COMMISSION ON A HIGH PERFORMANCE HEALTH SYSTEM

NATIONAL SCORECARD ON U.S. HEALTH SYSTEM PERFORMANCE: TECHNICAL REPORT

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ABSTRACT: Created by the Commonwealth Fund Commission on a High Performance Health System, the *National Scorecard on U.S. Health System Performance* is the first-ever comprehensive means of measuring and monitoring health care outcomes, quality, access, efficiency, and equity in one report. Its findings indicate that America's health system falls far short of what is attainable, especially given the resources the nation invests. Across 37 indicators of performance, the U.S. achieves an overall score of 66 out of a possible 100 when comparing actual national performance to achievable benchmarks. Scores on efficiency are particularly low. This report explains how the Scorecard works, describes results for each domain of performance, and discusses implications for policies to improve quality, access, and cost performance.

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EXECUTIVE SUMMARY

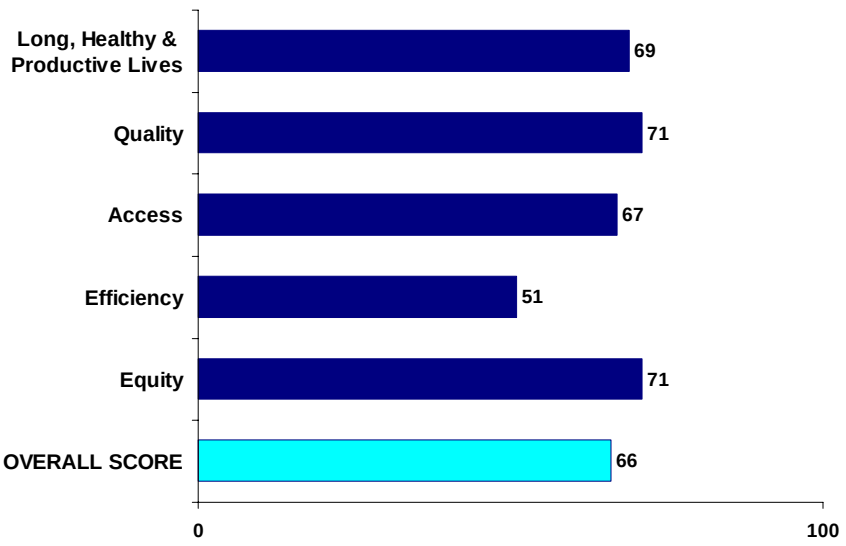
The United States is among the world leaders in medical science and spends more on health care than any other country. It has a health care system that includes models of excellence studied by others. Yet, growing evidence indicates the system falls short given the high level of resources committed to health care. Although national health spending is significantly higher than the average rate of other industrialized countries, the U.S. is the only industrialized country that fails to guarantee universal health insurance, and coverage is deteriorating, leaving millions without affordable access to preventive and essential health care. Quality of care is highly variable and delivered by a system that is too often poorly coordinated, driving up costs, and putting patients at risk. With rising costs straining family, business, and public budgets, deteriorating access, and variable quality, improving health care performance is a matter of national urgency.

The Commonwealth Fund Commission on a High Performance Health System has developed a National Scorecard on U.S. Health System Performance (see Table 1 on pages xiv–xv for scores on 37 key indicators). The Scorecard assesses how well the U.S. health system is performing as a whole *relative to what is achievable*. It provides benchmarks for the nation and a mechanism for monitoring change over time across core health care system goals related to health outcomes, quality, access, efficiency, and equity.

Scores come from ratios that compare the U.S. national average performance to benchmarks, which represent top performance. If performance in the United States were uniform for each of the health system goals, and if, in those instances in which U.S. performance can be compared with other countries, we were consistently at the top, the average score for the U.S. would be 100. However, the U.S. as a whole scores an average of 66 (Exhibit ES-1). The score reflects the substantial gaps between national average rates and benchmarks of higher performance.

The Scorecard examines multiple indicators for each of the goal areas or dimensions of health system performance. Wide gaps between national average rates and benchmarks spanned diverse indicators, with scores in core Scorecard domains ranging from 51 to 71.

Exhibit ES-1



Source: Commonwealth Fund National Scorecard on U.S. Health System Performance, 2006

By showing the gaps between national performance and achievable benchmarks, the Scorecard offers performance targets for improvement. It also provides a foundation for the development of public and private policy action, and a yardstick against which to measure the success of new policies.

On multiple key indicators, the United States would need to improve its performance by 50 percent or more to reach benchmark rates.

Scorecard Highlights and Leading Indicators

Table 1 on pages xiv–xv summarizes U.S. average rates on 37 indicators, their benchmark comparison rates—typically those achieved by the top 10 percent of countries, states, regions, health plans, hospitals, or other providers—and the U.S. average score, calculated as the ratio between U.S. performance and benchmark rate. In just a few instances the benchmarks represent targets, rather than achieved top performance. The sources of the benchmarks are shown in the Table.

Some major findings include:

Health Outcomes—Leading Long, Healthy, and Productive Lives: Total Average Score 69

- The U.S. is one-third worse than the best country on mortality from conditions "amenable to health care"—that is, deaths that could have been prevented with timely and effective care. The U.S. average adult disability rate is one-fourth worse than the best five U.S. states, as is the rate of children missing 11 or more days of school because of illness or injury.
- The U.S. fairs poorly at both the beginning and end of life. The U.S. ranks last on infant mortality, at 7.0 deaths per 1,000 live births, compared with 2.7 in the top three countries. The U.S. also tied for last among countries on healthy life expectancy at birth or at age 60.

Quality: Total Average Score 71

- Despite documented benefits of timely preventive care, barely half of adults (49%) received preventive and screening tests according to guidelines for their age and sex.
- The current gap between national average rates of diabetes and blood pressure control and rates achieved by the top 10 percent of health plans translates into an estimated 20,000 to 40,000 preventable deaths and $1 billion to $2 billion in avoidable medical costs.
- Only half of patients with congestive heart failure receive written discharge instructions regarding care following their hospitalization, with a nearly tenfold spread between top- and bottom-tier groups of hospitals (9% to 87%).
- Nursing home hospital admission and readmission rates in the bottom 10 percent of states are two times higher than the top 10 percent of states.

Access: Total Average Score 67

- In 2003, one-third (35%) of adults under 65 (61 million) were either underinsured or were uninsured during the year.
- One-third (34%) of all adults under 65 have problems paying their medical bills or have medical debt they are paying off over time. And premiums are increasingly stretching median household incomes.

Efficiency: Total Average Score 51

- Preventable hospital admissions for patients with diabetes, congestive heart failure, asthma, and other ambulatory care sensitive (ACS) conditions were twice the level achieved by the top states. Medicare ACS admissions also vary widely across regions and states, driving up Medicare costs.
- Hospital 30-day readmission rates for Medicare patients ranged from 14 percent to 22 percent across regions. Bringing readmission rates down to the levels achieved by the top-performing regions would save Medicare $1.9 billion annually.
- Annual Medicare costs of care average $32,000 for patients with congestive heart failure, diabetes, and chronic lung disease, with a twofold spread in costs across geographic regions.
- Analysis of one-year mortality rates and annual costs for Medicare patients with heart attacks, colon cancer, or hip fractures further indicate that Medicare could improve outcomes and reduce costs by moving toward benchmarks of higher quality/lower resource use.
- As a share of total health expenditures, U.S. insurance administrative costs were more than three times the costs in those countries with the most integrated insurance systems—7.3 percent compared with about 2 percent. The U.S. rate is also far higher than that of the next highest country, Germany, at 5.6 percent.
- The U.S. lags well behind other nations in use of electronic medical records: 17 percent of U.S doctors, compared with 60 to 90 percent in top countries.

Equity: Total Average Score: 71

- On multiple indicators across quality of care and access to care, there is a wide gap between low-income or uninsured populations and those with higher incomes and insurance. On average, low-income and uninsured rates would need to improve by one-third to close the gap.
- On average, it would require a 20 percent decrease in Hispanic risk rates to reach benchmark white rates on key indicators of quality, access, and efficiency. Hispanics are at particularly high risk of being uninsured, lacking a regular source of primary care, and not receiving essential preventive care.
- Overall, it would require a 24 percent or greater improvement in African American mortality, quality, access, and efficiency indicators to approach benchmark white rates. Blacks are much more likely to die at birth or from chronic conditions such as heart disease and diabetes. Blacks also have significantly lower rates of cancer survival.

System Capacity to Innovate and Improve (Not Scored)

Innovations in the ways care is delivered—from more integrated decision-making and information-sharing to better workforce retention and team-oriented care—are necessary to make strides in all dimensions of care.

Investment in research to assess effectiveness, develop evidence-based guidelines, or support innovations in care delivery is low. Current federal investment in health services research, estimated at $1.5 billion, amounts to less than $1 out of every $1,000 in national health care spending. Ideally, a national Scorecard would include indicators of the system's capacity to innovate and improve, but good indicators in this area are not currently available—itself a problem.

Summary and Implications

The Case for a Systems Approach to Change

The Scorecard results make a compelling case for change. Simply put, we fall far short of what is achievable on all major dimensions of health system performance. The overwhelming picture that emerges is one of missed opportunities—at every level of the system—to make American health care truly the best that money can buy.

And let there be no doubt, these results are not just numbers. Each statistic—each gap in actual versus achievable performance—represents illness that can be avoided, deaths that can be prevented, and money that can be saved or reinvested. In fact, if we closed just those gaps that are described in the Scorecard—we could save at least $50 billion to $100 billion per year in health care spending and prevent 100,000 to 150,000 deaths. Moreover, the nation would gain from improved productivity. The Institute of Medicine, for example, estimates national economic gains of up to $130 billion per year from insuring the uninsured.

The central messages from the Scorecard are clear:

- Universal coverage and participation are essential to improve quality and efficiency, as well as access to needed care.
- Quality and efficiency can be improved together; we must look for improvements that yield both results. Preventive and primary care quality deficiencies undermine outcomes for patients and contribute to inefficiencies that raise the cost of care.
- Failures to coordinate care for patients over the course of treatment put patients at risk and raise the cost of care. Policies that facilitate and promote linking providers and information about care will be essential for productivity, safety, and quality gains.

- Financial incentives posed by the current fee-for-service system of payment undermine efforts to improve preventive and primary care, manage chronic conditions, and coordinate care. We need to devise payment incentives to reward more effective and efficient care, with a focus on value.
- Research and investment in data systems are important keys to progress. Investment in, and implementation of, electronic medical records and modern health information technology in physician offices and hospitals is low—leaving physicians and other providers without useful tools to ensure reliable, high-quality care.
- Savings can be generated from more efficient use of expensive resources, including more effective care in the community to control chronic disease and ensure patients have timely access to primary care. The challenge is finding ways to re-channel these savings into investments in improved coverage and the system capacity necessary to improve performance.
- Setting national goals for improvement based on best-achieved rates is likely to be an effective method to motivate change and move the overall distribution to higher levels.

The Scorecard underscores the importance of a strategic focus that unites access, quality, and efficiency goals. Our health system needs to focus on improving health outcomes for people over the course of their lives, as they move from place to place and from one site of care to another. This requires a degree of organization and coordination that we currently lack. Whether through more integrated health care delivery organizations, more accountable physician groups, or more integrated health information systems (in truth, likely all of these), we need to link patients, care teams, and information together. At the same time, we need to deliver safer and more reliable care.

Furthermore, the extremely high costs of treating patients with multiple chronic diseases, as detailed in this report, serve as a reminder that a minority of very sick patients in the U.S. account for a high proportion of national health care expenditures. Payment policies that support integrated, team-based approaches to managing patients with multiple, complex conditions—along with efforts to engage patients in care self-management—will be of paramount importance as the population continues to age.

The Scorecard indicates that the U.S. can do better given the level of resources committed to health care. By assessing the nation's health care against achievable benchmarks, the Scorecard, in a sense, tracks the vital signs of our health system. With rising costs and deteriorating coverage, leadership to transform the health system is urgently needed to secure a healthy nation.

Table 1. National Scorecard on U.S. Health System Performance

	Indicator	U.S. National Rate	Benchmark	Benchmark Rate	*Score:* Ratio of U.S. to Benchmark
1.	**Mortality amenable to health care,** Deaths per 100,000 population	**115**	Top 3 of 19 countries	**80**	**70**
2.	**Infant mortality,** Deaths per 1,000 live births	**7.0**	Top 3 of 23 countries	**2.7**	**39**
3.	**Healthy life expectancy at age 60,** Years	**16.6**	Top 3 of 23 countries	**19.1**	**87**
4.	**Adults under 65 limited in any activities because of physical, mental, or emotional problems,** %	**14.9**	Top 10% states	**11.5**	**77**
5.	**Children missed 11 or more school days due to illness or injury,** %	**5.2**	Top 10% states	**3.8**	**73**
6.	**Adults received recommended screening and preventive care**, %	**49**	Target	**80**	**61**
7.	**Children received recommended immunizations and preventive care***	Various	Various	Various	**85**
8.	**Needed mental health care and received treatment***	Various	Various	Various	**66**
9.	**Chronic disease under control***	Various	Various	Various	**61**
10.	**Hospitalized patients received recommended care for AMI, CHF and pneumonia % composite**	**84**	Top hospitals	**100**	**84**
11.	**Adults under 65 with accessible primary care provider,** %	**66**	65+ yrs, High income	**84**	**79**
12.	**Children with a medical home,** %	**46**	Top 10% states	**60**	**77**
13.	**Care coordination at hospital discharge***	Various	Various	Various	**70**
14.	**Nursing homes: hospital admissions and readmissions among residents***	Various	Various	Various	**64**
15.	**Home health: hospital admissions,** %	**28**	Top 25% agencies	**17**	**62**
16.	**Patients reported medical, medication, or lab test error,** %	**34**	Best of 6 countries	**22**	**65**
17.	**Unsafe drug use***	Various	Various	Various	**60**
18.	**Nursing home residents with pressure sores***	Various	Various	Various	**67**
19.	**Hospital-standardized mortality ratios,** actual to expected deaths	**101**	Top 10% hospitals	**85**	**84**
20.	**Ability to see doctor on same/next day when sick or needed medical attention,** %	**47**	Best of 6 countries	**81**	**58**
21.	**Very/somewhat easy to get care after hours without going to the emergency room,** %	**38**	Best of 6 countries	**72**	**53**
22.	**Doctor–patient communication: always listened, explained, showed respect, spent enough time,** %	**54**	90th percentile Medicare plans	**74**	**74**

	Indicator	U.S. National Rate	Benchmark	Benchmark Rate	*Score:* Ratio of U.S. to Benchmark
23.	**Adults with chronic conditions given self-management plan,** %	**58**	Best of 6 countries	**65**	**89**
24.	**Patient-centered hospital care***	Various	Various	Various	**87**
25.	**Adults under 65 insured all year, not underinsured,** %	**65**	Target	**100**	**65**
26.	**Adults with no access problem due to costs,** %	**60**	Best of 5 countries	**91**	**66**
27.	**Families spending <10% of income or <5% of income, if low-income, on out of pocket medical costs and premiums,** %	**83**	Target	**100**	**83**
28.	**Population under 65 living in states where premiums for employer-sponsored health coverage are <15% of under-65 median household income,** %	**58**	Target	**100**	**58**
29.	**Adults under 65 with no medical bill problems or medical debt,** %	**66**	Target	**100**	**66**
30.	**Potential overuse or waste***	Various	Various	Various	**48**
31.	**Went to ER for condition that could have been treated by regular doctor,** %	**26**	Best of 6 countries	**6**	**23**
32.	**Hospital admissions for ambulatory care sensitive conditions***	Various	Various	Various	**57**
33.	**Medicare hospital 30-day readmission rates,** %	**18**	10th percentile regions	**14**	**75**
34.	**Medicare annual costs of care and mortality for AMI, hip fracture, and colon cancer** (Annual Medicare outlays; deaths per 100 beneficiaries)	**$26,829; 30**	10th percentile regions	**$23,314; 27**	**88**
35.	**Medicare annual costs of care for chronic diseases: Diabetes, CHF, COPD***	Various	Various	Various	**68**
36.	**Percent of national health expenditures spent on health administration and insurance**, %	**7.3**	Top 3 of 11 countries	**2.0**	**28**
37.	**Physicians using electronic medical records**, %	**17**	Top 3 of 19 countries	**80**	**21**
	OVERALL SCORE				**66**

* Various denotes indicators that comprise two or more related measures. Scores average the individual ratios for each component. For detailed information on the national and benchmark rates for individual components, please refer to C. Schoen, K. Davis, S. K. H. How, and S. C. Schoenbaum, "U.S. Health System Performance: A National Scorecard," *Health Affairs* Web Exclusive (Sept. 20, 2006): w457–w475. For list see Note 1 on page 63.[1]

Commonwealth Fund National Scorecard on U.S. Health System Performance, 2006.

NATIONAL SCORECARD ON U.S. HEALTH SYSTEM PERFORMANCE: TECHNICAL REPORT

INTRODUCTION

The United States is among the world leaders in medical science and spends more on health care than any other country. Its health care system includes models of excellence studied by other countries. Yet, a growing body of evidence indicates that the health care system performance falls short, given the high level of resources committed to it.[2] Although national health spending is double the average rate of other industrialized countries, the U.S. is the only industrialized country that fails to guarantee universal health insurance.[3] Further, coverage is deteriorating, leaving millions without affordable access to preventive and essential health care. The quality of care is highly variable and delivered by a system that is often poorly coordinated, driving up costs and putting patients at risk. With rising health costs straining family, business, and public budgets and access to care deteriorating, improving performance is a matter of national urgency.

The *National Scorecard on U.S. Health System Performance* assesses how well the U.S. health system is performing as a whole relative to what is achievable—and, in fact, what has already been achieved by other countries or by certain U.S. states, regions, health care providers, or health plans. The Commonwealth Fund Commission on a High Performance Health System developed the Scorecard as a way to evaluate the quality of care, access to care, and efficiency of care in a single report. The Commission hopes the Scorecard will provide a tool for the nation to monitor system performance and focus attention on the potential for improvement, and to catalyze action.

The Scorecard findings indicate that we should be able to improve outcomes and gain net value for our investment in health care by developing policies that take a whole-system approach—rather than fragmented approach—based on the interdependencies of access, quality, and costs. This report outlines the conceptual framework of the Scorecard, presents findings, and discusses their implications.

The Scorecard: Framework and Methods

The National Scorecard builds on the framework developed by the Institute of Medicine's seminal reports on quality and insurance coverage.[4] It draws on indicators developed by the U.S. Department of Health and Human Services, Agency for Healthcare Research and Quality, and the Centers for Medicare and Medicaid Services, as well as the pioneering work of the National Quality Forum, National Committee for Quality Assurance, Joint Commission on the Accreditation of HealthCare Organizations, Institute for Healthcare Improvement, and other experts. In addition, it develops several new indicators, focusing on those that capture whole-system performance and the interrelationship of access, quality, and cost. The Commission offers this Scorecard with three central objectives in mind:

- to provide benchmarks for assessing performance;
- to provide a mechanism for monitoring change over time; and
- to provide a yardstick against which to assess the effects of existing or proposed national policies to improve performance of the U.S. health system.

The Scorecard assesses national performance across core health system goals organized into five domains or dimensions of performance: health outcomes, quality, access, equity, and efficiency. Within each dimension, the Commission identified priority areas and sentinel, or "whole-system," indicators where improvement would make a positive difference for the nation and where data currently exist to track and compare performance over time. The Commission selected key indicators for each dimension of performance that would enable comparisons of U.S. average performance levels to benchmarks drawn from national and international experiences. The Scorecard analyzes variations across geographic areas and population groups to identify achievable benchmarks and score performance. Gaps between current national performance and the benchmarks offer performance targets for public and private policy action. In addition to profiling performance across these five dimensions, the Scorecard also discusses the need to assess the nation's capacity for health care system innovation and improvement, and points to an initial set of indicators to track over time.

To highlight priority areas of concern, we grouped indicators in the quality dimension into four clusters: the right care (effective care), coordinated care, safe care, and patient-centered, timely care. To differentiate ineffective from effective care, the Scorecard assigns indicators of misuse to safety and overuse/waste to the efficiency domain. Access includes two priority areas: universal participation and affordability of coverage and care.

The analysis includes key indicators for each dimension of performance. Selection criteria for the indicators focused on areas where improvement could make a significant difference and information is readily accessible from national or international databases, with the potential for time-trend analyses. In all, the Scorecard includes 37 indicators for scoring, many of which are composites and unique to the Scorecard.

For each indicator, the Scorecard compares U.S. national performance with benchmarks of performance attained within the U.S. or internationally or, in a few instances, to policy goals. To score, we calculated a simple ratio of current U.S. national average performance to the benchmark, with a maximum score of 100. We averaged indicator ratios to summarize scores by priority areas and core dimensions of performance. (See box below for additional methodological details.)

This *Technical Report* presents detailed Scorecard findings and exhibits for key indicators and discusses crosscutting implications. An article published in the journal *Health Affairs* summarizes results and presents detailed scoring tables.[5] The *Complete Chartpack* provides graphics for all indicators, including equity comparisons, with a *Chartpack Technical Appendix* that describes indicators and data sources.[6] The charts illustrate the range of performance for each indicator. All reports, as well as a summary of the *Health Affairs* article, are available on the Commonwealth Fund Web site.

The 2006 Scorecard is a snapshot of health system performance using indicators currently available. As such, it offers a starting point for national discussion. In many cases, desired data for evaluating an important aspect of performance were not available or were available only in one-time studies. Future editions of the Scorecard will incorporate new indicators as these become available.

