NATIONAL SCORECARD ON
U.S. HEALTH SYSTEM PERFORMANCE:
CHARTPACK TECHNICAL APPENDIX

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The following Technical Appendix provides additional information on the data presented in the Complete Chartpack for the National Scorecard on U.S. Health System Performance. Specifically, it describes the primary data sources used, details each of the scored indicators, and lists publications and articles referenced in the Chartpack.

PART A. DATA SOURCES FOR SCORED INDICATORS

The **Behavioral Risk Factor Surveillance System** (BRFSS) is a continuous, cross-sectional telephone survey of the civilian, noninstitutionalized adult (age 18 or older) population conducted in cooperation between the Centers for Disease Control and Prevention and state health departments. The objective of the BRFSS is to collect uniform, state-specific data on preventive health practices and risk behaviors that are linked to chronic diseases, injuries, and preventable infectious diseases in the adult population. Rates are weighted to be representative of the adult population in each state. In 2004, a total of 303,822 interviews were completed. For more information, see: http://www.cdc.gov/brfss.

The **Commonwealth Fund Biennial Health Insurance Survey** focuses on the stability and quality health insurance coverage of Americans and the health and financial consequences families face when they experience breaks in insurance. The survey includes an array of questions about access and care experiences, out-of-pocket medical care costs, medical bill problems, insurance, income, and other demographic characteristics. The survey consists of 25-minute telephone interviews (in either English or Spanish) with a random, nationally representative sample of adults age 19 and older living in the continental United States. The 2003 survey included 4,052 interviews conducted from September 2003 through January 2004. The 2005 survey included 4,350 interviews conducted from August 2005 through January 2006. For more information, see: http://www.cmwf.org/surveys/surveys.htm.

The 2004 **Commonwealth Fund International Health Policy Survey of Adults' Experiences with Primary Care** explores the public's views on and experiences with their health care system in Australia, Canada, New Zealand, the United Kingdom, and the United States. With a focus on primary and preventive care, the survey includes an array of questions on timeliness of health care access, medical errors, doctor-patient communication, patient involvement in decision-making, prescription drug use, and patient information and choice. The survey consisted of 17-minute telephone interviews with random, representative samples of people age eighteen and older in each of the five countries. Harris Interactive and country affiliates conducted telephone interviews between March and May 2004. The final samples of adults were 1,400 in Australia, 1,410 in Canada, 1,400 in New Zealand, 3,061 in the United Kingdom, and 1,401 in the United States. To compare experiences among lower- and higher-income adults, the survey cited the national median household income in 2004 in each country and asked whether the person's own income was much or somewhat below, about average, or much or somewhat above the national average. For more information, see: http://www.cmwf.org/surveys/surveys.htm.

The 2005 **Commonwealth Fund International Health Policy Survey of Sicker Adults** consisted of telephone interviews with adults with health problems in Australia, Canada, Germany, New Zealand, the United Kingdom, and the United States. The survey examined the public's views of how well their health care system is performing on key measures of safety, coordination, access, and chronic disease management. The survey

screened random samples of adults ages 18 and older in order to identify those who met at least one of four criteria: 1) rated their health status as fair or poor; 2) reported having a serious illness, injury, or disability that required intensive medical care in the previous two years; 3) reported that in the past two years they had undergone major surgery; or 4) reported that they had been hospitalized for something other than a normal delivery. These questions resulted in final survey samples of: 702 in Australia; 751 in Canada; 704 in New Zealand; 1,503 in Germany; 1,770 in the United Kingdom; and 1,527 in the United States. Interviews were conducted by Harris Interactive and subcontractors from March 2005 to June 2005. For more information, see: http://www.cmwf.org/surveys/surveys.htm.

The **National CAHPS Benchmarking Database** is the national repository for data from the Consumer Assessment of Health Plans and Providers Study (CAHPS) family of surveys designed to measure important dimensions of health care performance from the consumer's point of view. The program to develop these surveys is sponsored by Agency for Healthcare Research and Quality AHRQ. CAHPS surveys are administered by mail or telephone to a random sample of health plan members by independent survey vendors, following standardized procedures. Health plan members report on their experiences in obtaining health care, including the following five major areas: getting needed care; getting care without long waits; how well doctors communicate; courtesy and helpfulness office staff, and customer service. The 2004 database holds survey results for approximately 415,000 adults and children enrolled in Commercial, Medicaid, SCHIP, and Medicare plans. The National Committee for Quality Assurance reports aggregate CAHPS data on commercial and Medicaid health plans collected as part of the Health Plan Employer Data and Information Set. Aggregate data on Medicare health plans is reported by the Centers for Medicare and Medicaid Services, which contracts with a single vendor to administer a Medicare CAHPS survey.

