave advice about amount and kind of physical activity	1.68	Specs for MEPS	MEPS	n.a.
Percent of children age 2-17 for whom a doctor or other health provider gave advice about eating healthy	1.69	Specs for MEPS	MEPS	n.a.
Percent of children age 3-6 whose vision was checked by a doctor or other health provider	1.70	Specs for MEPS	MEPS	n.a.
Percent of children under age 18 for whom a doctor or other health provider gave advice about how smoking in the house can be harmful	1.71	Specs for MEPS	MEPS	n.a.
Percent of children under age 18 for whom a doctor or other health provider gave advice about using car safety restraints	1.72	Specs for MEPS	MEPS	n.a.
Percent of children age 2-17 for whom a doctor or other health provider gave advice about using a helmet when riding a bicycle or motorcycle	1.73	Specs for MEPS	MEPS	n.a.

Measure	Measure number	Measure specifications a/	National database a/	State database a/
MENTAL HEALTH				
Treatment of depression:				
Percent of adults diagnosed with a new episode of depression who had optimal practitioner contacts for medication management during the acute treatment phase	1.74	NCQA	HEDIS	n.a.
Percent of adults diagnosed with a new episode of depression and initiated on an antidepressant drug who received a continuous trial of medication treatment during the acute treatment phase	1.75	NCQA	HEDIS	n.a.
Percent of adults diagnosed with a new episode of depression and initiated on an antidepressant drug who remained on an antidepressant medication through the continuation phase of treatment	1.76	NCQA	HEDIS	n.a.
Deaths due to suicide per 100,000 population	1.77	HP2010 (18-1)	NVSS-M	NVSS-M
RESPIRATORY DISEASES				
Immunization, influenza:				
Percent of high risk persons (e.g. COPD) age 18-64 who received an influenza vaccination in the past 12 months	1.78	HP2010 (14-29c)	NHIS	BRFSS
Percent of persons age 65 and over who received an influenza vaccination in the past 12 months	1.79	HP2010 (14-29a)	NHIS	BRFSS
Percent of institutionalized adults (persons in long-term care or nursing homes) who received influenza vaccination in past 12 months	1.80	HP2010 (14-29e)	NNHS	n.a.
Hospital admissions for immunization-preventable influenza per 100,000 population age 65 and over	1.81	HP2010 (1-9c, approximate) AHRQ-QI	HCUP NIS	HCUP SID
Immunization, pneumonia:				
Percent of high risk persons (e.g. COPD) age 18-64 who ever received a pneumococcal vaccination	1.82	HP2010 (14-29d)	NHIS	BRFSS
Percent of persons age 65 and over who ever received a pneumococcal vaccination	1.83	HP2010 (14-29b)	NHIS	BRFSS
Percent of institutionalized adults (persons in long-term care or nursing homes) who ever received pneumococcal vaccination	1.84	HP2010 (14-29f)	NNHS	n.a.
Treatment of pneumonia:				
Percent of patients with pneumonia who have blood cultures collected before antibiotics are administered	1.85	QIO scope of work	QIO	QIO
Percent of patients with pneumonia who receive the initial antibiotic dose within 4 hours of hospital arrival	1.86	QIO scope of work	QIO	QIO