SCORING METHODOLOGY

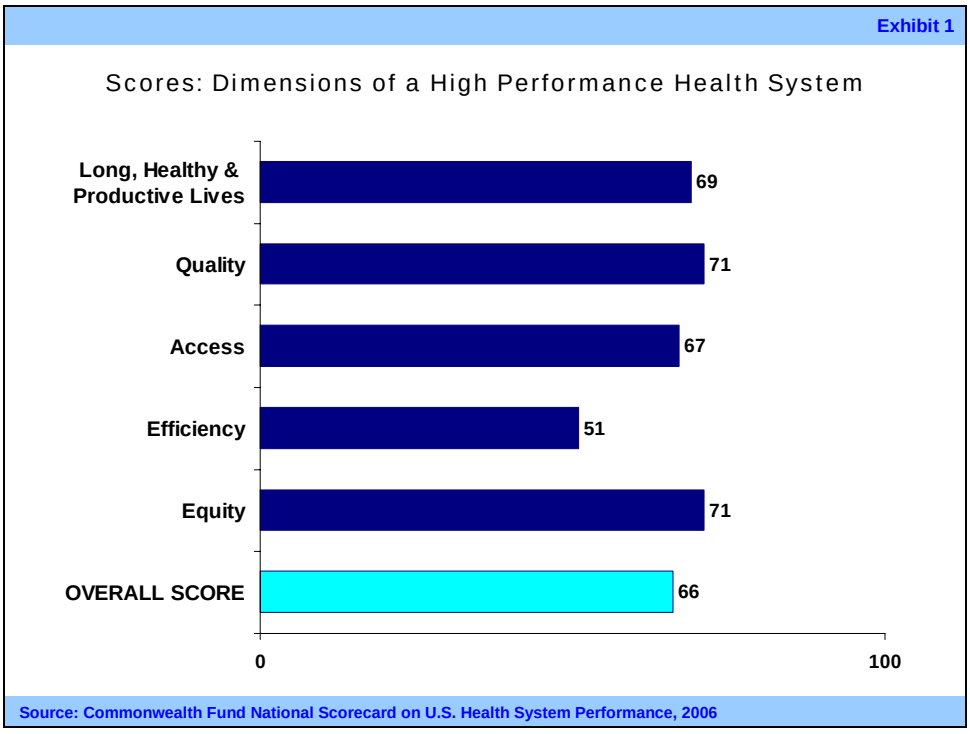
The Scorecard profiles performance across all critical aspects of the health care system: health outcomes, quality, access, equity, and efficiency. It includes key indicators for each dimension. The key indicators focus on areas where improvement could make a significant, positive difference. In total, the Scorecard includes 37 indicators selected by Commission members, with input from experts.

The report scores the U.S. national performance relative to benchmarks of higher performance, with a maximum score of 100. For each indicator, we identified the "best" benchmark rates based on the results for the top countries or the top 10 percent of U.S. states, hospitals, health plans, nursing homes, or other providers. The choice of benchmarks for each indicator reflects the specific indicator as well as the availability of data showing variations in performance. Where data were available only at the national level, we compared national rates with benchmarks based on the experiences of high-income, insured individuals. In general, benchmarks reflect the best performance achieved in some places for some people, but not "perfection." In four instances where there are logical policy goals, such as the percentage of the population with adequate insurance or thresholds for affordability, the benchmark is simply 100 percent. The Scorecard also uses target benchmarks for two quality indicators—adults getting all recommended preventive care and mental health care—since rates for even for high-income, insured adults fall well below accepted clinical guidelines.

To score, we calculated a simple ratio of current U.S. national average performance to the benchmark. Where higher rates would indicate a move in a positive direction, we divided the U.S. national average by the benchmark rate. Where lower rates would indicate a positive direction, we compared the lower, benchmark rate with the U.S. average. To summarize scores by priority area, we calculated the average of all indicator ratios for that dimension. For equity, we compared the percentage of the group at risk (e.g., not receiving recommended care or uninsured) on selected indicators by income, insurance, and race/ethnicity. The risk ratios compare white rates to blacks and Hispanics; high to low income; insured to uninsured. Exhibits published in the *Health Affairs* article provide scoring tables.

National Scorecard Findings Indicate Substantial Room for Improvement

Overall, the Scorecard indicates that the U.S. health system falls far short of what is attainable. U.S. performance relative to benchmarks of the "best" performance achieved, or in a few instances policy targets, averages around 50, for measures of health system efficiency, to 70, for measures of quality, access, equity, and the capacity of the system to enable people to live long, healthy, and productive lives. Across these five core dimensions of performance, the results yield an overall average score of 66. (Exhibit 1) This indicates that there are missed opportunities and substantial room for improvement.



The quality of care is remarkably variable and uneven across the nation. Benchmark rates of top-performing groups of U.S. hospitals, health plans, regions, and states, as well as international comparisons, indicate that it is possible to do better. On multiple indicators, there are wide gaps between the top-performing groups and national averages, and between national averages and those at the bottom of the distribution. In many instances, the top 10th percentile or top quartile of performance on quality indicators within the U.S. is quite good. But uneven performance and wide variation pull national averages down and put patients at risk.

Efficiency indicators reveal wide variations in both the cost and quality of health care, with better performance on quality often associated with lower cost. Analyses based

on Medicare data identify geographic areas that are among the top performers in quality of care and are also able to deliver care at resource cost levels that are low compared with national averages. High-performing areas typically have fewer physicians involved in the care of patients, thus contributing to better coordination, fewer hospital readmissions following discharge, and greater reliance on primary care.[7] These and other Scorecard findings suggest it would be possible to save lives and reduce the overall costs of care if the nation could develop strategic financing and delivery system policies to move toward benchmark levels achieved in the highest-performing regions of the U.S.

Scorecard findings across dimensions of care indicate that expanding insurance and ensuring affordable access to care are instrumental to improving system performance. Being uninsured or inadequately insured erects financial barriers to essential care, leads to poor control of chronic disease, and fosters inefficient care, including duplicate tests, errors, use of emergency rooms, and admissions to hospitals for potentially preventable conditions. Health outcomes and rates of getting the right care are one-third lower for the uninsured than for those with continuous insurance coverage. High and rising rates of uninsured and underinsured destabilize the health care delivery system and fuel inefficient use of resources. Without efforts to extend coverage and make care affordable, we risk losing ground on workforce health and national economic productivity.

The Scorecard provides evidence that strategic efforts to improve access, quality, and efficiency as well as investments in the system's capacity to improve would markedly improve outcomes. Across a range of indicators, opportunities exist to save lives, enhance the quality of life for those living with disease, and improve cost performance.

HEALTH OUTCOMES: LONG, HEALTHY, AND PRODUCTIVE LIVES

The overarching goal all Americans hold for the health care system is its capacity to help ensure long, healthy, and productive lives. On the indicators used to capture this dimension of performance, the U.S. scored an average 69 of a possible 100. (Exhibit 2) The low score reflects the extent to which average U.S. mortality and healthy life expectancy lag behind other nations, as well as the wide variations in health outcomes within the U.S.

Exhibit 2. Long, Healthy & Productive Lives Scores

DIMENSION AND INDICATOR	U.S. National Rate	Benchmark	Benchmark Rate	*Score:* Ratio of U.S. to Benchmark Rate
Mortality amenable to health care, Deaths per 100,000 population	115	Top 3 of 19 countries	80	**70**
Infant mortality, Deaths per 1,000 live births	7.0	Top 3 of 23 countries	2.7	**39**
Healthy life expectancy at age 60, Years **(Avg. 2 ratios):**				**87**
Men	15.3	Top 3 of 23 countries	17.4	88
Women	17.9	Top 3 of 23 countries	20.8	86
Adults under 65 limited in any activities because of physical, mental, or emotional problems, %	14.9	Top 10% states	11.5	**77**
Children missed 11 or more school days due to illness or injury, %	5.2	Top 10% states	3.8	**73**
TOTAL AVERAGE SCORE				***69***

Source: See Complete Chartpack and Technical Appendix for data source and date.

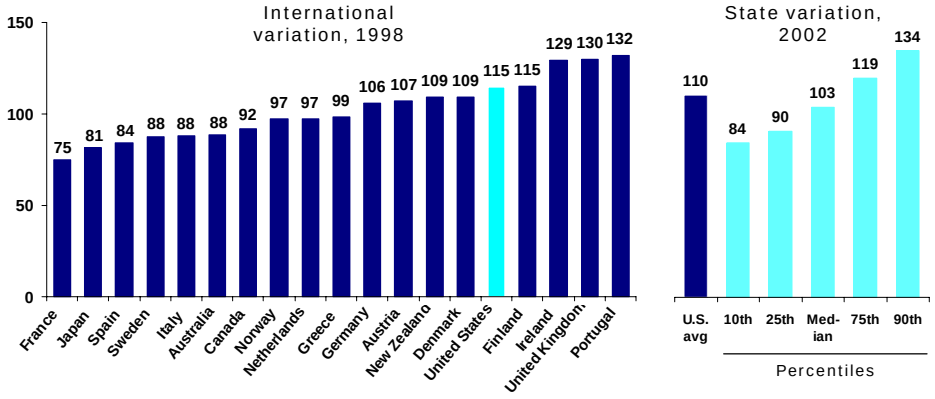
Measures of avoidable mortality gauge the extent to which health care services save lives and contribute to longer population life. An indicator comprised of mortality from conditions amenable to health care, widely used in Europe, aggregates deaths before age 75 from conditions that are preventable or treatable with timely and effective health care.[8] The U.S. ranked 15th out of 19 countries on this indicator as of 1998, with a mortality rate of 115 deaths per 100,000. (Exhibit 3) The best three countries that constitute the benchmark have death rates that are 30 percent lower than the U.S. If death rates in the U.S. came down to levels achieved by the leading countries, the improvement would translate into nearly 90,000 fewer deaths per year.

LONG, HEALTHY & PRODUCTIVE LIVES **Exhibit 3**

Mortality Amenable to Health Care

Mortality from causes considered amenable to health care is deaths before age 75 that are potentially preventable with timely and appropriate medical care

Deaths per 100,000 population*

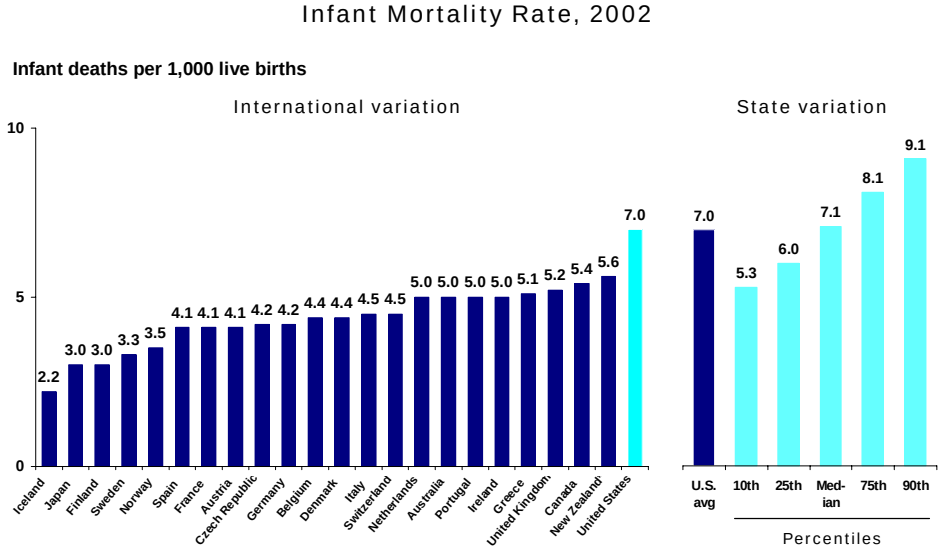


* Countries' age-standardized death rates, ages 0–74; includes ischemic heart disease.
See Technical Appendix for list of conditions considered amenable to health care in the analysis.
Data: International estimates—World Health Organization, WHO mortality database (Nolte and McKee 2003);
State estimates—K. Hempstead, Rutgers University using Nolte and McKee methodology.

Source: Commonwealth Fund National Scorecard on U.S. Health System Performance, 2006

The U.S. fares poorly at both the beginning and end of life. Of 23 countries, the U.S. ranked last on infant mortality, with rates more than twice the top three country rates. In the U.S., there are an average of seven infant deaths per 1,000 births, compared with two to three per 1,000 in the leading three countries and a median of 4.4 per 1,000 among higher-income, industrialized member nations of the Organization for Economic Cooperation and Development (OECD). (Exhibit 4) Likewise, the U.S. ranked among the last of industrialized countries on healthy life expectancy at age 60. This low ranking reflects both shorter life expectancy for U.S. men and women and more years of life lived in poor health and disability. By age 60, U.S. rates of healthy life expectancy fall two to four years short of rates achieved by leading countries (Japan, Switzerland, and France).[9]

LONG, HEALTHY & PRODUCTIVE LIVES **Exhibit 4**



* 2001.
Data: International estimates—OECD Health Data 2005;
State estimates—National Vital Statistics System, Linked Birth and Infant Death Data (AHRQ 2005a).

Source: Commonwealth Fund National Scorecard on U.S. Health System Performance, 2006

Within the U.S., deaths from conditions amenable to health care and infant mortality vary remarkably across states, providing further evidence of the potential for better health outcomes and targets for improvement. As of 2002, mortality amenable to health care rates in the top 10 percent of U.S. states (84 deaths per 100,000 or less) approached the average level achieved across the leading countries four years earlier.[10] At the other end of the spectrum, the bottom five states with the worst mortality amenable to health care rates have rates (134 deaths per 100,000 or higher) that place them last among advanced, industrialized countries.[11]

Variation in U.S. performance is even more pronounced for infant mortality. Even the best five U.S. states (5.3 deaths per 1,000 live births) lag behind the international leaders. States at the bottom of the distribution have rates well beyond the range of 23 OECD countries.[12] Given the wide disparities across states within the U.S., it would require a 35 to 40 percent reduction in mortality rates for conditions amenable to health care and infant mortality to bring the death rates in the bottom of the state distribution down to levels achieved by the leading groups of states.

As a nation, we face the challenge of rising rates of chronic disease among both children and adults, necessitating care systems and policies that promote and help maintain health. The Scorecard finds wide variations across states in terms of the percentage of working-age adults reporting limits on ability to work or carry on other activities, and of school-age children missing 11 or more days from school due to illness or injury. The average disability rate for U.S. adults is one-fourth worse than the best five U.S. states, as is the rate of health-related school absences. Although these indicators likely reflect living and working conditions, as well as health care factors, timely and effective care can prevent or delay the onset of disabling health conditions and help children with asthma or other chronic conditions avoid complications.

Poor performance on measures of long, healthy, and productive lives relates directly to gaps between national performance and achievable benchmarks across an array of quality, access, and efficiency dimensions, as demonstrated below. To achieve major progress in improving health outcomes and enhancing opportunities to lead healthy lives, the U.S. will require a comprehensive strategy that addresses deficiencies in health care financing, organization, and delivery.

IMPROVING QUALITY

Ensuring patients get the right care (i.e., effective care), coordinating care, and providing safe, timely, and patient-centered care form the essential foundation of high-quality care. U.S. average ratio scores across these priority areas yielded an overall quality score of 71—an average of 30 percent below benchmark rates. (Exhibit 5) National rates were as much as 50 percent below benchmarks on key indicators of preventive care, chronic disease control, care coordination, and timely access to care.

Exhibit 5. Dimension Scores for Quality

Quality Dimension	Indicator Score: Ratio of U.S. to Benchmark Rate	Dimension Score: Average of Indicator Ratios
The Right Care		**71**
Adults: recommended screening and preventive care	61	
Children: recommended immunizations, preventive care (Avg 2 ratios)	85	
Needed mental health care and received treatment (Avg 2 ratios)	66	
Chronic disease under control: diabetes, high blood pressure (Avg 2 ratios)	61	
Hospitalized patients: recommended care for AMI, CHF, pneumonia	84	
Coordinated Care		**70**
Adult with accessible primary care provider	79	
Children with a medical home	77	
Care coordination at hospital discharge (Avg 3 ratios)	70	
Nursing homes: hospital admissions and readmissions (Avg 2 ratios)	64	
Home health: hospital admissions	62	
Safe Care		**69**
Patients reported medical, medication, or lab errors	65	
Unsafe drug use (Avg 3 ratios)	60	
Nursing home residents with pressure sores (Avg 2 ratios)	67	
Hospital-standardized mortality ratios	84	
Patient-Centered, Timely Care		**72**
Ability to see doctor same/next day when sick or needed medical attention	58	
Ability to get "after hours" care	53	
Doctor-patient communication: always listened, explained, showed respect, spent enough time	74	
Adults with chronic conditions given self management plan	89	
Patient-centered hospital care: always managed pain, responded when needed help, explained medicines	87	
TOTAL AVERAGE SCORE		**71**

Moreover, quality performance is highly variable and uneven across the nation. There are often startling differences between top and bottom rates of performance by hospital, health plan, or state. These wide variations indicate that just moving the bottom of the distribution up to current national average performance would yield substantial net gains in quality and health outcomes. On some indicators, even the best rates fall short of outcomes we might expect, especially where available national quality indicators specify well-accepted standards of practice.

The Right Care

"The right care" is often defined as care that works and is beneficial to patients. Failures to deliver necessary care occur when there is underuse, misuse, or overuse. In the Scorecard, indicators included in "the right care" focus on failures to provide effective, necessary, or beneficial care (underuse). We include indicators of misuse that put patients at risk in the

section on safe care and indicators of overuse in efficiency as markers of failure to achieve efficient, high-value care.

Key indicators used to assess whether the U.S. population is getting the right care include: adults receiving all recommended preventive care; children with up-to-date immunizations and annual preventive care; adults and children receiving mental health care when needed; control of adult diabetes and hypertension; and appropriate clinical care for patients hospitalized with heart attacks, congestive heart failure, or pneumonia. Cutting across preventive, acute, and chronic care, the indicators reflect aspects of health care targeted by Medicare, Medicaid, and private insurers to encourage and reward high-quality care. (Exhibit 6)

Exhibit 6. The Right Care Scores

DIMENSION AND INDICATOR	U.S. National Rate	Benchmark	Benchmark Rate	*Score*: Ratio of U.S. to Benchmark Rate
Adults received recommended screening and preventive care	49	Target	80	**61**
Children received recommended immunizations and preventive care (Avg. 2 ratios):				**85**
Received all recommended doses of five key vaccines	79	Top 10% states	89	89
Received both medical and dental preventive care visits	59	Top 10% states	73	81
Needed mental health care and received treatment (Avg. 2 ratios):				**66**
Adults	47	Target	80	59
Children	59	Target	80	73
Chronic disease under control (Avg. 2 ratios):				**61**
Adults with diagnosed diabetes whose HbA1c level <9%	74	90th %ile Medicare plans	89	83
Adults with hypertension whose blood pressure <140/90 mmHg	29	90th %ile private plans	75	39
Hospitalized patients received recommended care for AMI, CHF, and pneumonia (composite)	84	Top hospitals	100	**84**
THE RIGHT CARE DIMENSION SCORE				***71***

NOTES: All rates are expressed as percentages and are rounded. Ratios use values to the nearest decimal point.
AMI=Acute myocardial infarction; CHF=Congestive heart failure
Source: See Complete Chartpack and Technical Appendix for data source and date.

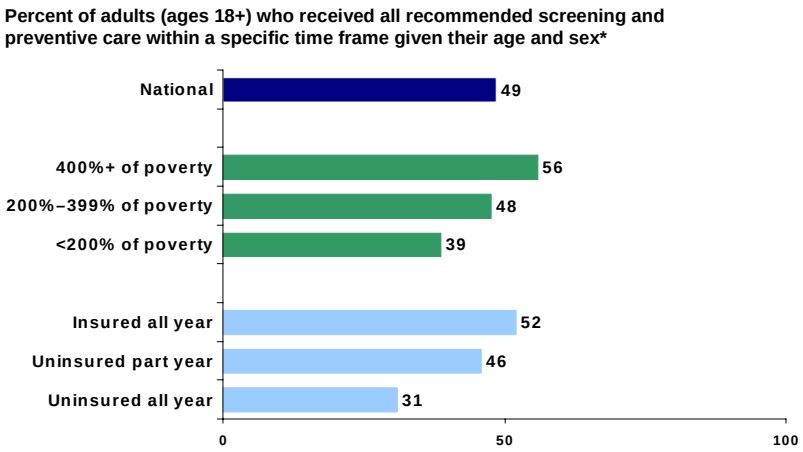
Across these indicators of right care, the U.S. averages 71 percent of benchmark rates. Individual indicator ratio scores ranged from 39 to 89, pointing to substantial room for improvement across multiple aspects of quality care. Pediatric immunization rates were fairly high, with 79 percent of children receiving all recommended doses of five key vaccines. This measure that has been included in the HEDIS (Health Plan Employer Data and Information Set) standardized performance measures for over a decade and has been a specific target for improvement of both private and public efforts. In addition, rates of hospitalized patients receiving recommended care for three conditions were high, with 84 percent of patients getting the right care. The measures in this area are now publicly reported by hospitals, and several have been the target of private quality improvement

programs. It is likely that these measurement, reporting, and improvement efforts have contributed to better overall performance for pediatric immunization and hospital care.

Efforts to improve quality of care seek to ensure that patients receive care appropriate to their condition and according to evidence-based guidelines. The Scorecard highlights the extent to which performance currently falls short of providing recommended care, even for relatively inexpensive basic screening and preventive services. Based on patient reports, barely half of all adults (49%) receive periodic clinical screening tests and preventive care as recommended by U.S. national guidelines.[13] (Exhibit 7) In light of the over-all low rates, including rates for high-income, insured adults, the Scorecard sets the benchmark for this indicator to 80 to set a "stretch" target.

QUALITY: THE RIGHT CARE **Exhibit 7**

Receipt of Recommended Screening and Preventive Care for Adults, by Family Income and Insurance Status, 2002



* Recommended care includes seven key screening and preventive services: blood pressure, cholesterol, Pap, mammogram, fecal occult blood test or sigmoidoscopy/colonoscopy, and flu shot.
Data: B. Mahato, Columbia University analysis of 2002 Medical Expenditure Panel Survey.