The Hospital Survey Component of the CAHPS Database is currently under development, starting with the data submitted from 254 hospitals that voluntarily tested the survey in 2005. The **CAHPS Hospital Survey** (H-CAHPS) provides a standardized instrument and data collection methodology for measuring experiences of adult inpatients with hospital care and services. H-CAHPS reporting questions fall into seven major report composites that summarize consumer experiences in the following areas: 1) communication with doctors, 2) communication with nurses, 3) responsiveness of hospital staff, 4) cleanliness and quietness of the hospital, 5) pain control, 6) communication about medicines, and 7) discharge information. Starting in 2006, hospitals across the country will begin using this survey and voluntarily reporting data to the Centers for Medicare & Medicaid Services (CMS). CMS plans to initiate public reporting of those results in late 2007. For more information, see: http://www.cahps.ahrq.gov/content/ncbd/ncbd_Intro.asp?p=105&s=5.

The **Healthcare Cost and Utilization Project** (HCUP) is a collaboration between state and private data organizations, hospital associations, and the federal Agency for Healthcare Research and Quality to create a national information resource of patient-level health care data. HCUP includes the largest collection of longitudinal hospital care data

in the United States, encompassing all-payer, discharge-level information. The HCUP **Nationwide Inpatient Sample** (NIS) is a nationally stratified sample of hospitals (with all of their discharges) from states that contribute data to the NIS dataset. Weights are used to develop national estimates. NIS 2002 contains data for approximately seven million discharges from 995 hospitals located in 35 States, approximating a 20 percent stratified sample of U.S. community hospitals. The 2002 HCUP **Statewide Inpatient Databases** (SID) include all hospitals (with all of their discharges) from 36 participating States. In aggregate, the SID represent approximately 90 percent of all U.S. hospital discharges, totaling over 28 million inpatient discharge abstracts. Some measures that use HCUP data are based on AHRQ Quality Indicators, including Prevention Quality Indicators (hospital admissions for 16 ambulatory care sensitive conditions) and Patient Safety Indicators (potential inpatient complications and other patient safety concerns following surgeries, other procedures, and childbirth). For more information, see: http://www.ahrq.gov/data/hcup.

The **Health Plan Employer Data and Information Set** (HEDIS) is a set of standardized performance measures designed to assess the quality of managed health care plans related to many significant public health issues such as cancer, heart disease, smoking, asthma and diabetes. It also includes a standardized survey of consumers' experiences that evaluates plan performance in areas such as customer service, access to care and claims possessing. HEDIS was developed by the National Committee for Quality Assurance (NCQA), a nonprofit accreditation and quality-monitoring organization. NCQA collects Medicare HEDIS data on behalf of the Centers for Medicare & Medicaid Services (CMS), and Medicaid HEDIS data on behalf of state agencies. In addition, NCQA collects commercial data on behalf of some states and the U.S. Office of Personnel Management for health plan report cards. HEDIS uses data from member surveys, administrative claims, and medical records. Results are audited according to NCQA standards. For more information, see: http://www.ncqa.org.

The **Hospital Quality Alliance** (HQA) national reporting system is a public-private collaborative intended to provide critical information about hospital quality performance to the public. The HQA includes the Centers for Medicare and Medicaid Services (CMS), the Agency for Healthcare Research and Quality (AHRQ), and key national hospital groups, health care quality organizations, and consumer groups. An important element of the collaboration, **Hospital Compare**, is a data system that measures how often hospitals provide recommended treatments for heart attack, heart failure, pneumonia and surgical infection prevention. The database is maintained by the CMS, which receives the data voluntarily from about 4,200 short-term acute care hospitals and rural small, remote "critical access" hospitals. The facilities agree to report on a "starter set" of 10 quality performance measures and to have their data available to the public. The short-term acute care facilities receive an incentive payment for participating. Since the second quarter of 2004, hospitals have had the option to submit data on an additional 10 measures. The twenty hospital quality measures on Hospital Compare have gone through years of extensive testing for validity and reliability by CMS and its Quality Improvement Organizations (QIOs), the Joint Commission on Accreditation of Healthcare

Organizations, the HQA and researchers. This Hospital Compare database is accessible at
http://www.hospitalcompare.hhs.gov. For more information, see:
http://www.cms.hhs.gov/HospitalQualityInits/15_HospitalQualityAlliance.asp.