Measure	Measure number	Measure specifications a/	National database a/	State database a/
Percent of patients with pneumonia who receive the initial antibiotic consistent with current recommendations	1.87	QIO scope of work	QIO	QIO
Percent of patients with pneumonia who receive influenza screening or vaccination	1.88	QIO scope of work	QIO	QIO
Percent of patients with pneumonia who receive pneumococcal screening or vaccination	1.89	QIO scope of work	QIO	QIO
Pneumonia mortality rate (number of deaths per 1,000 discharges for pneumonia)	1.90	AHRQ-QI	HCUP NIS	n.a.
Treatment of URI:				
Visit rates where antibiotics were prescribed for a diagnosis of common cold per 10,000 population	1.91	HP2010 (14-19)	NAMCS-NHAMCS	n.a
Management of asthma:				
Percent of people with persistent asthma who are prescribed medications acceptable as primary therapy for long-term control of asthma (inhaled corticosteroids)	1.92	NCQA	HEDIS	n.a.
Hospital admissions for pediatric asthma (under age 18)	1.93	HP2010 (24-2, 1-9a)	NHDS	HCUP SID
Hospital admissions for asthma age 18 and over	1.94	HP2010 (24-2)	NHDS	HCUP SID
Hospital admissions for asthma age 65 and over	1.95	AHRQ-QI	HCUP NIS	HCUP SID
Treatment of TB				
Percent of TB patients that complete a curative course of TB treatment within 12 months of initiation of treatment	1.96	HP2010 (14-12)	CDC, TB	n.a.
NURSING HOME AND HOME HEALTH CARE				
Nursing facility care:				
Percent of residents whose need for help with daily activities has increased	1.97	CMS	n.a.	MDS
Percent of residents who have moderate to severe pain	1.98	CMS	n.a.	MDS
Percent of residents who were physically restrained	1.99	CMS	n.a.	MDS
Percent of residents who spent most of their time in bed or in a chair	1.100	CMS	n.a.	MDS
Percent of residents whose ability to move about in and around their room got worse	1.101	CMS	n.a.	MDS
Percent of residents with a urinary tract infection	1.102	CMS	n.a.	MDS
Percent of residents who have become more depressed or anxious	1.103	CMS	n.a.`	MDS
Percent of high risk residents who have pressure sores	1.104	CMS	n.a.	MDS
Percent of low risk residents who have pressure sores	1.105	CMS	n.a.	MDS

Measure	Measure number	Measure specifications a/	National database a/	State database a/
Percent of low risk residents who lose control of their bowels or bladder	1.106	CMS	n.a.	MDS
Percent of residents who have/had a catheter inserted and left in their bladder	1.107	CMS	n.a.	MDS
Percent of short stay residents who had moderate to severe pain	1.108	CMS	n.a.	MDS
Percent of short stay residents with delirium	1.109	CMS	n.a.	MDS
Percent of short stay residents with pressure sores	1.110	CMS	n.a.	MDS
Home health care:				
Improvement in upper body dressing	1.111	CMS	n.a.	OASIS
Improvement in management of oral medications	1.112	CMS	n.a.	OASIS
Improvement in bathing	1.113	CMS	n.a.	OASIS
Stabilization in bathing	1.114	CMS	n.a.	OASIS
Improvement in transferring	1.115	CMS	n.a.	OASIS
Improvement in ambulation/locomotion	1.116	CMS	n.a.	OASIS
Improvement in toileting	1.117	CMS	n.a.	OASIS
Improvement in pain interfering with activity	1.118	CMS	n.a.	OASIS
Improvement in dyspnea	1.119	CMS	n.a.	OASIS
Improvement in urinary incontinence	1.120	CMS	n.a.	OASIS
Improvement in confusion frequency	1.121	CMS	n.a.	OASIS
Acute care hospitalization	1.122	CMS	n.a.	OASIS
PATIENT SAFETY				
Complications of care:				
Birth trauma-injury to neonate	2.1	AHRQ-QI	HCUP NIS	n.a.
Death in low mortality DRGs	2.2	AHRQ-QI	HCUP NIS	n.a.
Failure to rescue	2.3	AHRQ-QI	HCUP NIS	n.a.
Transfusion reactions (discharge-based) and transfusion reactions (area-based)	2.4	AHRQ-QI	HCUP NIS	n.a.
Foreign body accidentally left in body during procedure (discharge-based) and foreign body accidentally left in body during procedure (area-based)	2.5	AHRQ-QI	HCUP NIS	n.a.
Central line-associated bloodstream infection in ICU patients	2.6	HP2010 (14-20b)	NNIS	n.a.
Central line-associated bloodstream infection in infants weighing 1,000 grams or less at birth in intensive care	2.7	HP2010 (14-20d)	NNIS	n.a.
Complications of anesthesia	2.8	AHRQ-QI	HCUP NIS	n.a.
Decubitus ulcers	2.9	AHRQ-QI	HCUP NIS	n.a.
Iatrogenic pneumothorax (discharge-based) and iatrogenic pneumothorax (area-based)	2.10	AHRQ-QI	HCUP NIS	n.a.
Selected infections due to medical care (discharge-based) and selected infections due to medical care (area-based)	2.11	AHRQ-QI	HCUP NIS	n.a.
Postoperative hip fractures	2.12	AHRQ-QI	HCUP NIS	n.a.
Postoperative hemorrhage or hematoma	2.13	AHRQ-QI	HCUP NIS	n.a.