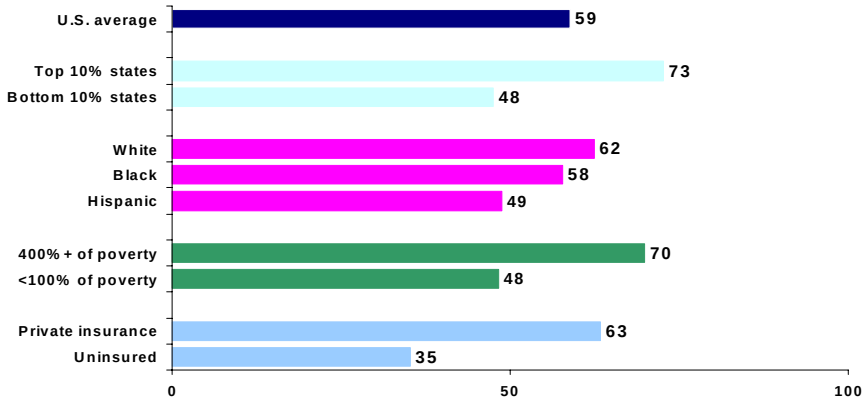
Source: Commonwealth Fund National Scorecard on U.S. Health System Performance, 2006

Among children, the gap between the top and bottom 10 percent of states reveals widely divergent experiences in the extent to which children receive timely preventive care and vaccines. Currently, access and receipt of care vary by where children live, undermining equal opportunities for a healthy start in life. There is a 25-percentage-point spread in the rates of children receiving annual medical and dental preventive care in the top five states compared with the bottom five states (73% vs. 48%). (Exhibit 8) There is an 18-percentage-point spread in receipt of recommended doses of five key vaccines, with 89 percent in the top state group compared with 71 percent in the bottom group.

QUALITY: THE RIGHT CARE **Exhibit 8**

Preventive Care Visits for Children, by Top and Bottom States, Race/Ethnicity, Family Income, and Insurance, 2003

Percent of children (ages <18) received BOTH a medical and dental preventive care visit in past year



Data: 2003 National Survey of Children's Health (HRSA 2005; retrieved from Data Resource Center for Child and Adolescent Health database at http://www.nschdata.org).

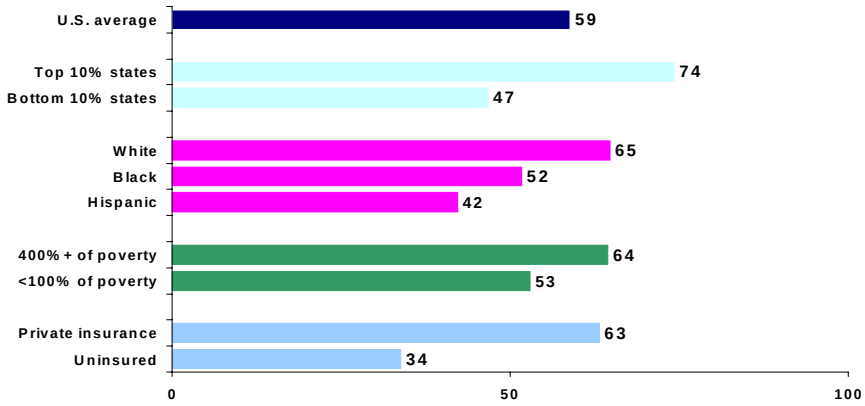
Source: Commonwealth Fund National Scorecard on U.S. Health System Performance, 2006

Adults and children in need of mental health care often fail to receive such care. Barely half of all adults (47%) with serious mental health needs and 59 percent of children in need of mental health care received at least some care during the year. (Exhibit 9) Rates for adults and children are low even among subgroups that usually receive better care: barely half of high-income adults (54%) and two-thirds of children in higher-income families (400% of the federal poverty level or higher) received mental health care when needed. The extent to which children with mental or behavioral health needs received at least some mental health care also varies significantly across states. As in preventive care, the Scorecard set a benchmark "stretch" target rate of 80 for mental health in light of the rates of needed care received for even higher-income or insured patients.

QUALITY: THE RIGHT CARE **Exhibit 9**

Mental Health Care for Children, by Top and Bottom States, Race/Ethnicity, Family Income, and Insurance, 2003

Percent of children (ages <18) who needed and received mental health care in past year*



* Children with current emotional, developmental, or behavioral health condition requiring treatment or counseling who received needed care during the year.
Data: 2003 National Survey of Children's Health (HRSA 2005; Retrieved from Data Resource Center for Child and Adolescent Health database at http://www.nschdata.org).

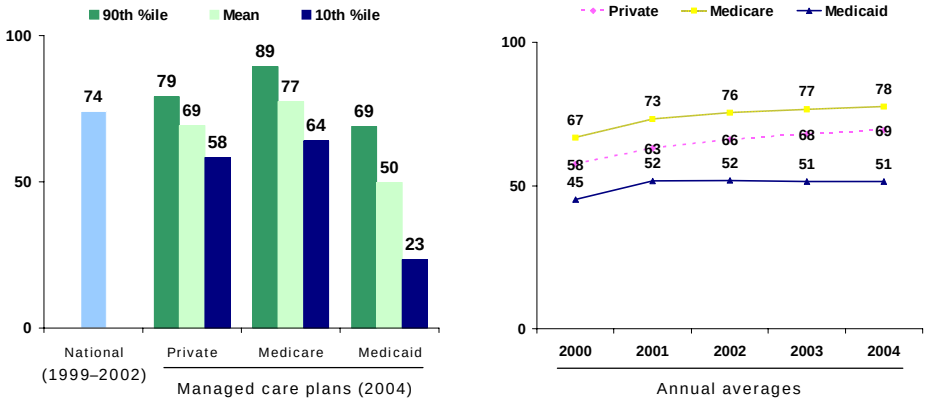
Source: Commonwealth Fund National Scorecard on U.S. Health System Performance, 2006

Scorecard indicators reveal substantial opportunities to improve health outcomes for millions of adults through more effective management of chronic disease. Current national estimates of the percentage of diabetics whose condition is under at least moderate control and the percentage of adults with hypertension whose blood pressure is under control fall far short of rates achieved by the top 10 percent of health plans reporting data to the National Committee for Quality Assurance (NCQA). (Exhibit 10) NCQA estimates that improving control for these two diseases to rates achieved by top plans could potentially prevent 20,000 to 40,000 deaths per year and save $1 billion to $2 billion in avoidable medical costs, $7 billion in lost productivity, and 46 million sick days.[14] Moreover, NCQA data document as much as a 45-percentage-point difference between the top and bottom 10 percent group rates of diabetes and hypertension control in commercial, Medicare, and Medicaid health plans. This striking variation highlights the need to improve chronic disease care outcomes for insured as well as uninsured populations, and underscores the importance of benchmarking efforts to provide targets or goals for improvement. Although average rates for plans that report data to NCQA have been improving over time, the pace has been slow.

QUALITY: THE RIGHT CARE **Exhibit 10**

Diabetic Adults Who Have Blood Glucose Levels Under Fair Control, National and Managed Care Plan Type

Percent of adults with diagnosed diabetes whose HbA1c level <9.0%



Note: National estimate includes ages 18+ and plan estimates include ages 18–75.
Data: National estimate—National Health and Nutrition Examination Survey (AHRQ 2005a);
Plan estimates—Health Plan Employer Data and Information Set (NCQA 2005a, 2005b).

Source: Commonwealth Fund National Scorecard on U.S. Health System Performance, 2006

Lack of access to care undermines quality. Regardless of where they live, uninsured and lower-income adults and children are at high risk of not receiving recommended and basic care. Only one-third of uninsured adults and children receive timely preventive care. Uninsured and low-income adults with chronic disease are less likely than the insured or those with higher incomes to have their conditions under control or to receive recommended care for their condition (diabetes care). Uninsured and low-income adults and children are far less likely to receive mental health care when needed.

Notable variation also emerges in the extent to which U.S. hospitals provide care according to broadly accepted clinical guidelines for basic treatment of patients hospitalized for heart attacks, congestive heart failure, or pneumonia. Although the best hospitals reached 100 percent adherence to guidelines, the median rate among hospitals for delivery of recommended care was only 84 percent on a composite measure of care for these three conditions (based on 10 clinical indicators currently reported to the Medicare program in exchange for full payment updates). (Exhibit 11) In other words, median rates fall 16 percent short of recommended standards of care. The variation between top- and bottom-performing hospitals was widest for patients hospitalized with congestive heart failure and pneumonia.

QUALITY: THE RIGHT CARE **Exhibit 11**

Hospital Quality of Care for Heart Attack, Heart Failure, and Pneumonia, by Hospitals and States, 2004

Percent of patients who received recommended care:	HOSPITALS				STATES		
	Median	Best	90th percentile	10th percentile	Best	90th percentile	10th percentile
Acute myocardial infarction (AMI) (5 indicators)	92	100	98	80	97	96	89
Congestive heart failure (CHF) (2 indicators)	83	100	94	62	91	89	79
Pneumonia (3 indicators)	78	99	88	66	82	79	69
COMPOSITE OF 10 INDICATORS	84	99	91	75	88	87	80

AMI—aspirin within 24 hours before or after arrival at the hospital and at discharge, beta-blocker within 24 hours after arrival and at discharge, and angiotensin-converting enzyme (ACE) inhibitor for left ventricular systolic dysfunction; CHF—assessment of left ventricular function and ACE inhibitor for left ventricular dysfunction; Pneumonia—timing of initial antibiotic therapy, pneumococcal vaccination, and assessment of oxygenation.
Data: A. Jha and A. Epstein, Harvard University analysis of data from Hospital Quality Alliance national reporting system and CMS Hospital Compare.

Source: Commonwealth Fund National Scorecard on U.S. Health System Performance, 2006

Improving hospital adherence to guidelines could save lives and reduce costs. A recent study comparing high-adherence to low-adherence hospitals finds that every 10 percent improvement in the rate of meeting composite guideline indicators for heart attack patients was associated with a 10 percent decrease in the likelihood of dying in the hospital.[15] Similarly, studies of costs and outcomes over time for Medicare patients hospitalized for heart attacks find that hospital regions with higher-quality scores on basic clinical process indicators have better outcomes (lower one-year mortality rates) and also lower total costs of care.[16]

Coordinated Care

Coordinating care over time and across multiple sites, especially for patients with complex, long-term chronic diseases, can help ensure that patients receive appropriate follow-up treatment and minimize the risk of errors and preventable complications. Coordination also supports patients, reducing their stress or confusion and minimizing wasted time as they navigate the health care system. Key indicators of good care coordination include: adults having an accessible primary care provider; children having a medical home; provision of transitional care and follow-up care upon discharge from hospital; and, for long-term care patients, low rates of admission and readmission to hospital.

Poor care coordination is pervasive across the U.S. health system, as shown by indicators that span community, hospital, and nursing home care. The low scores on indicators of care coordination signal the need for more integrated care across sites of care and over time. Failure to coordinate care well raises costs, undermines delivery of appropriate, effective care, and poses risks to patients.[17] The overall average score for coordinated care was only 70 out of 100, with wide gaps in performance across the country on multiple indicators. (Exhibit 12)

Exhibit 12. Coordinated Care Scores

DIMENSION AND INDICATOR	U.S. National Rate	Benchmark	Benchmark Rate	*Score*: Ratio of U.S. to Benchmark Rate
Adults under 65 with accessible primary care provider	66	65+ yrs, High income	84	**79**
Children with a medical home	46	Top 10% states	60	**77**
Care coordination at hospital discharge (Avg. 3 ratios):				**70**
Hospitalized patients with new Rx: Medications were reviewed at discharge	67	Best of 6 countries	86	78
Heart failure patients received written instructions at discharge	50	90th %ile hospitals	87	58
Follow-up within 30 days after hospitalization for mental health disorder* (Avg. health plans):				74
Private plans	76	90th %ile private plans	86	88
Medicare plans	61	90th %ile private plans	86	70
Medicaid plans	54	90th %ile private plans	86	63
Nursing homes: hospital admissions and readmissions among residents (Avg. 2 ratios):				**64**
Hospital admissions	16	10th %ile states	9	57
Readmissions	12	10th %ile states	8	72
Home health: hospital admissions	28	Top 25% agencies	17	**62**
COORDINATED CARE DIMENSION SCORE				***70***

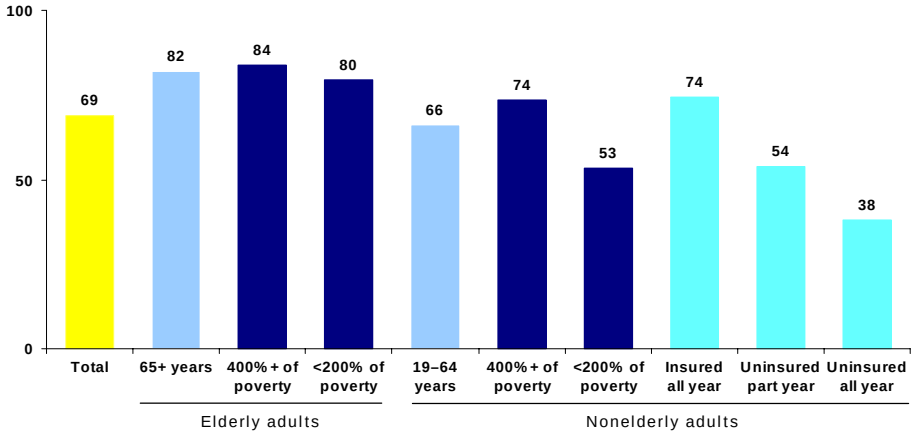
NOTES: All rates are expressed as percentages and are rounded. Ratios use values to the nearest decimal point.
*Average of NCQA health plans. No national data available.
Source: See Complete Chartpack and Technical Appendix for data source and date.

Having a doctor who serves as a central source of care and referrals and is readily accessible provides a foundation for care coordination and continuity. Yet, one-third of all adults (31%) and more than half of all children (54%) do not have a medical home, based on patients' and parents' descriptions of sources of care.[18] (Exhibit 13) Moreover, even among adults with primary care providers who say their doctor is easy to get to, a substantial share (28%) say it is difficult to make contact after regular office hours.[19]

QUALITY: COORDINATED CARE **Exhibit 13**

Having an Accessible Primary Care Provider, by Age Group, Family Income, and Insurance Status, 2002

Percent of adults with a usual source of care who provides preventive care, care for new and ongoing health problems, and referrals, and who is easy to get to



Data: B. Mahato, Columbia University analysis of 2002 Medical Expenditure Panel Survey.

Source: Commonwealth Fund National Scorecard on U.S. Health System Performance, 2006

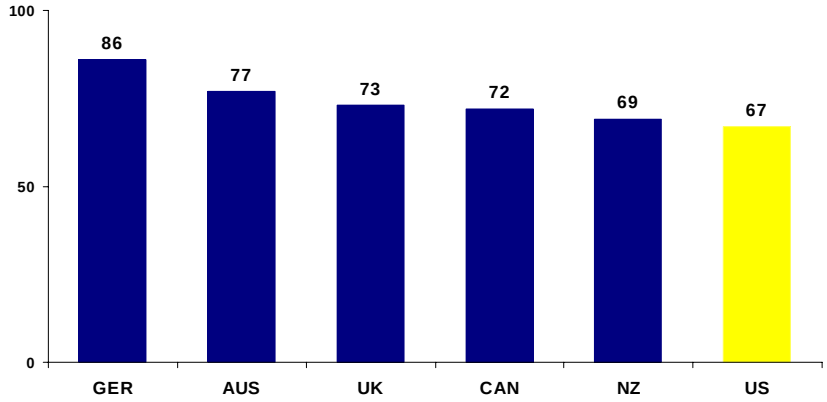
For adults and children, insurance and income play a major role in facilitating and supporting connections with an accessible and accountable primary care provider. Those insured all year have a primary care provider at twice the rate of the uninsured. The extent to which children have a medical home also varies significantly across states, revealing uneven primary care access across the country. Rates of children having a primary care provider who offers comprehensive, coordinated care range from a "high" of 60 percent in the top five states to a low of 36 percent in the bottom five states.

Coordination of care is especially critical at the time of hospital discharge and during transitions following discharge. Frequent failures to review patients' new prescriptions in light of medications taken prior to hospitalization put patients at risk for adverse drug reactions. Compared with adults in several other countries, U.S. patients are significantly less likely to have their medications reviewed when discharged from hospitals. (Exhibit 14) Improving medication reconciliation in all care transitions, including at the time of hospital discharge, is a central safety goal of the Joint Commission on Accreditation of Healthcare Organizations, based on studies that demonstrate this technique can reduce medication errors substantially. "Medication reconciliation" is also one of the key interventions in the Institute for Healthcare Improvement's (IHI) 100,000 Lives campaign.[20]

QUALITY: COORDINATED CARE **Exhibit 14**

Medications Reviewed When Discharged from the Hospital, Among Sicker Adults in Six Countries, 2005

Percent of hospitalized patients with new prescription who reported prior medications were reviewed at discharge



GER=Germany; AUS=Australia; UK=United Kingdom; CAN=Canada; NZ=New Zealand; US=United States.
Data: 2005 Commonwealth Fund International Health Policy Survey of Sicker Adults (Schoen et al. 2005a).

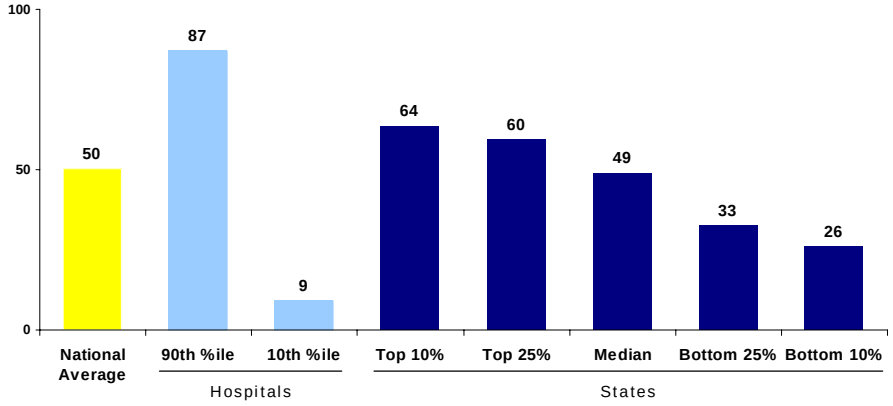
Source: Commonwealth Fund National Scorecard on U.S. Health System Performance, 2006

For patients hospitalized with complex or chronic diseases, strategies to anticipate and avoid complications include discharge planning to ensure patients understand what to do when they get home and whom to call if they have questions or concerns, and arrangements for follow-up care as needed. Using congestive heart failure as a marker, the Scorecard indicates that lack of discharge planning may be the norm rather than the exception. On average, patients with congestive heart failure receive hospital discharge instructions only 50 percent of the time, with an 80-percentage-point spread between the top and bottom 10 percent of hospitals and 40-percentage-point spread between the top and bottom five states. (Exhibit 15)

QUALITY: COORDINATED CARE **Exhibit 15**

Heart Failure Patients Given Written Instructions or Educational Materials When Discharged, by Hospitals and States, 2004

Percent of heart failure patients discharged home with written instructions or educational material*



* Discharge instructions must address all of the following: activity level, diet, discharge medications, follow-up appointment, weight monitoring, and what to do if symptoms worsen.
Data: National and hospital estimates—A. Jha and A. Epstein, Harvard University analysis of data from Hospital Quality Alliance national reporting system; State estimates—Retrieved from Hospital Compare database at http://www.hospitalcompare.hhs.gov.

Source: Commonwealth Fund National Scorecard on U.S. Health System Performance, 2006

Failure to follow up on care in the community are also frequent, judging from the low percentage of patients with mental illness who received follow-up care within 30 days after a hospitalization. On average, 46 percent of Medicaid patients, 39 percent of Medicare patients, and 24 percent of privately insured patients hospitalized for mental illness did not have a follow-up visit within 30 days of discharge (NCQA HEDIS rates). These rates vary significantly across plans, ranging from a low of 22 percent followed up in the bottom 10 percent of Medicaid plans, to a high of 80 percent or more in the top 10 percent of private, Medicare, or Medicaid plans. Indicating broad concern with mental health care, HEDIS scores for other mental health indicators tend to be lower than indicators for other health conditions and have shown the least improvement over time.[21]

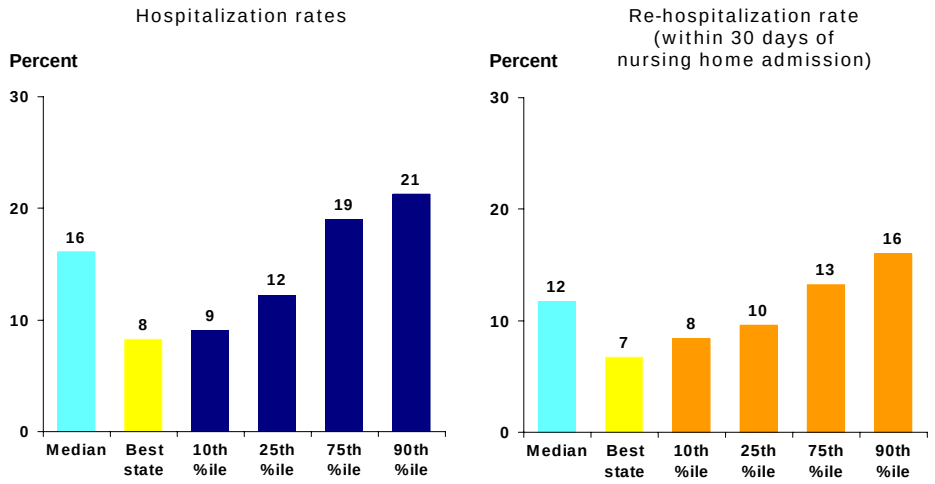
Patients hospitalized for mental health conditions or congestive heart failure are known to be at risk for complications, and these patients experience high rates of readmission in the absence of effective discharge planning, transition, and follow-up care.[22] The 20-to-30-percentage-point spread between average rates and rates achieved by the top 10 percent of hospitals or health plans reveals opportunities to reduce costs as well as lower risks to patients from improved care coordination.

High-quality care within nursing homes and home care agencies, together with effective transition care, can also minimize hospitalization and re-hospitalization rates for

patients in need of long-term care. Yet, on average, one of six nursing home residents is hospitalized each year. Among those discharged from a hospital to a nursing home, 12 percent (one of eight) are readmitted within 30 days. (Exhibit 16) These average rates are 50 percent higher than rates achieved by the top five states, with a twofold variation between states at the lower and higher end of the distribution. National rates of hospital admission for home health care patients (28%) are also well above the benchmark set by top-performing agencies (17%) and are highly variable across agencies and states.