The **Medical Expenditure Panel Survey** (MEPS), sponsored by the federal Agency for
Healthcare Research and Quality, produces nationally representative estimates of health
care use, expenditures, sources of payment, insurance coverage, and quality of care for
the U.S. civilian, non-institutionalized population. The core survey, called the Household
Component (HC), consists of a series of interviews with a subsample of participants in
the prior year's National Health Interview Survey (NHIS) conducted by the National
Center for Health Statistics. The MEPS-HC augments NHIS by collecting additional data
on respondents' health care expenditures, and linking these data with additional
information from the respondents' medical providers, employers, and insurance
providers. The sample sizes are 12,852 families in 2001 and 14,828 families in 2002,
with response rates of about 66 percent for full-year participation.

The MEPS Insurance Component (IC) fields questionnaires to private and public sector
employers to collect data on the number and types of private health insurance plans
offered, benefits associated with these plans, premiums, contributions by employers and
employees, eligibility requirements, and employer characteristics. In 2003, the list sample
included a total of 43,774 single and multiunit private sector establishments. For more
information, see: http://www.meps.ahrq.gov.

The **Medicare Standard Analytical Files** (SAF) contain final action claims data
collected by Medicare to pay for health care services provided to a Medicare beneficiary.
SAFs are available for each institutional (inpatient, outpatient, skilled nursing facility,
hospice, or home health agency) and non-institutional (physician and durable medical
equipment providers) claim type. The record unit of SAFs is the claim (some episodes of
care may have more than one claim). The **Inpatient SAF** contains final action claims
data submitted by inpatient hospital providers for reimbursement of facility costs. Some
of the information contained in this file includes diagnosis, (ICD-9 diagnosis), procedure
(ICD-9 procedure code), Diagnosis Related Group (DRG), dates of service,
reimbursement amount, hospital provider, and beneficiary demographic information. For
more information, see: http://www.resdac.umn.edu/Index.asp.

The **National Ambulatory Medical Care Survey** (NAMCS), conducted by the Centers
for Disease Control and Prevention's National Center for Health Statistics, is a nationally
representative survey of nonfederal, office-based physicians who are primarily engaged
in direct patient care. The specialties of anesthesiology, pathology, and radiology are
excluded. Participating physicians complete an encounter form for each patient visit
during a randomly selected week, listing patients' symptoms, physicians' diagnoses, and
medications ordered or provided. In recent years, about 1,000 to 1,500 physicians have
participated, representing a response rate of 63 to 71 percent. For more information, see:
http://www.cdc.gov/nchs/about/major/ahcd/ahcd1.htm.

The **National Health and Nutrition Examination Survey** (NHANES) is a nationally representative, cross-sectional survey of civilian, noninstitutionalized Americans. Trained interviewers survey participants at home to ascertain sociodemographic characteristics and medical and family history. After the household interview, participants attend a mobile examination center to undergo medical and dental examinations, physiological measurements, and laboratory tests administered by highly trained medical personnel. Primary survey topics include chronic disease prevalence and conditions (including undiagnosed conditions) and risk factors such as obesity and smoking, serum cholesterol levels, hypertension, diet and nutritional status, immunization status, infectious disease prevalence, health insurance, and measures of environmental exposures. NHANES 1999–2000 selected 12,160 persons of whom 76 percent participated in the medical examination. NHANES 2001–2002 selected 13,156 of whom 80 percent participated in the medical examination response. For more information, see: http://www.cdc.gov/nchs/nhanes.htm.

The **National Hospital Ambulatory Medical Care Survey** (NHAMCS), conducted by the Centers for Disease Control and Prevention's National Center for Health Statistics, is a nationally representative survey of visits to emergency departments (EDs) and outpatient departments (OPDs) of nonfederal, acute-care hospitals in the United States. Hospital staff complete encounter forms for a systematic random sample of patient visits during a randomly selected four-week period. Information is obtained on various aspects of patient visits, including patient, hospital, and visit characteristics. About 500 hospitals participate each year, of which about 80 percent have EDs and about 50 percent have OPDs. Response rates ranged from 93 to 97 percent for EDs and 86 to 95 percent for OPDs in recent years. Data are weighted to represent national estimates. For more information, see: http://www.cdc.gov/nchs/about/major/ahcd/ahcd1.htm.