Measure	Measure number	Measure specifications a/	National database a/	State database a/
Postoperative physiologic and metabolic derangements	2.14	AHRQ-QI	HCUP NIS	n.a.
Postoperative respiratory failure	2.15	AHRQ-QI	HCUP NIS	n.a.
Postoperative pulmonary embolism or deep venous thrombosis	2.16	AHRQ-QI	HCUP NIS	n.a.
Postoperative sepsis	2.17	AHRQ-QI	HCUP NIS	n.a.
Accidental puncture or laceration during procedures (discharge-based) and accidental puncture or laceration during procedures (area-based)	2.18	AHRQ-QI	HCUP NIS	n.a.
Reclosure of postoperative disruption of abdominal wall (discharge-based)and reclosure of postoperative disruption of abdominal wall (area-based)	2.19	AHRQ-QI	HCUP NIS	n.a.
Obstetrical trauma - vaginal with instrument	2.20	AHRQ-QI	HCUP NIS	n.a.
Obstetrical trauma - vaginal without instrument	2.21	AHRQ-QI	HCUP NIS	n.a.
Obstetric trauma - cesarean delivery	2.22	AHRQ-QI	HCUP NIS	n.a.
Intensive care unit patients - catheter-associated urinary tract infection	2.23	CDC	NNIS	n.a.
Intensive care unit patients - ventilator-associated pneumonia	2.24	CDC	NNIS	n.a.
Infants weighing 1,000 g or less at birth in intensive care - ventilator-associated pneumonia	2.25	CDC	NNIS	n.a.
Postoperative venous thromboembolic events	2.26	CMS	MPSMS	n.a.
Postoperative pneumonia events	2.27	CMS	MPSMS	n.a.
Mechanical adverse events associated with central vascular catheters (CVCs)	2.28	CMS	MPSMS	n.a.
Insertion-site infections associated with central vascular catheters (CVCs)	2.29	CMS	MPSMS	n.a.
Bloodstream infections (BSIs) associated with central vascular catheters (CVCs)	2.30	CMS	MPSMS	n.a.
Postoperative urinary tract Infections (UTIs)	2.31	CMS	MPSMS	n.a.
Ventilator-associated pneumonia (VAP) events	2.32	CMS	MPSMS	n.a.
Hospital-acquired bloodstream infections (BSIs)	2.33	CMS	MPSMS	n.a.
Adverse events associated with hip joint replacement due to degenerative conditions	2.34	CMS	MPSMS	n.a.
Adverse events associated with hip joint replacement due to fracture	2.35	CMS	MPSMS	n.a.
Adverse events associated with knee replacement	2.36	CMS	MPSMS	n.a.
Prescribing medications:				
Percent of community dwelling elderly who had at least 1 prescription (from a list of 11 medications and from a list of 33 medications) that is potentially inappropriate for the elderly	2.37	AHRQ	MEPS	n.a.
Percent of adults who report that usual source of care asks about prescription medications and treatments from other providers	2.38	Specs for MEPS	MEPS	n.a.

Measure	Measure number	Measure specifications a/	National database a/	State database a/
TIMELINESS				
Basic access:				
Percent of persons who report that they have a usual source of medical care, by place of care	3.1	HP2010 (1-4)	NHIS	n.a.
Percent of families who experienced difficulty in obtaining care, by reason	3.2	HP2010 (1-6)	MEPS	n.a.
Getting appointments for care:				
Among adults age 18 and over who reported making an appointment for routine health care in the last 12 months, percent distribution of how often they got an appointment as soon as wanted	3.3	Specs for MEPS	MEPS	NCBD
Among children under age 18 who had appointments reported for routine health care in the last 12 months, percent distribution of how often they got an appointment as soon as wanted	3.4	Specs for MEPS	MEPS	NCBD
Among adults age 18 and over who reported making an appointment for an illness or injury in the last 12 months, percent distribution of how often they got an appointment as soon as wanted	3.5	Specs for MEPS	MEPS	NCBD
Among children under age 18 who had appointments reported for an illness or injury in the last 12 months, percent distribution of how often they got an appointment as soon as wanted	3.6	Specs for MEPS	MEPS	NCBD
Waiting time:				
ED visits: Percent ED visits where patient was admitted to the hospital or transferred to other facility whose ED visit was greater than or equal to 6 hours	3.7	NCHS	NAMCS-NHAMCS	n.a.
ED visits: Percent of ED visits where patients left before being seen	3.8	NCHS	NAMCS-NHAMCS	n.a.
PATIENT CENTEREDNESS				
Patient experience of care:				
Among adults age 18 and over who reported going to a doctor's office or clinic in the last 12 months, percent distribution of how often their health providers listened carefully to them	4.1	Specs for MEPS	MEPS	NCBD
Among children under age 18 who had a doctor's office or clinic visit reported in the last 12 months, percent distribution of how often their health providers listened carefully to their parents	4.2	Specs for MEPS	MEPS	NCBD