QUALITY: COORDINATED CARE **Exhibit 16**

Nursing Homes: Hospital Admission and Readmission Rates
Among Nursing Home Residents, per State, 2000



Data: V. Mor, Brown University analysis of Medicare enrollment data and Part A claims data for all Medicare beneficiaries who entered a nursing home and had a Minimum Data Set assessment during 2000.

Source: Commonwealth Fund National Scorecard on U.S. Health System Performance, 2006

A recent report by the Medicare Payment Advisory Commission on post-acute care estimates that 28 percent of readmissions from nursing homes and home health agencies are potentially preventable.[23] Reductions of this magnitude would bring national rates nearer to rates achieved by the top-performing states, resulting in considerable savings to the health system and less confusing and distressing disruption for vulnerable patients.

Medicare and Medicaid stand to gain from policies that reduce churning in and out of hospitals by improved quality of care in long-term settings, as well as better coordination during transitions. Studies indicate that nursing homes that invest in nurse staffing levels and focus on nurse aide skills have lower rates of hospitalization for potentially preventable conditions.[24] Yet, the current reimbursement policies between Medicare and Medicaid tend to undermine rather than support more integrated care. If

anything, current financial incentives encourage churning, raising costs and putting frail elderly or disabled patients at risk.[25]

Safe Care

Seven years after publication of the Institute of Medicine's landmark report *To Err Is Human,* the U.S. still lacks reporting systems to assess safety or to target areas for improvement at the national, state, or community level. Indicators of patient safety for which trend data are available include: patient reports of medical or medication errors; unsafe medication use; infection rates in intensive care units; patients with hospital diagnostic codes identified by the Agency for Healthcare Research and Quality (AHRQ) as suggestive of potentially preventable medical safety events; nursing home residents with pressure sores; and hospital-standardized mortality rates adjusted for case-mix severity. Currently, a composite indicator based on AHRQ safety indicators, with variations by state or hospital groups, is not available. Absent such a composite patient-safety indicator and the ability to look at top performance as a benchmark, the Scorecard discusses trends in performance on *individual* AHRQ indicators but does not include an overall score for patient safety.[26]

For indicators of patient safety for which benchmarks were available, the Scorecard assessment results in an average safety score of only 69, similar to the grade of C+ assigned to patient safety efforts to date in a recent analysis.[27] (Exhibit 17)

Exhibit 17. Safe Care Scores

DIMENSION AND INDICATOR	U.S. National Rate	Benchmark	Benchmark Rate	*Score*: Ratio of U.S. to Benchmark Rate
Patients reported medical, medication, or lab test error	34	Best of 6 countries	22	**65**
Unsafe drug use (Avg. 3 ratios):				**60**
Ambulatory care visits for treating adverse drug effects, per 1,000 population per year	15	West	11	71
Children prescribed antibiotics for throat infection without a "strep" test	43	10th %ile private plans	12	27
Elderly used 1 of 33 inappropriate drugs	18	West	15	83
Nursing home residents with pressure sores (Avg. 2 ratios):				**67**
High-risk residents	13	Top 10% states	8	60
Short-stay residents	19	Top 10% states	14	73
Hospital-standardized mortality ratios, actual to expected deaths	101	Top 10% hospitals	85	**84**
SAFE CARE DIMENSION SCORE				***69***

NOTES: All rates are expressed as percentages unless labeled otherwise and are rounded. Ratios use values to the nearest decimal point.
Source: See Complete Chartpack and Technical Appendix for data source and date.

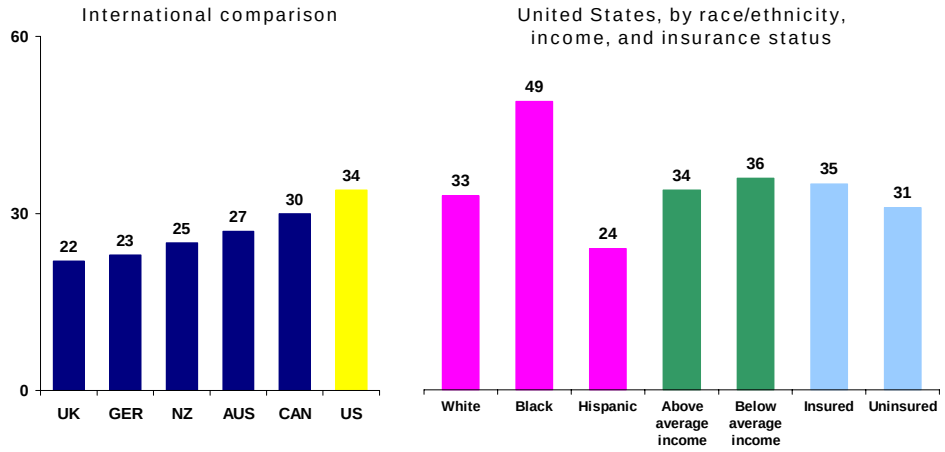
Safety risks cut across community and inpatient care settings. One-third of patients in the U.S. report they experienced a medical, medication, or lab test error in the last two

years—a rate far in excess of rates reported by patients in Germany and the U.K. (Exhibit 18) It would take a one-third reduction in the U.S. rate to reach the benchmark levels of these countries. Demonstrating the heightened risks that result from poorly coordinated care, the reported error rate in the U.S. rose to 48 percent for those with four or more doctors involved in their care. This is double the rate reported by sicker adults cared for by one or two physicians.[28]

QUALITY: SAFE CARE **Exhibit 18**

Medical, Medication, and Lab Errors Among Sicker Adults, 2005

Percent reporting medical mistake, medication error, or lab error in past two years



UK=United Kingdom; GER=Germany; NZ=New Zealand; AUS=Australia; CAN=Canada; US=United States.
Data: Analysis of 2005 Commonwealth Fund International Health Policy Survey of Sicker Adults; Schoen et al. 2005a.

Source: Commonwealth Fund National Scorecard on U.S. Health System Performance, 2006

Based on three indicators of prescription drug safety, national trends in community settings appear to have been going in the wrong direction in recent years. In doctors' offices, visits for adverse drug effects are up over the past five years, with significant variation across regions (e.g., 11 visits per 1,000 in the West vs. 19 visits per 1,000 in the South). Although rates are down compared with 10 years ago, the percentage of elderly who are prescribed one of 33 drugs listed as inappropriate for the elderly has edged up since 2000, and the percentage of children prescribed antibiotics for sore throats has ticked up since 1998.[29] All three indicators underscore the importance of monitoring trends over time.

Adverse drug events also point to failures to coordinate care, especially for patients under the care of multiple physicians and during the transition from hospital to community care. A recent study found that one of five hospitalized patients experienced

an adverse event within a month of discharge; of these, two-thirds (66%) were drug-related.[30] In ambulatory care settings, patient-reported medication errors increase significantly with the number of doctors involved in care. Yet, patients with complex medications regimens report that their doctors often fail to review all medications prescribed.[31]

Hospital infection rates in intensive care units reported by a sample of hospitals are highly variable. It would require a 50 to 87 percent reduction in the median rates to reach the rates achieved by the best facilities.[32] Moreover, indicators developed by AHRQ designed to track trends in hospital safety find little change, or even increases, in four of the more prevalent safety events, based on national and Medicare hospital discharge records.[33] (Exhibit 19) Notably, while rare surgical events associated with more technical aspects of care have decreased, rates have increased for post-operative safety indicators, bed sores, and other complications of care more closely related to inadequate staffing.[34]

QUALITY: SAFE CARE **Exhibit 19**

Potentially Preventable Adverse Events and Complications of Care in Hospitals, National and Medicare Trends

*Risk-adjusted rate per 10,000 discharges**	1997/1998**	2000	2002	2003
Decubitus ulcer (pressure sore)				
National	199	217	233	NA
Medicare	206	225	251	267
Postoperative pulmonary embolism or deep vein thrombosis				
National	65	75	84	NA
Medicare	62	71	86	92
Postoperative sepsis				
National	85	105	116	NA
Medicare	80	97	111	120
Postoperative respiratory failure				
National	23	34	40	NA
Medicare	25	34	46	50
Accidental puncture or laceration				
National	27	33	38	NA
Medicare	31	32	36	34
Infection due to medical care				
National	18	20	23	NA
Medicare	20	20	24	25

* Rates exclude complications present on admission and are adjusted for gender, comorbidities, and diagnosis-related group clusters. ** National rate is for 1997, Medicare rate is for 1998.
Data: National estimates—Healthcare Cost and Utilization Project, Nationwide Inpatient Sample (retrieved from HCUPNet at http://www.ahrq.gov/HCUPnet); Medicare estimates—MedPAC analysis of Medicare administrative data using AHRQ indicators and methods (MedPAC 2005, Chart 3-3).

Source: Commonwealth Fund National Scorecard on U.S. Health System Performance, 2006

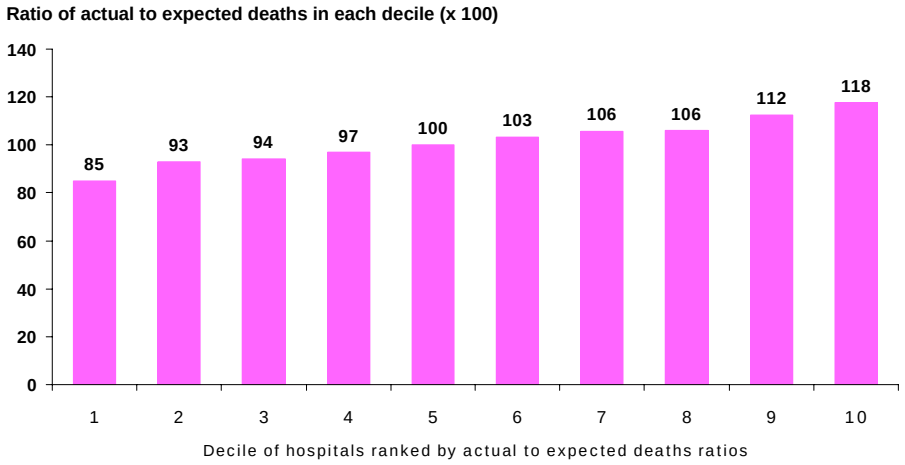
Among nursing home residents, inadequate care can result in pressure sores, which can lead to serious complications. Proper care to prevent pressure sores is currently below standards known to be achievable. It would take a 33 percent reduction in national pressure sore rates to reach the average level achieved by the top 10 percent of states.

Hospital-standardized mortality ratios are being used within the U.S. and internationally as global indicators to assess safety and target areas for improvement. Based on mortality for diagnostic groups that account for the vast majority of hospital deaths (80%), the standardized mortality ratio contrasts actual death rates to expected rates based on national averages and is adjusted for patient and community risk factors related to mortality. Standardized mortality ratios using 2000–2002 data for Medicare beneficiaries show a wide gap in performance between the best-performing group of hospitals (i.e., those with the lowest mortality ratio) and worst-performing group. (Exhibit 20) The 33-percentage-point spread between the mean of the top 10 percent and bottom 10 percent of hospitals translates into excess mortality and missed opportunities to save lives.[35]

QUALITY: SAFE CARE **Exhibit 20**

Hospital-Standardized Mortality Ratios, 2000–2002

Standardized ratios compare actual to expected deaths, risk-adjusted for patient mix and community factors. Medicare national average for 2000 = 100



See Technical Appendix for methodology.
Data: B. Jarman analysis of Medicare discharges from 2000 to 2002 for conditions leading to 80 percent of all hospital deaths.

Source: Commonwealth Fund National Scorecard on U.S. Health System Performance, 2006

If all hospitals with observed mortality rates above expected rates brought deaths down to expected levels, given their patient mix, the performance improvement would translate into 17,000 to 21,000 fewer deaths per year over the three-year period for all Medicare hospitalizations, based on the sample of hospitals used in the analyses. Reducing mortality ratios to the levels achieved by the top-performing hospitals in 2000–2002 (top 10%) would more than triple the number of lives saved.

The IHI made lowering hospital-standardized mortality rates a central focus of its 100,000 Lives Campaign.[36] Case studies of U.S. hospitals involved in the IHI campaign

demonstrate that it is possible to achieve 30 percent reductions in rates over a relatively short period using a system approach to safety, including infection control, team care, continuity, and adherence to care guidelines.[37] IHI recently announced that the 18-month campaign exceeded its goal of saving 100,000 lives in over 3,000 participating hospitals—illustrating the power of setting performance goals with system-level indicators.[38]

Patient-Centered, Timely Care

Timely, patient-centered care can foster better quality as well as greater efficiency by increasing adherence to treatment plans and engaging patients in care decisions. The five Scorecard indicators used to measure this aspect of quality are: ability to obtain a same- or next-day appointment with physician when sick; ability to obtain care after hours; quality of physician–patient communication; chronic care patients with self-management plans; and quality of patient experiences when hospitalized. Scorecard indicators based on patient experiences point to major deficiencies in timely access to care and effective communication, with missed opportunities to support patients in managing their own conditions. The overall score for patient-centered and timely care was 72. (Exhibit 21) National rates on some indicators were nearly 50 percent lower than benchmarks set by leading countries, health plans, and hospitals.

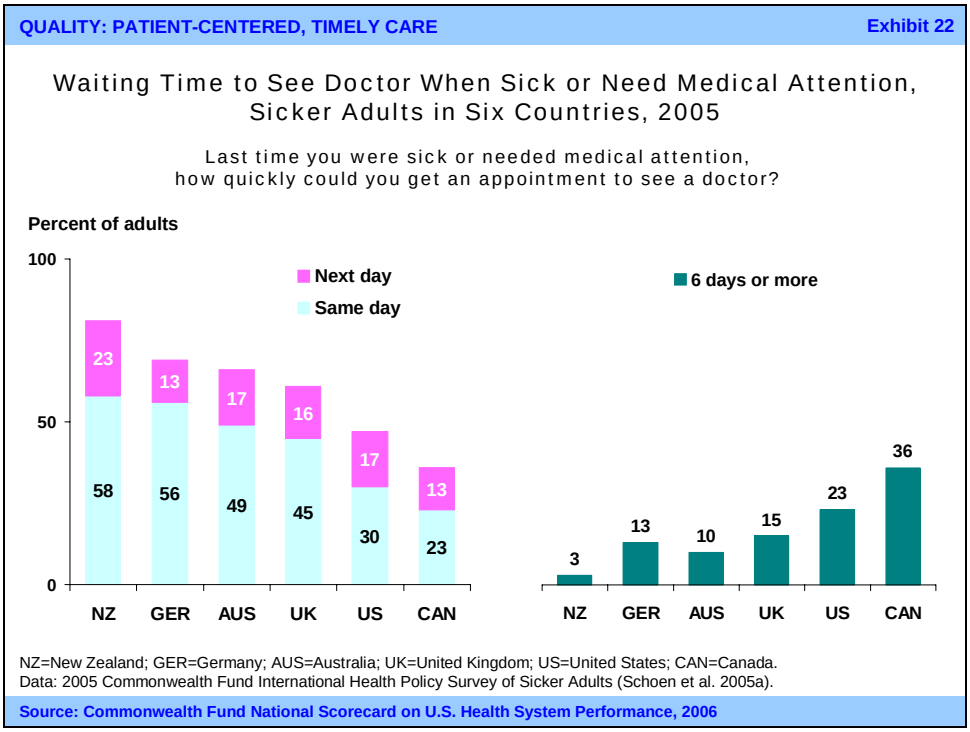
Exhibit 21. Patient-Centered, Timely Care Scores

DIMENSION AND INDICATOR	U.S. National Rate	Benchmark	Benchmark Rate	*Score*: Ratio of U.S. to Benchmark Rate
Ability to see doctor on same/next day when sick or needed medical attention	47	Best of 6 countries	81	**58**
Very/somewhat easy to get care after hours without going to the emergency room	38	Best of 6 countries	72	**53**
Doctor-patient communication: always listened, explained, showed respect, spent enough time	54	90th %ile Medicare plans	74	**74**
Adults with chronic conditions given self-management plan	58	Best of 6 countries	65	**89**
Patient-centered hospital care (Avg. 3 ratios):				**87**
Staff always managed pain well	70	90th %ile hospitals	79	89
Staff always responded when needed help to get to the bathroom or pressed call button	63	90th %ile hospitals	74	86
Staff always explained medicines and side effects	60	90th %ile hospitals	70	86
PATIENT-CENTERED, TIMELY CARE DIMENSION SCORE				***72***

NOTES: All rates are expressed as percentages and are rounded. Ratios use values to the nearest decimal point.
Source: See Complete Chartpack and Technical Appendix for data source and date.

Compared with patients in several other nations, U.S. patients are notably less likely to have rapid access to a physician when sick (i.e., same- or next-day appointments) or find it easy to get care after hours without going to the emergency room (ER). Nearly one of four U.S. adults reports having to wait six or more days for care when sick or in need of medical attention. (Exhibit 22) Nearly two-thirds (61%) of U.S. adults find it

difficult to get care after-hours without going to an ER, compared with 25 to 28 percent of adults in Germany and New Zealand.



Relatively long waits to see doctors and lack of after-hours care in the U.S. are associated with higher rates of ER visits for conditions that patients thought could have been handled by primary care physicians had they been available.[39] Studies indicate that improved after-hours care and primary care access can lower the number of ER visits, including visits by higher-risk, low-income populations—and thus lower costs.[40]

Within the U.S., there is wide variation across the country in the percentage of insured patients reporting that their doctor always listens carefully, explains things clearly, shows respect, and spends enough time with them. National average performance in the area of patient–provider communication is well below the performance achieved by the top 10 percent of states or plans, based on CAHPS (Consumer Assessment of Healthcare Providers and Systems) data reported for Medicare, Medicaid, and commercial plans.

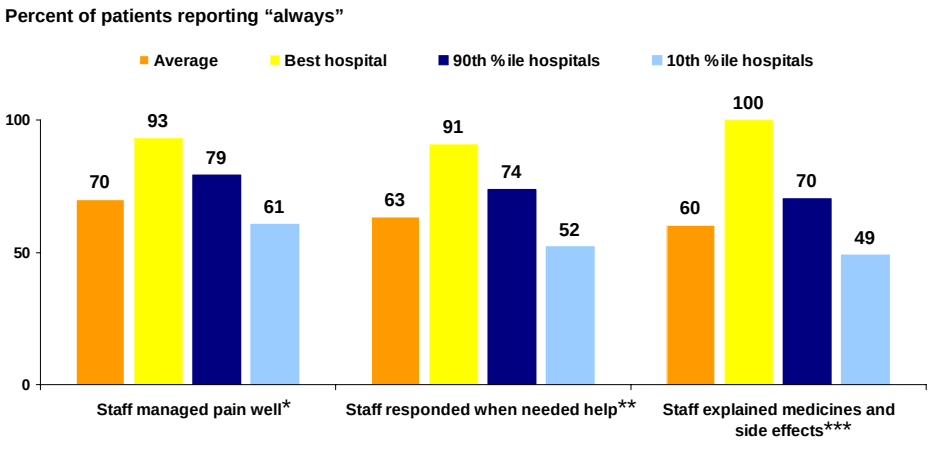
Providing a self-management plan to patients with chronic conditions encourages them to accept more responsibility for their health and take steps to help control their conditions. Self-management plans improve care for hypertension and diabetes and are a core element of "best practice" models to improve outcomes and lower costs for patients

with chronic, long-lasting conditions.[41] Yet, only three of five U.S. adults with chronic conditions report having such a plan to manage their care. Rates on this indicator tend to be low internationally (the U.S. average rate is 58 percent and the "best" country rate is only 65 percent). Thus in this instance, the U.S. fares well against the benchmark; nevertheless, the U.S. and benchmark performance both fall far short of what one would describe as "good" performance.

Hospitalized patients' experiences, as reported in the hospital CAHPS (HCAHPS) benchmarking database for an initial set of 254 hospitals, reveal a wide range of performance on patient-centered indicators. There is an 18-to-22-percentage-point spread between the top- and bottom-performing groups of hospitals on: the extent to which hospital staff manage pain well, respond when patients press call buttons or need help to go to the bathroom, or explain medications and possible side effects. (Exhibit 23) The variable performance results in national averages that are well below benchmarks set by the top 90th percentile of hospitals.[42] In the best hospitals, more than 90 percent of patients reported that the hospital staff met their expectations for responsiveness and care management, providing evidence that it is possible for hospitals to provide patient-centered care. By 2007, the HCAHPS benchmarking database will extend to hospitals nationwide and enable performance monitoring over time.

QUALITY: PATIENT-CENTERED, TIMELY CARE **Exhibit 23**

Patient-Centered Hospital Care: Staff Managed Pain, Responded When Needed Help, and Explained Medicines, by Hospitals, 2005



* Patient's pain was well controlled and hospital staff did everything to help with pain.
** Patient got help as soon as wanted after patient pressed call button and in getting to the bathroom/using bedpan.
*** Hospital staff told patient what medicine was for and described possible side effects in a way that patient could understand.
Data: CAHPS Hospital Survey results for 254 hospitals submitting data in 2005. National CAHPS Benchmarking Database.