The **National Immunization Survey** (NIS) has been conducted annually since 1994 by the National Immunization Program and the National Center for Health Statistics. The NIS provides national, state, and selected urban area estimates of vaccination coverage rates for U.S. children between the ages of 19 and 35 months at the time of the survey. The NIS combines two stages: 1) a random-digit-dialing telephone survey of nearly 1 million households conducted in English and Spanish to identify approximately 34,000 households with age-eligible children and obtain parent-reported vaccination histories based on written records whenever possible, and 2) a mail survey of all parent-identified child vaccination providers to validate the immunization record. Household and provider data are combined to produce provider adjusted vaccination estimates. Provider vaccination record data was obtained for 21,210 children in 2003; the overall response rate for eligible households was 63 percent. Final estimates are weighted to represent all children ages 19 to 35 months and adjusted to account for nonresponse and households without telephones. For more information, see: http://www.cdc.gov/nis/.

The **National Survey of Children's Health** (NSCH), conducted for the first time in 2003, was designed to produce national and state-specific prevalence estimates for a variety of physical, emotional, and behavioral health indicators and measures of children's experiences with the health care system. The survey also includes questions

about the family (e.g., parents' health status, stress and coping behaviors, family activities) and the neighborhood that can affect children's health. The survey was supported and developed by the U.S. Maternal and Child Health Bureau of the Health Resources and Services Administration and conducted by the National Center for Health Statistics. A random-digit-dial sample of households with children under 18 years of age was selected from each of the 50 States and the District of Columbia. One child was randomly selected from all children in each identified household to be the subject of the survey. The respondent was the parent or guardian who knew the most about the child's health and health care. A total of 102,353 interviews were completed from January 2003 to July 2004. The weighted overall response rate was 55.3%. Interactive survey data queries are possible through the Data Resource Center on Child and Adolescent Health web site at http://www.nschdata.org/. For more information, see: http://www.cdc.gov/nchs/about/major/slaits/nsch.htm.

The **National Survey on Drug Use and Health** (NSDUH), sponsored by the Substance Abuse and Mental Health Services Administration (SAMHSA) of the U.S. Department of Health and Human Services, collects data on the substance abuse and dependence, mental health problems, and receipt of substance abuse and mental health treatment. The survey is conducted annually and reports on the prevalence, patterns, and consequences of drug and alcohol use and abuse in the general U.S. civilian noninstitutionalized population age 12 and over. The data collection method is in-person interviews conducted with a sample of individuals at their place of residence. Nationally, 130,605 addresses were screened for the 2003 survey, and 67,784 completed interviews were obtained. For more information, see: http://oas.samhsa.gov/nsduh.htm.

The **National Vital Statistics System—Linked Birth and Infant Death Data** (NVSS-I) are maintained by Centers for Disease Control and Prevention, National Center for Health Statistics. These data sets link death certificates to corresponding birth certificates registered in all 50 states and D.C. for infants aged 1 year or less who died in the United States. The vital statistics general mortality data are a fundamental source of geographic and cause-of-death information, and some demographic information. The birth certificate is the primary source of demographic information, such as age, race, and Hispanic origin of the parents; maternal education; live birth order; and mother's marital status; and of maternal and infant health information, such as birthweight, period of gestation, plurality, prenatal care usage, and maternal smoking, etc. For more information, see http://www.cdc.gov/nchs/linked.htm.

The **National Vital Statistics System—Mortality** (NVSS-M) file contain vital statistics mortality data used to present the characteristics of those dying in the United States, including demographic information on age, sex, race, Hispanic origin, state of residence, and education attainment, and medical information on cause of death. Demographic information on the death certificate is provided by the funeral director and is based on information supplied by an informant. Medical certification of cause of death is provided by the physician, medical examiner, or coroner. The data are used to present the characteristics of those dying the United States, to determine life expectancy, and to compare mortality trends with other countries. For more information, see: http://www.cdc.gov/nchs/deaths.htm.