Measure	Measure number	Measure specifications a/	National database a/	State database a/
Among adults age 18 and over who reported going to a doctor's office or clinic in the last 12 months, percent distribution of how often their health providers explained things clearly	4.3	Specs for MEPS	MEPS	NCBD
Among children under age 18 who had a doctor's office or clinic visit in the last 12 months, percent distribution of how often their health providers explained things clearly	4.4	Specs for MEPS	MEPS	NCBD
Among adults age 18 and over who reported going to a doctor's office or clinic in the last 12 months, percent distribution of how often their health providers showed respect for what they had to say	4.5	Specs for MEPS	MEPS	NCBD
Among children under age 18 who had a doctor's office or clinic visit in the last 12 months, percent distribution of how often their health providers showed respect for what their parents had to say	4.6	Specs for MEPS	MEPS	NCBD
Among adults age 18 and over who reported going to a doctor's office or clinic in the last 12 months, percent distribution of how often their health providers spent enough time with them	4.7	Specs for MEPS	MEPS	NCBD
Among children under age 18 who had a doctor's office or clinic visit in the last 12 months, percent distribution of how often their health providers spent enough time with them and their parents	4.8	Specs for MEPS	MEPS	NCBD
OVERALL MEASURES				
Among adults age 18 and over who reported going to a doctor's office or clinic in the last 12 months, percent giving a best rating for health care received	5.1	Specs for MEPS	MEPS	NCBD
Among children under age 18 who had a doctor's office or clinic visit in the last 12 months, percent of parents giving a best rating for health care received	5.2	Specs for MEPS	MEPS	NCBD
Life expectancy (at birth, at age 65)	5.3		NVSS-M	n.a.

a/ AHRQ-QI=AHRQ Healthcare Cost and Utilization Project Quality Indicators (prevention, inpatient and patient safety indicators)
BRFSS=Behavioral Risk Factor Surveillance System
CDC TB=Centers for Disease Control & Prevention National Tuberculosis Surveillance System
CDC AIDS = Centers for Disease Cotrol HIV/AIDS Surveillance System
CMS=The Centers for Medicare & Medicaid Services
HCUP NIS=Healthcare Cost and Utilization Project Nationwide Inpatient Sample
HCUP SID=Healthcare Cost and Utilization Project State Inpatient Databases
HP2010=Healthy People 2010
ESRD CPMP=End-Stage Renal Disease Clinical Performance Measures Project
HEDIS=Health Plan Employer Data and Information Set
MEPS=Medical Expenditure Panel Survey
MPSMS=Medicare Patient Saftety Monitoring System

MQMS=Medicare Quality Monitoring System
MDS=Minimum Data Set
NAMCS=National Ambulatory Medical Care Survey
NCBD=National CAHPS® Benchmarking Database
NCQA=National Committee for Quality Assurance's HEDIS measure set
NHANES=National Health and Nutrition Examination Survey
NHIS=National Health Interview Survey
NHHCS=National Home and Hospice Care Survey
NHAMCS=National Hospital Ambulatory Medical Care Survey
NHDS=National Hospital Discharge Survey
NIS=National Immunization Survey
NNIS=National Nosocomial Infections Surveillance
NNHS=National Nursing Home Survey
NTBSS=National TB Surveillance System
NVSS-I=National Vital Statistics System —Linked Birth and Infant Death Data
NVSS-M=National Vital Statistics System, Mortality
NVSS-N=National Vital Statistics System, Natality
OASIS=Outcome and Assessment Information Set
QIO=Quality Improvement Organization
SEER=Surveillance, Epidemiology, and End Results Program
USRDS=United States Renal Data System
U.Michigan=University of Michigan Kidney Epidemiology and Cost Center

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