Source: Commonwealth Fund National Scorecard on U.S. Health System Performance, 2006

Although the quality of care for residents of nursing homes is of critical public concern, currently no indicator exists to assess resident-centered care. Future editions of the Scorecard will incorporate new indicators of quality of life and care in nursing facilities as these become available. Variability in use of physical restraints points to the need to raise standards. Despite a great deal of progress since 1987—when legislation was passed to protect residents' right not to be physically restrained—7 percent of all nursing home residents were physically restrained in 2004. Rates varied from 2 percent in the top five states to 14 percent in the bottom five states.[43]

BETTER ACCESS TO CARE AND AFFORDABILITY

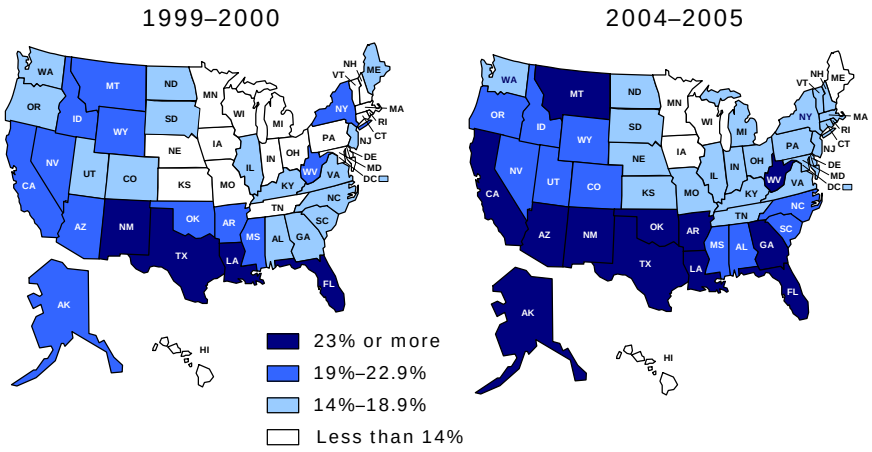
Access—the ability to obtain and afford needed care—is a critical hallmark of health system performance. The single most important determinant of whether Americans can obtain essential health care is whether they have health insurance coverage.[44] Recent studies also point to the importance of comprehensive benefits in the receipt of needed care and protection from the financial hardship of medical bills.[45] Even for those with insurance coverage, high out-of-pocket costs relative to income can undermine access to care and financial security.

The affordability of health care and insurance is a major concern. The rate of increase in health insurance premiums—three to four times faster than the rise in wages—is placing strain on families and contributing to the erosion of employment-based coverage.[46]

Despite an upswing in the business cycle beginning in 2000, trends on indicators of universal participation and affordability of care have been moving in the wrong direction. Over the last five years, the number of uninsured has increased steadily, rising from 39.8 million in 2000 to 46.6 million in 2005.[47] Working-age adults account for all of this increase. As a result, the portion of adults under age 65 who are uninsured jumped from 18 to 21 percent. Although some states have expanded coverage to offset the erosion in job-based health benefits, the U.S. is rapidly losing workforce coverage: in 12 states, 23 percent or more of the under-65 adult population is uninsured, up from four states in 2000. (Exhibit 24)

ACCESS: UNIVERSAL PARTICIPATION **Exhibit 24**

Percent of Adults Ages 18–64 Uninsured by State



Data: Two-year averages 1999–2000 and 2004–2005 from the Census Bureau's March 2000, 2001 and 2005, 2006 Current Population Surveys. Estimates by the Employee Benefit Research Institute.

Source: Commonwealth Fund National Scorecard on U.S. Health System Performance, 2006

The Scorecard indicators monitor both universal participation and affordability of care. Benchmarks include rates of achieved performance as well as target policy goals, such as 100 percent of the population having adequate insurance. Low scores highlight the negative effects of erosion of insurance coverage combined with the rising costs of care, particularly for families with low or modest incomes. The low score of 65 for universal participation and 69 for affordable care are both far from the goal of full participation with affordable access. (Exhibit 25)

Exhibit 25. Dimension Scores for Access

DIMENSION AND INDICATOR	U.S. National Rate	Benchmark	Benchmark Rate	*Score*: Ratio of U.S. to Benchmark Rate
Adults under 65 insured all year, not underinsured	65	Target	100	**65**
Adults with no access problem due to costs	60	Best of 5 countries	91	**66**
UNIVERSAL PARTICIPATION DIMENSION SCORE				***65***
Families spending <10% of income or <5% of income, if low income, on OOP medical costs and premiums	83	Target	100	**83**
Population under 65 living in states where premiums for employer-sponsored health coverage are <15% of under-65 median household income	58	Target	100	**58**
Adults under 65 with no medical bill problems or medical debt	66	Target	100	**66**
AFFORDABLE CARE DIMENSION SCORE*				***69***
TOTAL AVERAGE SCORE				***67***

NOTES: All rates are expressed as percentages.
OOP=Out-of-pocket
*Affordable care indicator scores refer to percentage of U.S. population meeting each threshold.
Source: See Complete Chartpack and Technical Appendix for data source and date.

Universal Participation

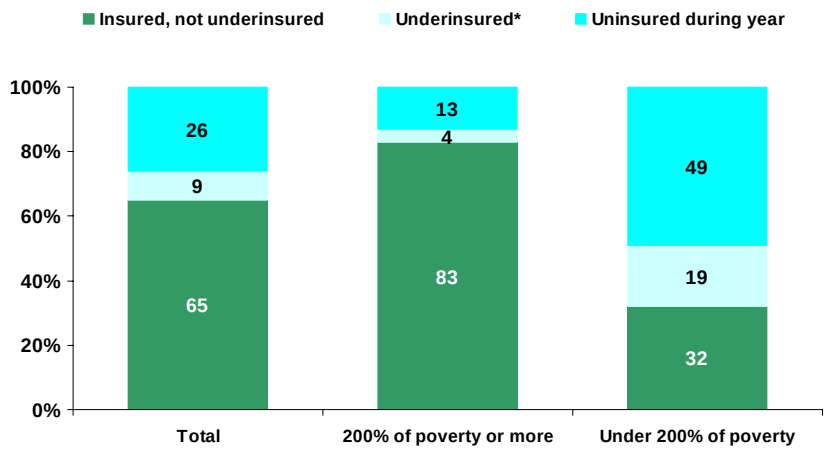
Universal participation is a critical factor for improving health care system performance and overall care outcomes in the U.S. The Scorecard includes two indicators to assess universal participation: the percentage of nonelderly adults who are adequately insured and the percentage without access problems due to cost.

The indicator for insurance coverage tracks the share of the under-65 adult population that is insured all year and has adequate financial protection. Inadequate protection, or being "underinsured," is defined as: 1) having out-of-pocket medical expenses that equal or exceed 10 percent of family income; 2) among those with incomes below twice the federal poverty level, having medical expenses that equal or exceed 5 percent of income; or 3) having health plan deductibles that equal or exceed 5 percent or more of income.[48]

As of 2003, 16 million adults were underinsured, paying high fractions of their incomes out-of-pocket for health care. Including those uninsured at any time during the year, 61 million adults—35 percent of all adults ages 19 to 64—either were uninsured or underinsured. (Exhibit 26) Among those with incomes below 200 percent of the federal poverty level, half were uninsured and two-thirds (68%) were underinsured or uninsured.

ACCESS: UNIVERSAL PARTICIPATION Exhibit 26

Adults Ages 19–64 Who Are Uninsured and Underinsured, by Poverty Status, 2003



* Underinsured defined as insured all year but experienced one of the following: medical expenses equaled 10% or more of income; medical expenses equaled 5% or more of incomes if low-income (<200% of poverty); or deductibles equaled 5% or more of income. Data: 2003 Commonwealth Fund Biennial Health Insurance Survey (Schoen et al. 2005b).

Source: Commonwealth Fund National Scorecard on U.S. Health System Performance, 2006

Lack of coverage, as well as inadequate coverage, undermines access to care. As of 2004, 40 percent of all U.S. adults and 57 percent of adults with below-average incomes reported that they went without care during the year because of costs, a rate four times higher than in the U.K., a country that has universal health insurance coverage and policies in place that provide greater financial protection than what is available in the U.S.

Lack of adequate insurance puts health and lives at risks and leads to high costs for the nation in terms of preventable diseases and excess deaths. The Institute of Medicine estimates that the high rate of uninsured Americans results in 18,000 preventable deaths per year and costs the nation $65 billion to $130 billion annually in diminished health and shorter life spans.[49]

Affordability

Health insurance premiums have been rising at rates considerably faster than the increase in wages in the last five years. As a result, affordability of insurance and medical care is increasingly a concern for middle-income as well as low-income families.[50] The Scorecard includes three indicators of affordability: 1) the portion of families spending 10 percent or more of their income on out-of-pocket costs or premiums or, among those with low incomes, the portion spending 5 percent or more of their income on out-of-pocket costs or premiums; 2) the portion of the under-65 population living in states where the average

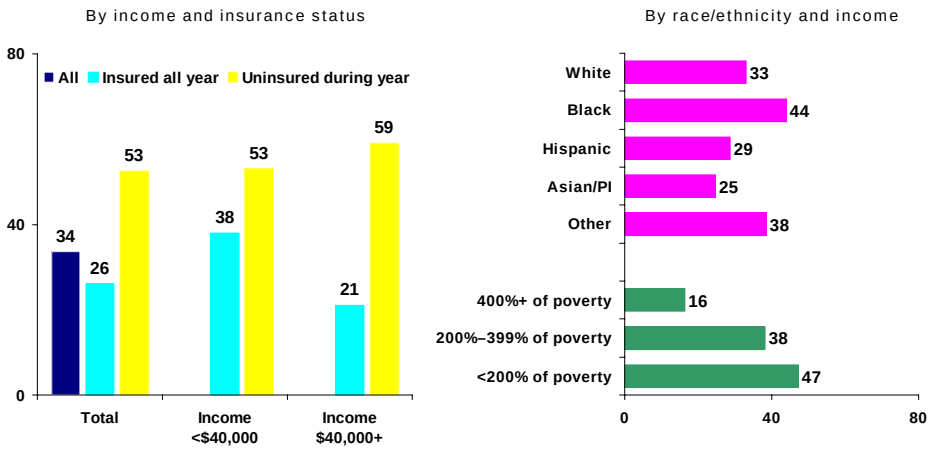
employer premiums amount to 15 percent or more of median household income; and 3) the portion of adults who are unable to pay medical bills and/or are paying off accumulated medical debt. All three thresholds measures provide sensitive indicators of affordability over time. The low scores found for affordability capture deepening concerns over the costs of care for middle- and lower-income families.

High out-of-pocket costs and premiums, compared with income levels, affect 17 percent of all nonelderly families, almost half of poor families (46%), and over one-third of near-poor families (38%). The percentage of adults facing bill collectors for unpaid medical bills, paying off medical debt over time, or unable to pay their medical bills has been increasing. By 2005, one-third (34%) of all adults under 65 were in debt or having problems paying bills. (Exhibit 27) Rates of medical debt were particularly high for adults who spent some time uninsured during the year and for those with below-average incomes. Yet, rates were also notably high among middle-income families: more than one-third (38%) of families with incomes between 200 and 400 percent of poverty ($26,000 to $52,000 for a family of two) reported that they had medical debts, faced creditors, or had problems paying medical bills. Both the percentage of families paying a high share of income for medical care and premiums, and the percentage with medical bills or medical debt, have increased in recent years.[51]

ACCESS: AFFORDABLE CARE **Exhibit 27**

Medical Bill Problems or Accrued Medical Debt, 2005

Percent of adults (ages 19–64) with any medical bill problem or outstanding debt*



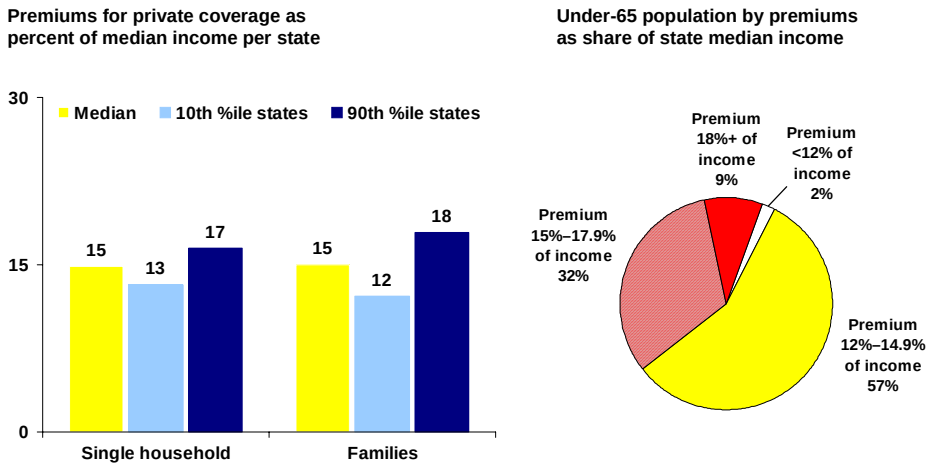
* Problems paying or unable to pay medical bills, contacted by a collection agency for inability to pay medical bills (only), had to change way of life to pay bills, or has medical debt being paid off over time.
PI = Pacific Islander.
Data: Analysis of 2005 Commonwealth Fund Biennial Health Insurance Survey; Collins et al. 2006.

Source: Commonwealth Fund National Scorecard on U.S. Health System Performance, 2006

Only 58 percent of the under-65 population lives in a state where premiums average less than 15 percent of median under-65 household income. (Exhibit 28) States in which average private premiums amount to a high proportion of median income also tended to have a high percentage of uninsured residents.

ACCESS: AFFORDABLE CARE **Exhibit 28**

Employer Premiums as Percentage of Median Household Income for Under-65 Population, Distribution by State



Data: State averages private premium rates—2003 Medical Expenditure Panel Survey;
State median household incomes, under-65 population—2004–2005 Current Population Survey.

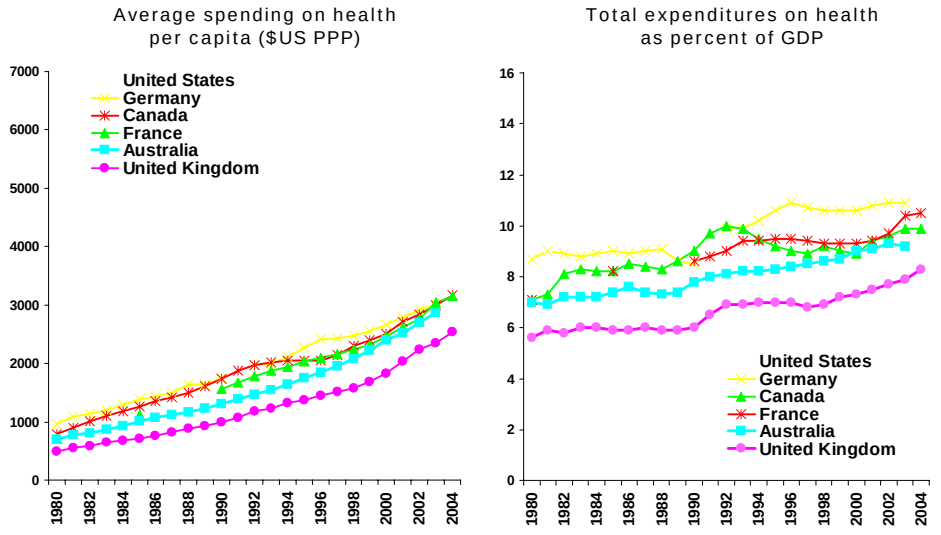
Source: Commonwealth Fund National Scorecard on U.S. Health System Performance, 2006

GREATER EFFICIENCY

An efficient, high-value care system seeks to maximize the quality of care and outcomes for the resources committed to health care, ensuring that additional investments yield net value over time. The U.S. spends far more of its economic resources on health care than other countries, with a wide gap between spending levels compared with the next-highest country. The considerable and growing body of evidence indicating the U.S. is not systematically the best on quality of care is remarkable given the high percentage of national income devoted to health care. (Exhibit 29)

EFFICIENCY **Exhibit 29**

International Comparison of Spending on Health, 1980–2004



Data: OECD Health Data 2005 and 2006.

Source: Commonwealth Fund National Scorecard on U.S. Health System Performance, 2006

To profile areas of concern and identify opportunities where better performance could yield higher value, the Scorecard includes eight indicators of efficiency. The indicators cluster into five areas: 1) evidence of overuse, inappropriate care, or duplication and waste; 2) inefficient use of resources resulting from lack of timely access and primary care; 3) regional variations in quality and costs; 4) the percentage of health expenditures spent on insurance administrative costs, a proxy for administrative complexity; and 5) lack of efficient information systems, as measured by physician use of electronic medical records.

The overall low scores for efficiency underscore the potential for improvement. With an average of ratio scores of 51 compared with the benchmarks, the set of indicators points to opportunities to reduce cost by improving access and quality and making the delivery of care and financing more efficient. (Exhibit 30) Based on analysis of outcomes and costs of care for Medicare beneficiaries, Scorecard findings suggest that it would be possible to save lives and lower costs if average U.S. performance could move toward levels achieved by the highest-performing regions of the country.

Exhibit 30. Efficiency Scores

DIMENSION AND INDICATOR	U.S. National Rate	Benchmark	Benchmark Rate	*Score*: Ratio of U.S. to Benchmark Rate
Potential overuse or waste (Avg. 3 ratios):				**48**
Duplicate medical tests: doctor ordered test that had already been done	18	Best of 6 countries	6	33
Tests results or records not available at time of appointment	23	Best of 6 countries	11	48
Received imaging study for acute low back pain with no risk factors* (Avg. health plans):				62
Private plans	25	10th %ile Medicaid plans	15[b]	58
Medicaid plans	22	10th %ile Medicaid plans	15	66
Went to ER for condition that could have been treated by regular doctor	26	Best of 6 countries	6	**23**
Hospital admissions for ACS conditions (Avg. 2 ratios):				**57**
National ACS admissions, per 100,000 population (Avg. 3 conditions):				49
Congestive heart failure	498	Top 10% states	258	52
Diabetes	241	Top 10% states	137	57
Pediatric asthma	188	Top 10% states	74	39
Medicare ACS admissions, per 10,000 beneficiaries	771	10th %ile regions	499	65
Medicare hospital 30-day readmission rates	18	10th %ile regions	14	**75**
Medicare annual costs of care and mortality for AMI, hip fracture, and colon cancer (Avg. 2 ratios):				**88**
Resource costs, annual Part A and Part B $	$26,829	10th %ile regions	23,314	87
1-year mortality rate	30	10th %ile regions	27	90
Medicare annual costs of care for chronic diseases: Diabetes, CHF, COPD, Part A and Part B $ (Avg. 4 ratios):				**68**
All three conditions	$31,792	10th %ile regions	20,960	66
Diabetes + CHF	$18,461	10th %ile regions	12,747	69
Diabetes + COPD	$13,188	10th %ile regions	8,872	67
CHF + COPD	$22,415	10th %ile regions	15,355	69
Percent of national health expenditures spent on health administration and insurance	7.3	Top 3 of 11 countries	2.0	**28**
Physicians using electronic medical records	17	Top 3 of 19 countries	80	**21**
TOTAL AVERAGE SCORE				***51***

NOTES: All rates are expressed as percentages unless labeled otherwise and are rounded. Ratios use values to the nearest decimal point.
ER=Emergency room; ACS=Ambulatory care sensitive; AMI=Acute myocardial infarction; CHF=Congestive heart failure; COPD=chronic obstructive pulmonary disease
*Average of NCQA health plans. No national data available.
Source: See Complete Chartpack and Technical Appendix for data source and date.

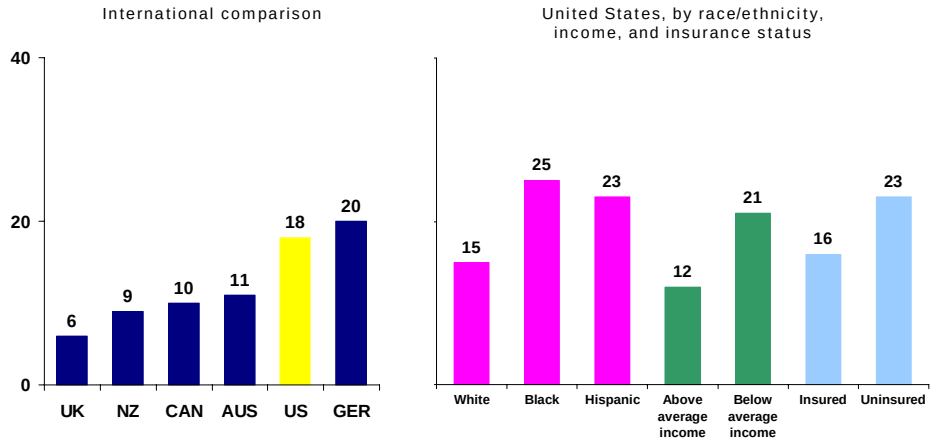
Overuse, Inappropriate Care, or Waste

Current financial incentives encourage and reward doing more. When it comes to diagnostic testing, this can include paying for two rounds of tests as patients move across sites of care, or paying for tests of marginal or no benefit. Based on patients' reports, rates of duplicate tests are notably high in the U.S.—double or even triple the rates in countries with more integrated primary care systems. (Exhibit 31)

EFFICIENCY **Exhibit 31**

Duplicate Medical Tests, Among Sicker Adults, 2005

Percent reporting that doctor ordered test that had already been done in past two years



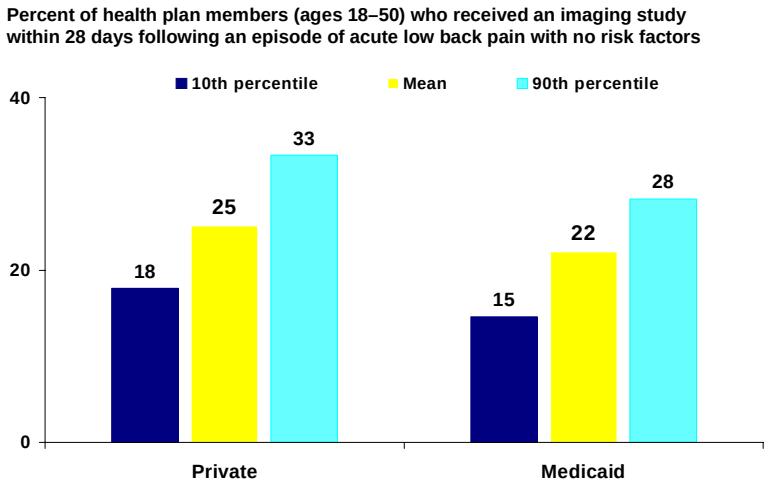
UK=United Kingdom; NZ=New Zealand; CAN=Canada; AUS=Australia; US=United States; GER=Germany.
Data: Analysis of 2005 Commonwealth Fund International Health Policy Survey of Sicker Adults; Schoen et al. 2005a.

Source: Commonwealth Fund National Scorecard on U.S. Health System Performance, 2006

Within the U.S., NCQA has begun tracking indicators of potential overuse or inappropriate care by expanding the HEDIS set to include imaging tests for lower-back pain within 28 days of onset, with no apparent risk factors or signs of serious pathology reported in the diagnostic visit.[52] Within commercial and Medicaid managed care plans, rates of such tests were highly variable, with average rates of potentially inappropriate testing up to 50 percent higher than rates reported by the lowest 10 percent of health plans (25% average vs. 18% for lowest decile and 33% for highest decile of private managed care plans). (Exhibit 32) Sharp increases in diagnostic testing in recent years have driven up Medicare program costs.[53] The spread between low-rate and high-rate health plans, plus patients' reports of duplicate testing, signals the need for policies to avoid unnecessary care or care with little benefit.

EFFICIENCY Exhibit 32

Managed Care Health Plans: Potentially Inappropriate Imaging Studies for Low Back Pain, by Plan Type, 2004



Data: Health Plan Employer Data and Information Set (NCQA 2005a, 2005b).

Source: Commonwealth Fund National Scorecard on U.S. Health System Performance, 2006

Inefficient and fragmented care results in wasted time and effort. Compared with adults in other countries, U.S. adults with health problems are more likely to report that their medical records or test results were not available at the time of their appointments: 23 percent of U.S. adults report test and medical records were not available when needed, in contrast with 11 percent to 12 percent of adults in top-performing countries.[54]

Access and Efficiency

Timely access to care in the community, particularly for those with chronic diseases, can prevent unnecessary hospitalization and emergency room use and reduce costs by avoiding complications of disease. Lack of timely access to physicians or after-hours care and advice can result in unnecessary reliance on hospital emergency rooms, driving up costs and subjecting patients to less effective and more fragmented care. Based on a cross-national survey in six nations, U.S. adults use the ER for conditions that could have been treated by a primary care doctor at four times the rate of adults in countries with better access to care in the community. It would require a nearly 80 percent reduction in U.S. rates to reach rates achieved in these top countries (26% in the U.S. compared with 6% to 9% in the lowest-rate countries).

Rates of ambulatory care sensitive (ACS) admissions vary widely across states and regions. There is a twofold to fourfold spread between states with the lowest and highest

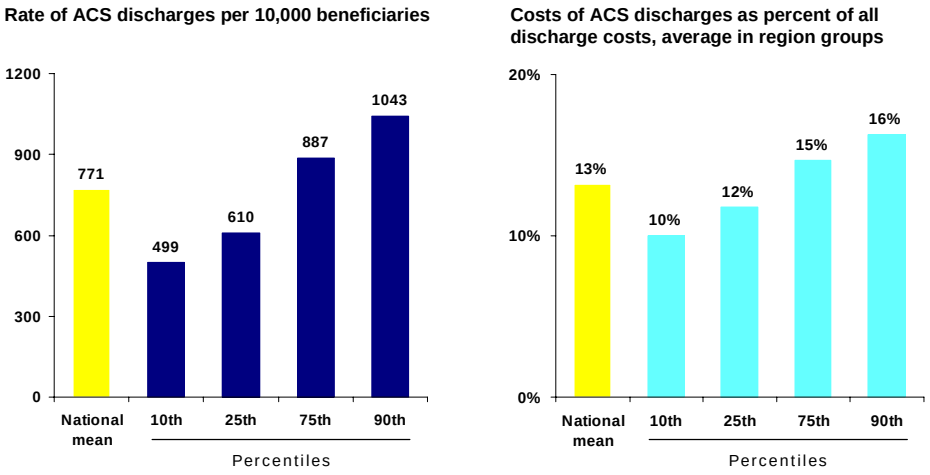
rates of admissions for congestive heart failure, diabetes, and pediatric asthma, three ACS chronic conditions that are most frequently responsible for hospital admissions. Current national rates on the three indicators of potentially preventable hospital admissions are twice the level achieved by the top states.

If low-performing regions and states could bring rates down to the current averages through improved access and care in the community, the nation could save hospitalization costs and shift resources to the community, with net benefits in improved access and quality. Based on AHRQ estimated costs of all ACS admissions, bringing national rates down by 20 to 30 percent would amount to savings of $8 billion to $13 billion annually.[55] AHRQ estimates that appropriate care for diabetes alone could save nearly $2.5 billion a year.[56] These gains do not count the added benefits from reduced sick days or improved school attendance and productivity.

Given that a high proportion of potentially preventable admissions occur among older adults, reducing preventable admissions would also yield substantial savings for Medicare. Analysis across hospital referral regions and states reveals a twofold difference in hospitalization rates between Medicare rates for all ACS admissions per 10,000 beneficiaries between areas with the lowest rates (bottom 10% or 25%) and those with the highest rates (top 10% or 25%). (Exhibit 33) If regions with above-average rates reduced them to the median rate, the total savings for Medicare would amount to $1.5 billion annually (at 2003 reimbursement levels). If rates came down to levels achieved by the lowest quartile or decile of regions, the savings would be in the $2.4 billion to $3.5 billion range.[57]

EFFICIENCY Exhibit 33

Medicare Discharges for Ambulatory Care Sensitive Conditions, Rates and Associated Costs, by Hospital Referral Regions, 2003



Data: G. Anderson and R. Herbert, Johns Hopkins University analysis of 2003 Medicare Standard Analytical Files (SAF) 5% Inpatient Data.

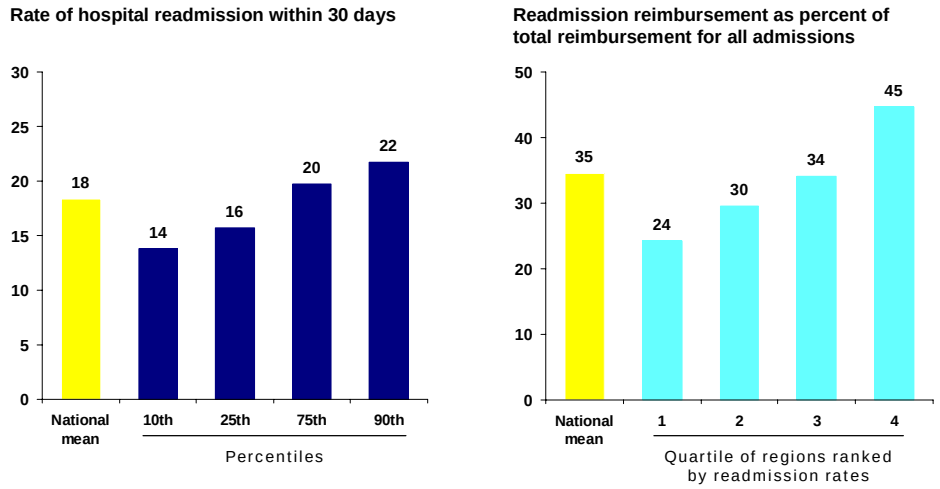
Source: Commonwealth Fund National Scorecard on U.S. Health System Performance, 2006

Variations in Quality and Costs

High-quality, safe care during a hospital stay and appropriate follow-up after discharge can prevent readmissions and thereby reduce the total costs of care. The Scorecard examined variations in 30-day readmission rates for a selected set of initial admissions for Medicare beneficiaries across regions to provide an indicator of quality outcomes for hospital and transition care.[58] On average, 18 percent of beneficiaries initially hospitalized with one of the specified conditions were readmitted to the hospital within 30 days. (Exhibit 34) The national rate is 30 percent higher than rates in the 10 percent of states with the lowest readmission rates. Medicare 30-day readmission rates vary significantly across the country and across regions within states: rates in the highest 10 percent of regions were more than 50 percent higher than in the lowest 10 percent of regions.

EFFICIENCY **Exhibit 34**

Medicare Hospital 30-Day Readmission Rates and Associated Costs, by Hospital Referral Regions, 2003



Data: G. Anderson and R. Herbert, Johns Hopkins University analysis of 2003 Medicare Standard Analytical Files (SAF) 5% Inpatient Data.

Source: Commonwealth Fund National Scorecard on U.S. Health System Performance, 2006

Readmissions sharply increased the payments to hospitals. In states with high readmission rates, payments for 30-day readmissions amounted to 42 percent of total Medicare payments, including payments for the initial hospitalization. Bringing all readmission rates down to levels achieved by the top 10 percent of regions would amount to a $1.9 billion annual savings for Medicare. Bringing higher-than-average state rates down to the median would save $546 million per year.[59]

Focusing on congestive heart failure (CHF) alone would offer the potential to improve care outcomes and reduce resource use. CHF is the most prevalent cause of potentially avoidable hospitals admissions in Medicare and leads to very high rates of readmission. In the Scorecard analysis, 22 percent of CHF hospitalized patients were readmitted within 30 days of discharge.

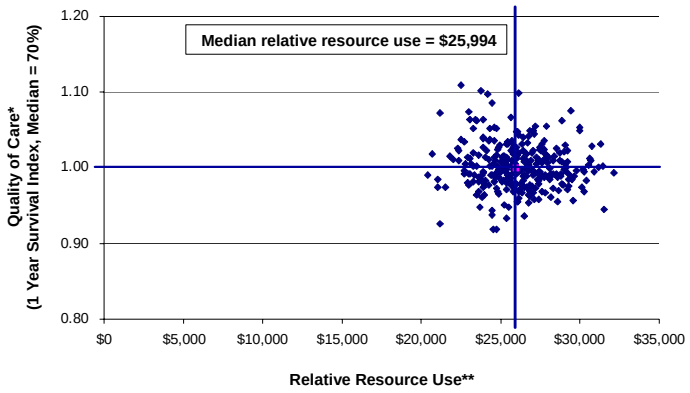
Analysis of the quality and costs of care for Medicare patients hospitalized for heart attacks, hip fracture, and colon cancer with resection reveal broad variations by regions of the country. Some regions achieve better outcomes (lower one-year mortality rates), and do so at lower costs through more efficient care systems. To identify high-performing regions, the Scorecard uses Medicare data for patients hospitalized between 2000 and 2002 for heart attacks, hip fracture, and colon cancer to rank all hospital referral regions in terms of their outcomes (based upon risk-adjusted one-year mortality rates) and relative resource use

(risk-adjusted spending on hospital and physician services using standardized national prices). Regions in the top-performance quartile on both quality (lowest risk-adjusted mortality) and costs (lowest resource use) were defined as the benchmark.[60] Data for 2003 were then used to estimate the potential savings in both lives and spending from improved performance.

In the analysis, both outcomes and costs of care varied significantly across regions of the country. One-year mortality rates on the composite indicator of three conditions ranged from a low of 27 percent in the top-performing 10 percent of regions to and high of 32 percent in the bottom 10 percent of regions. Risk-adjusted annual costs ranged from a high of $29,000 in the highest 10 percent of regions to $23,000 in the lowest 10 percent regions. (Exhibit 35) A high proportion of regions with the best outcomes—lower one-year mortality rates—also had lower total resource costs over the course of the year.

EFFICIENCY **Exhibit 35**

Quality and Costs of Care for Medicare Patients Hospitalized for Heart Attacks, Colon Cancer, and Hip Fracture, by Hospital Referral Regions, 2000–2002



* Indexed to risk-adjusted 1 year survival rate (median = 0.70).
** Risk-adjusted spending on hospital and physician services using standardized national prices.
Data: E. Fisher and D. Staiger, Dartmouth College analysis of data from a 20% national sample of Medicare beneficiaries.

Source: Commonwealth Fund National Scorecard on U.S. Health System Performance, 2006

Using regions in the top quartile for one-year survival rates and lowest quartile of annual resource cost areas as benchmarks, the Scorecard suggests that Medicare could save an estimated 8,400 lives and reduce annual costs by nearly $900 million for these three conditions alone if all other U.S. regions could achieve the performance levels of the benchmark regions. Raising the floor would also achieve substantial net gains: improved performance in regions with worse than average quality and costs would save 1,400 lives and nearly $200 million annually.

High-performing regions typically have fewer hospital readmissions during the year following discharge and less intensive use of physician services overall. They are also much less likely than lower-performing regions to have multiple different physicians involved in patient care. High-performing regions also evidence a greater reliance on primary care physicians.[61] In addition to having lower risk-adjusted mortality rates for the three conditions examined, the high-performance regions also tend to provide higher quality care on measures of technical quality for hospitalized patients. Conversely, regions in the worst quartiles on cost and outcomes have less integrated and coordinated care systems and a high proportion of patients seeing 10 or more physicians, extensive use of medical specialists, and high rates of churning across sites of care.

Analyses of the costs of caring for Medicare patients with three chronic conditions—diabetes, chronic pulmonary obstructive disease, and congestive heart failure—reveal even wider regional variations, as well as remarkably high average costs of care for patients with multiple chronic conditions. The cost of care for beneficiaries with these conditions in the five states with the lowest average costs (lowest 10% of states) or lowest 10% of regions was one-third less than the national average, after adjusting for wage differences. For beneficiaries with all three chronic conditions, the average spending per year came to $32,000 in 2001, ranging from $21,000 in the lowest-cost 10 percent of hospital referral regions to $44,000 or more for the highest-cost regions, a twofold spread. (Exhibit 36) Costs vary widely across states as well.

EFFICIENCY **Exhibit 36**

Costs of Care for Medicare Beneficiaries with Multiple Chronic Conditions, by Hospital Referral Regions, 2001

	Average annual reimbursement					Ratio of percentile groups	
	Average	10th percentile	25th percentile	75th percentile	90th percentile	90th to 10th	75th to 25th
All 3 conditions (Diabetes + CHF + COPD)	$31,792	$20,960	$23,973	$37,879	$43,973	2.10	1.58
Diabetes + CHF	$18,461	$12,747	$14,355	$20,592	$27,310	2.14	1.43
Diabetes + COPD	$13,188	$8,872	$10,304	$15,246	$18,024	2.03	1.48
CHF + COPD	$22,415	$15,355	$17,312	$25,023	$32,732	2.13	1.45

CHF = Congestive heart failure; COPD = Chronic obstructive pulmonary disease.
Data: G. Anderson and R. Herbert, Johns Hopkins University analysis of 2001 Medicare Standard Analytical Files (SAF) 5% Inpatient Data.

Source: Commonwealth Fund National Scorecard on U.S. Health System Performance, 2006

Quality measures focused on follow-up after hospitalization, regular care from physicians, and several preventive care indicators varied narrowly based on Medicare claims data, with a random association between quality and costs.[62] Lower-cost regions and states were often among the higher-performing areas on quality of care. These models of higher performance suggest that it should be possible to improve quality and, at the same time, lower costs.

Efforts focused on chronically ill patients offer substantial opportunities to improve care and lower resource use, given the high concentration of health spending on these patients. Strategies to improve care outcomes and reduce resource use for chronically ill patients will need to focus on care coordination. Patients with multiple chronic conditions are typically under the care of multiple physicians and at risk of medication complications as well as frequent ER visits and hospitalizations. Recent analysis by the Medicare Payment Advisory Commission (MedPAC), for example, finds that 61 percent of patients with CHF, diabetes, or coronary artery disease see 10 or more physicians, and 84 percent see at least six doctors.[63]

Perhaps nothing makes it clearer that the U.S. is failing to achieve a high performance health system than the wide variations in cost and quality across the country. The Scorecard indicators, plus a rich series of studies based on Medicare data, provide compelling evidence that it should be possible to raise quality and lower costs by following the practice patterns of providers who use far fewer resources in caring for patients but still achieve quality results. Coordinating care well, focusing on high-cost patients with complex or multiple chronic conditions; using evidence-based guidelines; and offering patient-centered care—all of these strategies have the potential to improve health outcomes for patients and add value for Medicare, Medicaid, and private payers.[64]

Insurance Administrative Costs

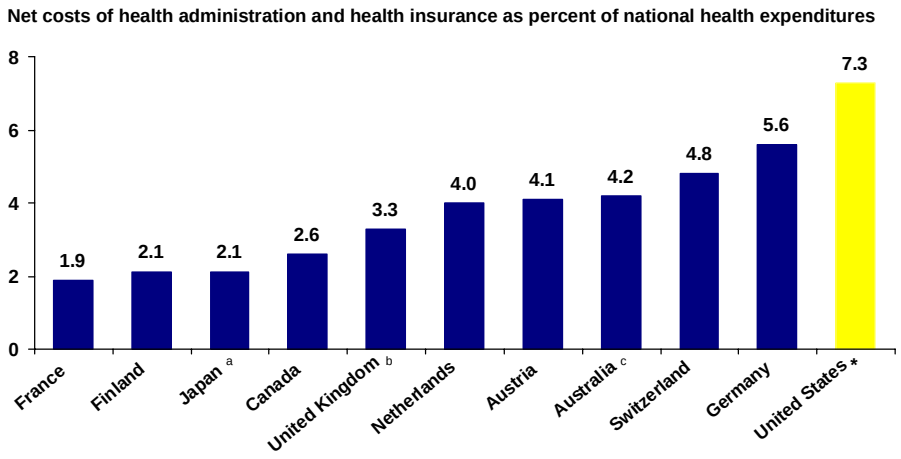
Private health insurance in the U.S. is characterized by complex benefit and cost-sharing designs and high rates of churning in enrollment, including when people lose and regain coverage. Variations among insurance plans entail separate forms, reporting requirements, credentialing, and pricing arrangements with medical care providers. Turnover in enrollment in both group and individual markets leads to higher marketing and underwriting costs for health plans. These costs add up: over the past five years, the net cost of insurance administration has increased by 75 percent.[65] Despite the introduction of electronic billing, which has the potential to reduce administration overhead, net costs have increased at annual rates in excess of medical costs each year since 2000. National

cost estimates of the resulting overhead for the U.S. health care system do not count the administrative staff in doctors' offices and hospitals necessary to cope with insurance billing and benefit complexity.

Currently, we lack detailed studies to estimate the extent to which administrative costs could be reduced through standardization, streamlined insurance administrative functions, and more collaborative public–private insurance arrangements. Insurance companies have also taken on new roles in negotiating prices and contracting for disease management. Looking outside the U.S. borders, however, suggests that there are opportunities to reduce insurance overhead costs through less fragmentation and more standardized approaches to insuring and paying for medical care. As of 2003, U.S. insurance administrative costs as a percentage of national health expenditures were more than three times the rates found in countries with the most integrated insurance systems. (Exhibit 37) Rates in the U.S. were also 20 to 30 percent higher than rates in Germany and Switzerland, two countries with complex insurance systems that include a substantial role for private insurance.

EFFICIENCY **Exhibit 37**

Percentage of National Health Expenditures
Spent on Health Administration and Insurance, 2003



[a] 2002 [b] 1999 [c] 2001
* Includes claims administration, underwriting, marketing, profits, and other administrative costs; based on premiums minus claims expenses for private insurance.
Data: OECD Health Data 2005.

Source: Commonwealth Fund National Scorecard on U.S. Health System Performance, 2006

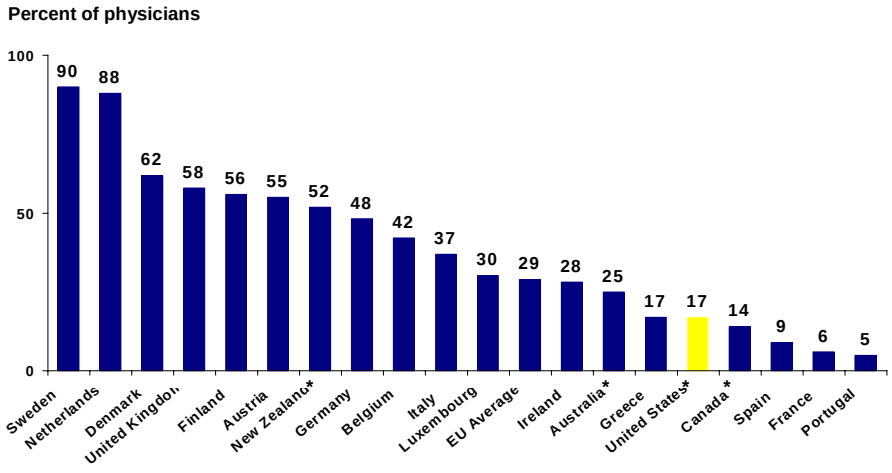
Information Systems to Support Efficient Care

Well-integrated electronic information systems have the capacity to improve the delivery of care, reduce medical errors, and enable the tracking and assessment of health system performance. Recent estimates of the potential national gain from investment in information technology suggest the U.S. could save more than $80 billion annually in greater efficiency and safety, with the potential to double the annual savings from better prevention and management of chronic disease.[66] Health information technology with physician decision-support mechanisms also has the potential to expand primary care capacity, increase physician and nurse productivity, and enable more coordinated team approaches to care.[67] Yet, in a $2 trillion health care industry, the U.S. care system has been slow to adopt and invest in new information systems.

The U.S. lags well behind other countries in physician use of electronic medical records: less than one of five U.S. physicians report using electronic medical records, compared with 60 to 90 percent in leading countries. (Exhibit 38) The spread of health information technology to improve clinical outcomes and administrative efficiencies in hospitals has also been slow. In 2005, the American Hospital Association reported that only one of 10 surveyed hospitals had fully implemented electronic health systems.[68] Moreover, such systems are rarely integrated across inpatient and outpatient settings, limiting the ability to share and transfer information among different care providers.

EFFICIENCY **Exhibit 38**

Physicians' Use of Electronic Medical Records, U.S. Compared with Other Countries, 2001



* 2000
Data: 2001 European Union EuroBarometer and 2000 Commonwealth Fund International Health Policy Survey of Physicians (Harris Interactive 2002).

Source: Commonwealth Fund National Scorecard on U.S. Health System Performance, 2006

EQUITY FOR ALL

Providing equal opportunities for all to live healthy and productive lives is fundamental to the nation's founding values. For this reason, national policy statements, including the Healthy People 2010 targets, make reducing and eliminating disparities in health care a top priority. Yet, reports tracking trends continue to find pervasive health disparities, with little progress or widening gaps over time by income, insurance, and race or ethnicity.[69] These three risk factors often go together: for example, minorities are more likely to have low incomes, and low-income adults and their families are more likely to be uninsured or underinsured.

The Scorecard documents substantial gaps by income, insurance, and race/ethnicity on indicators that span health outcomes, quality, access, and efficiency. Average ratio scores highlight the importance of providing access to affordable care: with the exception of safety, disparities are widest in the paired contrasts by income or insurance, with an average 34 percent gap between uninsured populations compared with benchmark insured populations and a 38 percent gap between low-income compared with benchmark high-income populations.[70] (Exhibit 39) On multiple indicators, it would require a 50 percent or greater improvement in the low-income or uninsured rate to equal the experience of high income or insured groups.

Exhibit 39. Equity: Ratio Scores for Insurance, Income, and Race/Ethnicity

	Insured Compared with Uninsured	High Income Compared with Low Income*	White Compared with Black	White Compared with Hispanic
EQUITY AVERAGE SCORE	**66**	**62**	**76**	**80**
(Number of indicators)	(17)	(25)	(25)	(25)
DIMENSION AVERAGES				
Long, Healthy, and Productive Lives	**NA**	**54**	**77**	**97**
Quality				
The Right Care	**63**	**71**	**80**	**72**
Safe Care	**97**	**95**	**73**	**94**
Patient-Centered, Timely Care	**51**	**57**	**78**	**64**
Universal Participation and Affordable Care	**59**	**29**	**81**	**84**
Coordinated and Efficient Care	**61**	**64**	**65**	**69**

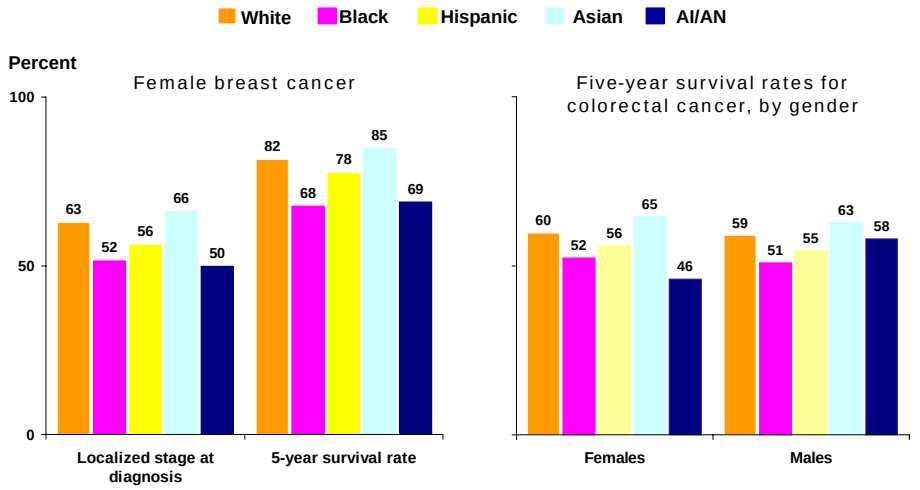
* Generally income compares either poor/near poor (<200% poverty) to those with incomes of 400% of poverty or higher or compares annual incomes of under $35,000 to incomes above $45,000. For mortality, income uses either census tract poverty rates or education level.
NA=data not available
Source: See Complete Chartpack and Technical Appendix for data source and date.

Hispanics and African Americans also fall far short of benchmark white rates, with particularly wide disparities in getting the right care, receipt of timely, patient-centered care, and insurance coverage. On average, it would require a 20 percent decrease in Hispanic risk rates to reach benchmark white rates on key indicators of quality, access, and efficiency. Hispanics were particularly at risk for being uninsured, not having a regular source of primary care, and not receiving essential preventive care.

Overall, it would require a 24 percent or greater improvement in African American mortality, quality, and access indicators to approach benchmark white rates. Black mortality rates are strikingly higher for heart disease, diabetes, and infant mortality and lower for five-year cancer survival. (Exhibit 40) African Americans are also at significantly higher risk for potentially preventable post-operative hospital complications and infections based on AHRQ hospital safety indicators.[71]

EQUITY: LONG, HEALTHY & PRODUCTIVE LIVES Exhibit 40

Stage at Diagnosis and Five-Year Survival Rate for Breast Cancer and Colorectal Cancer, by Race/Ethnicity, 1988–1997



AI/AN = American Indian or Alaskan Native.
Data: Surveillance, Epidemiology, and End Results (SEER) Program (Clegg 2002).

Source: Commonwealth Fund National Scorecard on U.S. Health System Performance, 2006

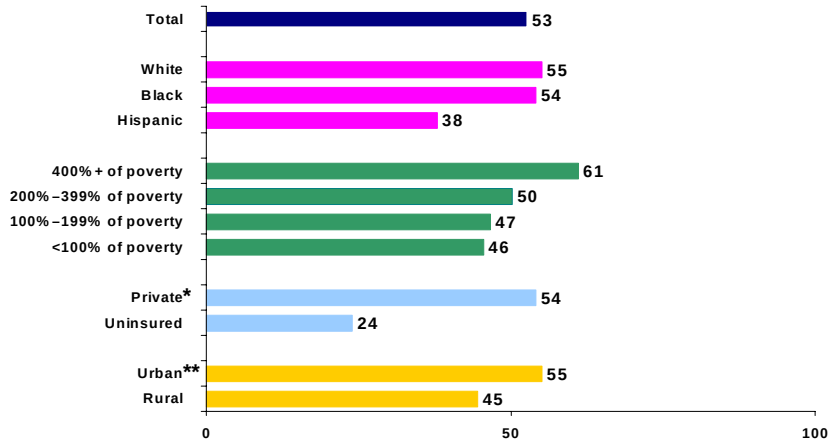
Compared with benchmark populations, adults in each vulnerable group were less likely to receive preventive care according to guidelines, more likely to wait for care when sick, and more likely to report communication difficulties during visits to physicians. The inequities by race and ethnicity in part reflect lower incomes and worse insurance coverage. Across a variety of indicators, higher-income, insured populations were generally at lower risk for poor access or quality, regardless of race or ethnicity.[72]

Insurance and income disparities are of particular concern for those with chronic disease. Among diabetics under age 65, adults with private insurance were more than twice as likely as those uninsured to receive all three recommended annual diabetic health screens. (Exhibit 41) The rates of receipt of recommended diabetic care dropped off steeply as income levels decreased. The extremely low rates of diabetic preventive care for uninsured, low-income, and Hispanic individuals put each group at high risk of poorly controlled chronic disease and complications leading to preventable hospital admissions, with personal and national health and cost consequences.

EQUITY: THE RIGHT CARE **Exhibit 41**

Receipt of All Three Recommended Services for Diabetics, by Race/Ethnicity, Family Income, Insurance, and Residence, 2002

Percent of diabetics (ages 18+) who received HbA1c test, retinal exam, and foot exam in past year



* Insurance for people ages 18–64.
** Urban refers to metropolitan area ≥1 million inhabitants; Rural refers to noncore area <10,000 inhabitants.
Data: 2002 Medical Expenditure Panel Survey (AHRQ 2005a).

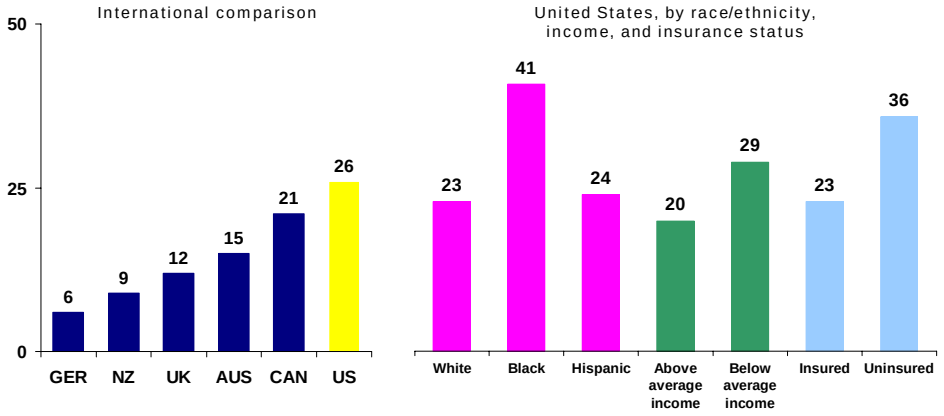
Source: Commonwealth Fund National Scorecard on U.S. Health System Performance, 2006

The striking disparities on indicators of efficiency and care coordination reveal the extent to which poor access and quality drive up costs of health care. Black, Hispanic, low-income, and uninsured patients were less likely to have a primary care provider to help coordinate care and were more likely to experience test results or records delays and duplication of tests. Low-income and uninsured patients are also significantly more likely to go to an emergency room when other care was not available. (Exhibit 42)

EQUITY: COORDINATED AND EFFICIENT CARE **Exhibit 42**

Went to ER for Condition That Could Have Been Treated by Regular Doctor, Among Sicker Adults, 2005

Percent of adults who went to ER in past two years for condition that could have been treated by regular doctor if available



GER=Germany; NZ=New Zealand; UK=United Kingdom; AUS=Australia; CAN=Canada; US=United States.
Data: Analysis of 2005 Commonwealth Fund International Health Policy Survey of Sicker Adults; Schoen et al. 2005a.

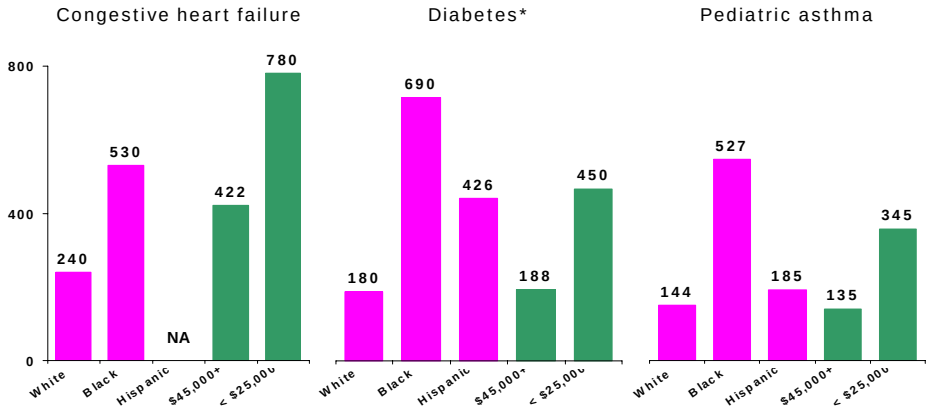
Source: Commonwealth Fund National Scorecard on U.S. Health System Performance, 2006

Low-income and minority populations are at high risk of being admitted to the hospital for potentially preventable medical conditions, particularly complications of chronic disease. Rates of admission for ambulatory care sensitive (ACS) conditions in low-income communities are double or more those in higher-income communities across multiple chronic conditions tracked by AHRQ.[73] (Exhibit 43) Gaps by community income levels and race/ethnicity for ACS hospital admissions tend to be widest for the under-65 population. The long-term consequences of poor access and disease persist once adults attain the age of eligibility for Medicare, with continued elevated rates of ACS admissions for high-poverty areas.[74]

EQUITY: COORDINATED AND EFFICIENT CARE **Exhibit 43**

Ambulatory Care Sensitive (Potentially Preventable) Hospital Admissions, by Race/Ethnicity and Patient Income Area, 2002

Adjusted rate per 100,000 population



* Combines 4 diabetes admission measures: uncontrolled, short-term complications, long-term complications, and lower extremity amputations. Data: Race/ethnicity estimates—Healthcare Cost and Utilization Project, State Inpatient Databases (disparities analysis files) and National Hospital Discharge Survey (AHRQ 2005a, 2005b); Income area estimates—HCUP, Nationwide Inpatient Sample (AHRQ 2005a). Patient Income Area = median income of patient zip code. NA = data not available.

Source: Commonwealth Fund National Scorecard on U.S. Health System Performance, 2006

Studies indicate that where patients receive care affects clinical quality and health outcomes. Compared with white and higher-income patients, black and low-income patients are more likely to receive care in hospitals with lower scores on clinical care quality and worse mortality outcomes. Blacks and low-income patients are also more likely to be cared for in nursing homes with worse-quality performance.[75] Cancer survival rates reveal lower survival rates for whites, blacks, and Hispanics living in areas with high levels of poverty, compared with those living in higher-income areas.[76] These patterns likely reflect insufficient resources at medical facilities located in high-poverty areas, as well as the difficulty patients encounter in navigating the care system when they need complex treatment for cancer or other serious illnesses.

Overall, the equity scores highlight the need for policies to expand coverage to ensure access to care as well as initiatives to raise standards of care and safety and provide culturally competent, patient-centered care. Efforts to improve safety should be of shared benefit to all patients. Safety was one area where risks were often similar across income, insurance, and racial/ethnic groups, although there were notable exceptions on selected indicators of hospital safety. Higher rates for black patients and, to a lesser extent, Hispanic patients emerged on some indicators, particularly those measuring infection rates and post-operative complications.[77] Better data, for example disaggregated by language spoken by patient, may eventually reveal further divides in patient safety.

Inequity in care is not just a social concern, but also an issue of concern for health system performance. Disparities contribute to poor performance on all dimensions of care—access, quality, and efficiency—and lead to missed opportunities to ensure long, healthy, and productive lives.

ENHANCED SYSTEM CAPACITY TO INNOVATE AND IMPROVE

The health system's capacity to improve through research and innovations in the organization and delivery of care, for example through integrated and performance-driven care practices and better workforce retention and team orientation, is critical to meeting future population health care needs. We currently lack a broad set of indicators to assess our system's capacity to improve that span workforce, research, and capacity to deliver well-integrated care and achieve productivity gains. As a result, the Scorecard includes an initial set of indicators but does not score this dimension of health system performance. A close look at the available data on aspects of system capacity illustrates the need to build a stronger foundation for system innovation. The available indicators underscore the finding that the nation has been slow to invest in the research, people, and infrastructure necessary to catalyze and implement positive changes.

For instance, only a minority of physicians report they have access to patient registries or clinical outcome data that would help them monitor, manage, and assess the quality of their care. Less than one-fifth of physicians have access to clinical outcomes data, regularly receive information about referrals they make, and say that medical test results are reliably and promptly available for patients. Access to patient data at the practice level is also limited: doctors cannot easily generate lists of patients by diagnoses or medications prescribed, nor do they have alert systems or prompts for drug interactions.[78]

A high performance health care system requires a highly motivated frontline workforce, workplaces that support team-based care, and integrated care delivery. The chronic shortages of nurses and limited capacity to train new nurses make it even more important for hospitals to keep nurse vacancy and turnover rates low. High nursing staff vacancy rates undermine the safety and quality of hospital care. Average vacancy rates of 10 percent —with rates as high as 15 percent in critical care units—put the nation on the cusp of nursing shortages.[79]

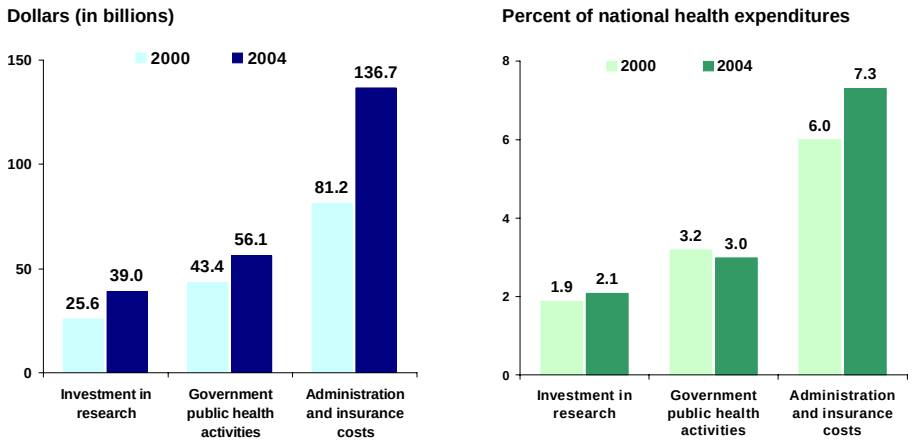
High rates of turnover of nursing home aides undermine the quality of care and put frail elderly and disabled residents' health and quality of life at risk. Average national turnover rates—at 71 percent—are extraordinarily high, and double the rates achieved in the top five states.[80] Low wages, lack of benefits, and stressful working conditions

contribute to high turnover. Studies indicate that redesigning nursing homes around the needs and preferences of residents and empowering staff to deliver "resident-centered" care could improve residents' quality of life and, at the same time, increase staff retention rates.[81] Viewed from a system perspective, improved staffing could also prevent complications requiring hospital admissions and readmissions, leading to a net gain in quality and more efficient use of resources.

The current level of investment in research on evidence-based care, comparative effectiveness of care, and system innovation is not commensurate with the scope, cost, and complexity of the U.S. care system. Only 2.1 percent of total national health expenditures, or $39 billion, goes toward research; this includes the entire National Institutes of Health budget. (Exhibit 44) Of this $39 billion, the federal government spends an estimated $1.5 billion on health systems research: less than $1 for every $1,000 in national health care spending.[82] Assuming private sector investments are equal to the federal level, national spending on health care system innovation comes to only 0.14 percent of total national health expenditures. This investment falls short of the need for knowledge on what types and structures of care work well.

SYSTEM CAPACITY TO IMPROVE **Exhibit 44**

National Health Expenditures Invested in Research and Spent on Public Health Activities Compared with Administration and Insurance Costs, 2000 and 2004



Data: CMS Office of the Actuary, National Health Statistics Group; and U.S. Dept. of Commerce, Bureau of Economic Analysis and U.S. Bureau of the Census (Smith et al. 2006).

Source: Commonwealth Fund National Scorecard on U.S. Health System Performance, 2006

Transformative change in the performance of the U.S. health care system will likely come from innovations in the way care is organized and delivered and from better

information and analyses to support evidence-based medicine. Achieving expanded access and improved quality with greater efficiency requires investment in research to improve the overall system's capacity to improve across all dimensions of care.

IMPACT OF ACHIEVING BENCHMARKS

The stakes are high for failing to address gaps in performance, as are the potential returns. Achieving benchmark levels of health system performance—levels that have been demonstrated to be feasible—could be expected to save lives, improve health, productivity, and quality of life, and reduce spending on waste, avoidable medical crises, and poor-quality care. The Scorecard indicates that progress on one dimension of health system performance can have positive effects on other dimensions. Similarly, improvement on multiple aspects of care could lead to a greater overall effect than improvement on any one aspect of care. As providers learn techniques for improving the quality of their care and policies seek to reward better performance, progress is likely on multiple aspects of care.

It is useful to put the potential impact of improvement on key indicators of performance into perspective, using current health outcomes and resources to provide context. Studies and rough estimates suggest that there could be significant progress in improving the health if the U.S. health care system were to move toward benchmark levels of performance on multiple indicators.

For example, if U.S. mortality rates for causes amenable to health care were to reach international benchmarks, approximately 88,000 fewer deaths would occur each year among adults under 75. Similarly, if infant mortality rates came down to benchmarks set by the leading countries, 17,000 more infants would survive each year. If hospital standardized mortality rates in the U.S. as a whole were as good as the top 10 percent of U.S. hospitals, up to 90,000 fewer hospital deaths would occur annually. The Institute of Medicine estimates that being uninsured results in 18,000 deaths annually and an estimated $65 billion to $130 billion of lost economic output from reduced productivity and costs of preventable illness.[83] Improving national rates of control of hypertension and diabetes to benchmark rates set by the top groups of U.S. health plans would yield an estimated 20,000 to 40,000 fewer preventable deaths per year.[84] Bringing one-year survival rates for heart attack, hip fracture, and colon cancer up to the level achieved by the top quartile of regions—which also have the lowest resource costs—would result in 8,400 fewer deaths per year for Medicare beneficiaries hospitalized for one of these three conditions.

It is not possible to add up the estimated lives saved per year or preventable deaths since there would be overlap among an indeterminate number of these estimates. Still, these indicators alone suggest that 100,000 to 150,000 deaths could be prevented each year if the U.S. were to raise standards of care to benchmark performance levels. Given that there are 2.4 million deaths each year, a 5 percent or more reduction in mortality rates could be achieved through effective strategies to reach benchmark levels. Of course, high poverty rates, and hazardous working and living conditions contribute to poor health outcomes: thus improved health system performance alone will not be sufficient to close the health outcomes gaps for high-risk, vulnerable communities and populations.

The estimates above do not count improvements in the quality of life from preventing disease or disabling conditions, bringing chronic disease under control and thus avoiding complications, and the multiple other aspects of health care that contribute to living healthy and productive lives. For example, the entire adult population stands to gain from the beneficial health effects of increasing preventive care from current low rates to at least 80 percent of adults receiving all recommended basic tests according to guidelines: reaching this benchmark rate would mean an increase of 67 million more adults with up-to-date preventive care and cancer screening.

Achieving benchmark levels of health system performance would achieve savings in the resources devoted to health care. Based on NCQA estimates, controlling diabetes and blood pressure to benchmark levels could yield $1 billion to $2 billion in savings through lower medical costs.[85] Reducing Medicare hospital readmissions to the performance of the best 10 percent of U.S. hospitals would save the program an estimated $1.9 billion. Reducing the rate of ambulatory care–sensitive hospitalizations by 20 to 30 percent would save an estimated $8 billion to $13 billion annually. If all geographic regions had the same resource costs for care of heart attack, hip fracture, and colon cancer patients as did the lowest-spending regions—which also had the best one-year survival rates—$900 million would be saved on these three conditions alone. Further savings are likely from better care coordination, fewer duplicate tests, and a reduction in unnecessary imaging. Better access to a medical home and better transitional care upon hospital discharge are likely to reduce costly emergency room use.

Improvements in patient safety, such as a reduction in medical, medication, or lab test errors; unsafe drug prescribing; and pressure sores for nursing home residents; would yield health gains in preventing unnecessary pain, suffering, and complications and at the same time reduce costs. One study suggested that improving hospital safety for a set of

indicators could save $9.3 billion annually in hospital charges associated with excess length of stay and complications.[86] These hospital safety estimates do not include potential savings from reduced medication errors in hospitals. Studies of adverse drug events in ambulatory care suggest savings in the range of $1 billion to $2.4 billion might be achieved based on estimated incidence and average costs of events that are preventable with improved systems of care.[87]

Better coordination of acute and long-term care, and improved quality of care in nursing homes, could reduce the high rates of hospitalization among the nation's 1.7 million nursing home residents, resulting in still further savings. Improved care during hospital stays and better coordination and follow-up care after hospital discharge could prevent readmissions and the associated costs of care.

Savings on the order of $20 billion to $25 billion from these aspects of more efficient, safe, and effective care are a fraction of the $1.9 trillion this nation spent on health care in 2004. Yet, taken together, this level of savings would be a significant beginning. While there are not adequate measures of the cumulative costs of duplication, inappropriate or unnecessary care, and inefficient work processes, improved efficiency in these areas would likely yield substantial additional gains.

These gains could be reinvested in further health system performance improvement. For example, savings reinvested in improving access to care for the uninsured or implementing modern information technology could reap substantial future benefits.

Furthermore, if U.S. insurance administrative costs were the same percentage of national health spending as Germany or Switzerland (countries with a public/private mix of insurance) or benchmark countries, the U.S. would save $28 billion to $85 billion annually.[88] While adopting an entirely different administrative structure may not be feasible, substantial administrative savings could be achieved through simplification and use of modern information technology.

Achieving benchmark levels of performance is also likely to enhance economic productivity and reduce the number of days of work or school that are missed due to poor health. Improving control of just two chronic diseases, diabetes and hypertension, could yield up to 46 million fewer sick days and $7 billion gains in productivity.[89] Improving control of children's asthma would put children back in school instead of in emergency

rooms or beds. Detecting cancer at early stages, or preventing its onset altogether with effective screening, could enhance lives and yield benefits for the nation.

In sum, the Scorecard indicators of opportunities to improve performance represent a real difference for the nation in terms of lives and national resources. In fact, if we closed just selected gaps that are described in the Scorecard, we could achieve overall savings of at least $50 billion to over $100 billion per year in health care spending and prevent 100,000 to 150,000 deaths. Moreover, the nation would gain from improved productivity. The Institute of Medicine, for example, estimates national economic gains of up to $130 billion per year from insuring the uninsured.

For the wealth and the resources it invests, the U.S. should expect to receive more in return. Broadening the opportunity to live a healthy and productive life and improving the effectiveness and efficiency of care would result in a more vibrant society, stronger families, and enriched communities. We should expect no less. The cumulative effect of gaps in quality, access, and efficiency add up to substantial costs to the nation in healthy lives and excess cost without value.

TIME FOR CHANGE

The Scorecard makes a compelling case for change. We fall far short of what is achievable on all major dimensions of performance. Key coverage and cost trends are moving in the wrong direction: getting worse, not better. The overwhelming picture that emerges is one of missed opportunities and room for improvement. Despite high expenditures, the U.S. lags behind other countries on summary indicators of mortality and healthy life expectancy. Within the United States, there is often a substantial spread in performance levels between the top and bottom groups of states, hospitals, nursing homes, or health plans as well as wide gaps between national averages and top rates. As a result, the U.S. average scores are low on multiple dimensions of health system performance.

The Scorecard findings, plus a growing body of evidence from other studies, lead to the conclusion that the U.S. should achieve better outcomes given the high levels of investment in the care system. Overall, the findings indicate that strategic policies are needed that take a whole-system approach based on an understanding of how access, quality, and costs interact, rather than a fragmented approach to change. Although the Scorecard divides dimensions of performance into quality access, efficiency and equity, these domains are closely interrelated. With coherent policies, it should be possible to achieve better access with improved quality and efficiency.

Universal Participation

Universal coverage and participation are essential to improve quality and cost performance, as well as access to care. High and rising rates of uninsured and underinsured destabilize the health care delivery system, fuel inefficient use of resources, and contribute to poor quality and outcomes of care. Inadequate and unstable insurance also exacerbate racial, ethnic, and income-based disparities in health, depriving vulnerable families of equal opportunities to live healthy lives and participate fully at school or work.

Fragmented and unstable coverage as increased insurance overhead costs and undermines the nation's ability to assess care or costs over time. Medicare is often the only insurance program with the stability to track outcomes and costs over episodes of care and follow patients over time. Failure to ensure universal participation and affordable access to care drives up national costs and undermines efforts to move toward more efficient financing and delivery systems.

Quality and Efficiency: Joint Strategic Goals

There is evidence that it is possible to improve quality and efficiency together, and it is essential to develop such approaches. Taken together, inadequate preventive and primary care, quality deficiencies in physicians' offices, hospitals, and nursing homes, and poor transitional care across sites lead to worse health outcomes, duplicate efforts, inefficient use of specialized care, medical errors, high rates of hospital admission and readmission, and ultimately higher costs. Conversely, more timely access to primary care, more efficient use of expensive resources, and more effective control of chronic disease should yield savings for the nation.

Efficiency indicators reveal wide variations in the cost and quality of health care, with better performance on quality often associated with lower cost. Analyses of Medicare data find that geographic areas that are among the top performers in terms of quality also deliver care at low resource cost levels, compared with national averages. High-performing areas typically have fewer physicians involved in the care of patients, contributing to better coordination, fewer hospital readmissions following discharge, and greater reliance on primary care. These and other Scorecard findings suggest that it would be possible to save lives and reduce the overall costs of care if the nation could develop strategic financing and delivery policies to move toward benchmark levels achieved in the highest-performing regions.

Care Coordination

The critical importance of improving care coordination emerges across multiple Scorecard indicators. Failure to coordinate care for patients over the course of treatment—as they see multiple physicians, are hospitalized and rehospitalized, and cared for at home by home health aides or in nursing homes—takes a toll on all fronts. Tests are repeated when records are lost or are unavailable when needed. Patients with complex health problems receive conflicting advice, suffer adverse drug reactions from conflicting medications, and become increasingly frustrated as they expend time and energy navigating a complex health system. Both patients and medical care providers stand to gain from efforts to coordinate and connect care systems.

Financial Incentives

Within regions of the U.S., analysis of Medicare data identifies areas that outperform national averages in terms of both quality and cost. Such areas are characterized by a focus on primary care, adherence to clinical guidelines, more integrated care delivery, and less intensive use of specialists and hospital care. Often, current financial incentives work against such models of improved care and efficiency: paying more for errors and hospital readmissions and penalizing practice patterns that achieve higher-quality care, better outcomes, and fewer complications with lower resource use. We need to devise financial incentives to reward more effective and efficient care, focusing on value and total costs of episodes of care.

Investment in Information Technology and System Capacity to Improve

The U.S. invests remarkably little in modern information technology or health services research, given the size and scope of the health care system. Currently, we under-invest in analysis of the cost-effectiveness of new treatment or devices, development of evidence-based clinical guidelines, and demonstrations to assess innovations in care delivery or financing.

Attention to the way care is organized and delivered and investment in information capacity are prerequisites for a more efficient and higher-quality care. Implementation of electronic medical records and other health information technology in physician offices and hospitals has been slow, leaving medical care staff without essential tools to ensure reliable, high-quality care. Developing information systems that span and foster better communication and coordination across providers and sites of care, will likely require a whole-system approach to build the critical mass for optimal gain. Policies that

link medical care providers and information will be essential for productivity, safety, and quality gains.

Net Gains and Reinvestment in System Improvements

There is ample evidence that savings are possible from greater efficiency in the health care system. Rates of hospital readmissions vary widely from one hospital to another, one region or state to another. Rates of hospitalizations of nursing home residents vary widely among nursing homes. Patients end up in hospitals or emergency rooms because they do not receive timely care or do not receive support to change their behavior or manage their chronic conditions. Scorecard indicators and an array of national studies reveal broad evidence of duplication, excessive or unnecessary care, or potentially harmful care.

The challenge is not just to implement more efficient and effective care practices, but also to channel the savings into investments in improved coverage and system capacity to improve in the future. Investment in health care services research and information systems is key to making continued progress.

Benchmarks

Benchmark rates of top-performing groups of U.S. hospitals, nursing homes, health plans, regions, and states, as well as international comparisons, demonstrate that it is possible to do better. On key indicators, there are often wide gaps between the top-performing rates and national averages, and between averages and rates at the bottom of the distribution. In many instances, the top 10 percentile or top quartile performance within the United States is quite good. It is the uneven performance and rates that are well below average pull down the national averages.

Setting national goals for improvement based on best-achieved rates is likely to be an effective method to motivate change and move the overall distribution to higher levels. As discussed above, IHI recently announced that its 18-month campaign exceeded its goal of saving 100,000 lives in over 3,000 participating hospitals, an example of the effectiveness of goal-directed national quality improvement.[90] The Scorecard benchmarks serve as evidence of the feasibility of better performance and targets for improvement.

THE NEED FOR A SYSTEM APPROACH

A basic characteristic of systems is that they are organized and coordinated. Our health system requires greater focus on improving health outcomes for patients over time and across providers. Efforts to improve care integration will be instrumental to building a

sounder foundation for the health system. Whether achieved through integrated health care delivery organizations, accountable physician groups or medical homes, or "virtual" health information systems that create unified patient records, patient care, care teams, and information need to be connected, and processes of care need to be designed to deliver safe and reliable care. At this time, there is a glaring lack of organization and coordination within the U.S. health care system overall.

Furthermore, as a nation, we face the challenge of rising rates of chronic disease. The Scorecard findings of very high per-person costs for Medicare beneficiaries with multiple chronic diseases, with remarkable variations in costs across regions of the country, serve as reminders that a minority of very sick patients account for a high proportion of national health care expenditures. Payment and care systems to support integrated, team approaches to managing patients with complex or multiple conditions, along with efforts to engage patients in care self-management, will be of paramount importance as the U.S. population ages.

In sum, the Scorecard findings indicate broad opportunities for the U.S. to improve. By offering benchmarks of performance levels that have been achieved, the Scorecard also points to areas where the U.S. can do better—much better. With cost and coverage vital signs moving in the wrong direction, there are high risks in failing to act. Leadership is urgently needed to transform the health system to secure a healthy nation.

NOTES

[1] *Indicators labeled "various" in Table 1 include the following components:* Indicator 7—Children preventive care: vaccines and preventive care visits; Indicator 8—Mental health: adults and children; Indicator 9—Chronic disease control: diabetes and hypertension; Indicator 13—Coordination at discharge: Rx reviewed, CHF discharge instructions, and follow-up visit after mental health discharge; Indicator 14—Nursing homes: admission and 30-day readmission rates; Indicator 17—Unsafe drug use: ambulatory visits for adverse effects, antibiotics for children with throat infection, and elderly use of inappropriate drugs; Indicator 18—Nursing home pressure sores: high-risk and short-stay; Indicator 24—Patient-centered hospital care: managed pain, responded when need help, and explained Rx; Indicator 30—Overuse/waste: duplicate tests; test results/records not available at appointment, and imaging study for back pain with no risk factors; Indicator 32—ACS admissions: national (CHF, diabetes, pediatric asthma) and Medicare total ACS; Indicator 35—Medicare annual costs for diabetes, CHF, COPD: patients with all 3 and any 2 conditions.

[2] Institute of Medicine, *Crossing the Quality Chasm: A New Health System for the 21st Century* (Washington, D.C.: National Academies Press, 2001); Institute of Medicine, *Insuring America's Health: Principles and Recommendations* (Washington, D.C.: National Academies Press, Jan. 2004); E. A. McGlynn, S. M. Asch, J. Adams et al., "The Quality of Health Care Delivered to Adults in the United States," *New England Journal of Medicine,* June 26, 2003 348(26):2635–45.

[3] G. F. Anderson, B. K. Frogner, R. A. Johns et al., "Health Care Spending and Use of Information Technology in OECD Countries," *Health Affairs*, May/June 2006 25(3):819–31.

[4] See, for example, IOM, *Crossing the Quality Chasm,* 2001; and *Insuring America's Health,* 2004.

[5] C. Schoen, K. Davis, S. K. H. How, and S. C. Schoenbaum, "U.S. Health System Performance: A National Scorecard," *Health Affairs* Web Exclusive (Sept. 20, 2006):w457–w475.

[6] See C. Schoen and S. K. H. How, *National Scorecard on U.S. Health System Performance: Complete Chartpack* and *Chartpack Technical Appendix* (New York: The Commonwealth Fund, Sept. 2006).

[7] Analysis by E. Fisher, Dartmouth College, for the Scorecard.

[8] E. Nolte and M. McKee, "Measuring the Health of Nations: Analysis of Mortality Amenable to Health Care," *British Medical Journal,* Nov. 15, 2003 327(7424):1129–33. Mortality amenable to health care includes deaths that occurred before age 75 from appendicitis, asthma, cancers with known effective treatment, diabetes (before age 49), measles, infections, heart disease (50%), and other conditions where appropriate care can make a difference. Rates are age-standardized to the European population distribution.

[9] Developed by the World Health Organization, healthy life expectancy adjusts life expectancy for the average number of years adults live in poor health, using national estimates of morbidity and disability. Data are from the World Health Organization, *The World Health Report 2003: Shaping the Future* (Geneva, Switzerland: WHO, 2003).

[10] Following the Nolte and McKee *BMJ* methodology, Kathy Hempstead, Rutgers University, provided the analysis for the Scorecard for 2002 U.S. mortality amenable to health care rates by state.

[11] The five states with the lowest mortality amenable per 100,000 in 2002 are: Minnesota (74), Utah (76), Vermont (79), Wyoming (81), and Alaska (83). The five states with the highest rates are: Mississippi (160), Louisiana (147), Arkansas (140), Tennessee (135), and South Carolina (134).

[12] The five states with the lowest infant mortality per 1,000 are: Maine (4.3), Vermont (4.4), Massachusetts (4.8), New Hampshire (5.0), and Iowa (5.3). The five states with the highest rates are: Mississippi (10.0), Louisiana (10.0), Tennessee (9.3), South Carolina (9.3), and Alabama (9.1).

[13] The analysis includes blood pressure checks, cholesterol level checks, Pap tests, mammograms, colorectal screens, and flu shots based on U.S. Preventive Task Force guidelines for sex and age.

[14] National Committee for Quality Assurance, *The State of Health Care Quality 2005, Industry Trends and Analysis* (Washington, D.C.: NCQA, 2005), Tables 6 and 7. NCQA analysis compared the top 10 percent of plans with national rates in NHANES, the same comparison used in the Scorecard.

[15] E. D. Peterson, M. T. Roe, J. Mulgund et al., "Association Between Hospital Process Performance and Outcomes Among Patients with Acute Coronary Syndromes," *Journal of the American Medical Association,* Apr. 26, 2006 295(16):1912–20.

[16] J. S. Skinner, D. O. Staiger, and E. S. Fisher, "Is Technological Change in Medicine Always Worth It? The Case of Acute Myocardial Infarction," *Health Affairs* Web Exclusive (Feb. 7, 2006): w34–w47.

[17] For discussion see Medicare Payment Advisory Commission, *Report to the Congress, Increasing the Value of Medicare—Chapter 2: Care Coordination in Fee For Service Medicare* (Washington, D.C.: MedPAC, June 2006).

[18] Children's "medical home" follows aspects listed by the American Academy of Pediatrics. In additional to access, questions ask about care coordination and communication. See *Chartpack Technical Appendix*.

[19] Authors' analysis of Medicare Expenditure Panel Survey. In analysis for the Scorecard, 28 percent of adults with a primary care source who said the place was easy to get to said it was difficult to make contact after hours. See *Scorecard Technical Appendix* for definitions of the adult and children's primary care and medical home indicators.

[20] E. Coleman, J. Smith, D. Raha et al., "Posthospital Medication Discrepancies, Prevalence and Contributing Factors," *Archives of Internal Medicine,* Sept. 12, 2005 165(16):1842–47; E. A. Coleman and R. A. Berenson, "Lost in Transition: Challenges and Opportunities for Improving the Quality of Transitional Care," *Annals of Internal Medicine,* Oct. 5, 2005 141(7):533–36.

[21] B. G. Druss, "Rising Mental Health Costs: What Are We Getting for Our Money?" *Health Affairs,* May/June 2006 25(3):614–22.

[22] M. Naylor, *Making the Bridge from Hospital to Home* (New York: The Commonwealth Fund, Fall 2003); S. C. Schoenbaum, D. Cookson, and S. Stelovich, "Postdischarge Follow-Up of Psychiatric Inpatients and Readmission in an HMO Setting," *Psychiatric Services,* Sept. 1995 46(9):943–45.

[23] Medicare Payment Advisory Commission, *A Data Book: Health Care Spending and the Medicare Program* (Washington, D.C.: MedPAC, June 2005), Charts 3–7, p. 29.

[24] O. Intrator, J. Zinn, and V. Mor, "Nursing Home Characteristics and Potentially Preventable Hospitalization of Long-Stay Residents," *Journal of the American Geriatrics Society,* Oct. 2004 52(10):1730–36.

[25] Low Medicaid payments to nursing homes can undermine the staffing necessary to prevent complications. Medicare pays when a nursing home resident is admitted to a hospital. Nursing homes also receive higher Medicare rates when the resident returns. Although lower admission/ readmission rates would reduce Medicare costs, there is currently no policy mechanism to help share gains and reward homes for improved quality of nursing home care or transition care.

[26] AHRQ has plans to develop a composite indicator, with estimates of excess costs and mortality associated with composite rate variations. When the composite becomes available, with rates published by state or hospital group variations, future editions of the Scorecard will present variations and score the indicator.

[27] R. M. Wachter, "The End of the Beginning: Patient Safety Five Years After *To Err Is Human*," *Health Affairs* Web Exclusive (Nov. 30, 2004):W4-534–W4-545.

[28] C. Schoen, R. Osborn, P. T. Huynh et al., "Taking the Pulse of Health Care Systems: Experiences of Patients with Health Problems in Six Countries," *Health Affairs* Web Exclusive (Nov. 3, 2005):W5-509–W5-525.

[29] Agency for Healthcare Research and Quality (AHRQ), *National Healthcare Quality Report 2005* (Rockville, Md.: U.S. Department of Health and Human Services, 2005); J. A. Linder, D. W. Bates, G. M. Lee et al., "Antibiotic Treatment for Children with Sore Throat," *Journal of the American Medical Association,* Nov. 9, 2005 294(18):2315–22.

[30] A. J. Forster, H. J. Murff, J. F. Peterson et al., "The Incidence and Severity of Adverse Events Affecting Patients After Discharge from the Hospital," *Annals of Internal Medicine,* Feb. 4, 2003 138(3):161–74, cited in MedPAC, *Report to the Congress,* 2006, Chapter 2, p. 36.

[31] Schoen et al., "Taking the Pulse," 2005; I. Wilson, C. Schoen, P. Neuman et al., "Physician–Patient Communication About Prescription Medication Non-Adherence: A 50-State Study of America's Seniors," *Journal of General Internal Medicine,* forthcoming.

[32] Preliminary calculations based on published rates, National Nosocomial Infections Surveillance System.

[33] AHRQ has developed a set of hospital safety indicators derived from codes in hospital administrative data. The Scorecard includes trends for some of the most frequent events. See MedPAC, *Data Book,* 2005, for Medicare trends. Chart 3-3 and http://www.HCUPnet.ahrq.gov include national rates based on AHRQ analyses of national and state hospital data.

[34] P. S. Romano, "What Do We Know About Overall Trends in Patient Safety in the USA?" June 26, 2006, presentation at AcademyHealth 2006 Annual Research Meeting, available at http://www.academyhealth.org/2006/4c4/RomanoP.ppt; P. S. Romano, J. J. Geppert, S. Davies et al., "A National Profile of Patient Safety in U.S. Hospitals," *Health Affairs,* Mar./Apr. 2003 22(2):154–66.

[35] Sir Brian Jarman, Imperial College, U.K., provided the indicator and analyses based on three years of Medicare data for 1,550 general, acute care hospitals with good quality data, covering about 62 percent of U.S. Medicare cases and deaths in 2000. To focus on processes within the control of hospitals, the analysis used standardized rates plus regression adjustments for community and patient risk factors. Rates were scaled up to all hospitals and diagnoses to estimate potential reductions in hospital mortality. For use in the U.K and U.S., see: B. Jarman, S. Gault, B. Alves et al., "Explaining Differences in English Hospital Death Rates Using Routinely Collected Data," *British Medical Journal,* June 5, 1999 318(7197):1515–20; B. Jarman, A. Bottle, P. Aylin et al., "Monitoring Changes in Hospital Standardised Mortality Ratios," *British Medical Journal,* Feb.12, 2005 330(7487):329; Institute for Healthcare Improvement, *Move Your Dot: Measuring, Evaluating and Reducing Hospital Mortality Rates* (Cambridge, Mass.: IHI, 2003).

[36] For a discussion of IHI's 100,000 Lives Campaign in the U.S., see Institute for Healthcare Improvement, http://www.ihi.org/IHI/Programs/Campaign/Campaign.htm.

[37] D. McCarthy and D. Blumenthal, *Committed to Safety: Ten Case Studies on Reducing Harm to Patients* (New York: The Commonwealth Fund, Apr. 2006). Also see Improvement Stories at http://www.ihi.org.

[38] Institute for Healthcare Improvement, "IHI Announces that Hospitals Participating in 100,000 Lives Campaign Have Saved an Estimated 122,300 Lives," press release, June 14, 2006, available at http://www.ihi.org/NR/rdonlyres/1C51BADE-0F7B-4932-A8C3-0FEFB654D747/0/100kLivesCampaignJune14MilestonePressRelease.pdf.

[39] C. Schoen et al., "Taking the Pulse," 2005.

[40] R. A. Lowe, A. R. Localio, D. F. Schwartz et al., "Association Between Primary Care Practice Characteristics and Emergency Department Use in a Medicaid Managed Care Organization," *Medical Care,* Aug. 2005 43(8):792–800.

[41] T. Bodenheimer, E. H. Wagner, and K. Grumbach, "Improving Primary Care for Patients with Chronic Illness: The Chronic Care Model, Part 2," *Journal of the American Medical Association,* Oct. 16, 2002 288(15):1909–14. Also see MedPAC, *Report to the Congress,* 2006, Chapter 2 on Care Coordination.

[42] Based on hospitals submitting 2005 reports to the National CAHPS Benchmarking Database. Data analysis provided by analysts at AHRQ. For variations by patient characteristics, see: AHRQ, *CAHPS Hospital Survey Chartbook, What Patients Say About Their Experiences with Hospital Care, Report and Summary Data from Hospital Test Sites March 2006* (Rockville, Md.: U.S. Department of Health and Human Services, Mar. 2006).

[43] AHRQ, *National Healthcare Quality,* 2005, Table 1.107.

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