The **Nursing Home Minimum Data Set** (MDS) is a standardized, primary screening and assessment tool of health status of all residents in Medicare or Medicaid certified nursing and long-term care facilities. Information is collected on the resident's health, physical functioning, mental status, and general well-being. Regulations require nursing home personnel collect MDS on admission, quarterly, annually, whenever the resident experiences a significant change in status and whenever the facility identifies a significant error in a prior assessment. Regulations require that a MDS assessment be performed at admission, quarterly, annually, and whenever the resident experiences a significant change in status. These data are used by the nursing home to access the needs and develop a plan of care unique to each resident. For residents in a Medicare Part A stay, the MDS is also used to determine the Medicare reimbursement rate. Facilities are required to electronically transmit MDS data to the states for retrieval by a national repository established by CMS. For more information, see: http://new.cms.hhs.gov/NursingHomeQualityInits.

OECD Health Data 2005 is an interactive database comprising data collected by the Organization for Economic Cooperation and Development on a range of key aspects of the health care systems in the 30 OECD Member countries which are presented in a demographic, economic and social context. The data comprise some 1,200 different series, most recently for 2002/2003, with many time series going back as far as 1960. For more information, see: http://www.oecd.org/health/healthdata.

The **Outcome and Assessment Information Set** (OASIS) is a group of data elements that represent core items of a comprehensive assessment for an adult home care patient. Most OASIS data items are designed to be collected at the start of care and every two months thereafter until and including time of discharge. Because OASIS can measure changes in a patient's health status, it forms the basis for measuring patient outcomes for purposes of outcome-based quality improvement. Assessments are completed by home health agency personnel, and include demographics and patient history, living arrangements, supportive assistance, sensory status, integumentary (skin) status, respiratory status, elimination status, neuro/emotional/behavioral status, activities of daily living, medications, equipment management, and information collected at inpatient facility admission or agency discharge. The federal government requires that all Medicare-certified home health agencies collect and report OASIS data for adult, nonmaternity patients whose skilled care is paid for by Medicare or Medicaid. For more information, see: http://www.cms.hhs.gov/oasis/01_overview.asp?.

The **Surveillance, Epidemiology, and End Results** (SEER) Program of the National Cancer Institute (NCI) tracks incidence of persons diagnosed with cancer during the year as well as follow-up information on previously diagnosed patients until death. The SEER Program currently collects and publishes cancer incidence and survival data from 14 population-based cancer registries covering approximately 26 percent of the US population. SEER registries routinely collect data on patient demographics, primary tumor site, tumor morphology and stage at diagnosis, first course of treatment, and follow-up for vital status. For more information, see: http://www.seer.cancer.gov.

PART B. NOTES ON SCORED INDICATORS AND RELATED CHARTS

SECTION 1. LONG, HEALTHY, AND PRODUCTIVE LIVES

1. Mortality amenable to health care

Data for deaths amenable to health care age-standardized across 19 countries are from a published study conducted by Ellen Nolte and Martin McKee (Nolte and McKee 2003, p.3). Using 1998 mortality data reported to the World Health Organization, Nolte and McKee calculated deaths before age 75 that resulted from causes considered at least partially treatable and/or preventable with timely and appropriate medical care. See following list of conditions and specific age ranges for causes of death considered amenable to health care in the analysis. The analysis includes half of the total mortality resulting from ischemic heart disease (IHD) based on evidence suggesting that up to half of premature mortality from IHD may be amenable to health care. Data on mortality amenable to health care by U.S. states are from an analysis conducted for the Scorecard by Katharine Hempstead at Rutgers University. Hempstead provided state mortality rates based on Nolte and McKee's 1998 study methodology using 2002 mortality data from the multiple cause-of-death file maintained by the National Center for Health Statistics and U.S. Census Bureau population data.

Cause of death considered amenable to health care	Age	International classification of diseases	
		9th revision	10th revision
Intestinal infections	0-14	001-9	A00-9
Tuberculosis	0-74	010-8, 137	A15-9, B90
Other infections(diphtheria, tetanus, poliomyelitis)	0-74	032, 037, 045	A36, A35, A80
Whooping cough	0-14	033	A37
Septicaemia	0-74	038	A40-1
Measles	1-14	055	B05
Malignant neoplasm of colon and rectum	0-74	153-4	C18-21
Malignant neoplasm of skin	0-74	173	C44
Malignant neoplasm of breast	0-74	174	C50
Malignant neoplasm of cervix uteri	0-74	180	C53
Malignant neoplasm of cervix uteri and body of uterus	0-44	179, 182	C54, C55
Malignant neoplasm of testis	0-74	186	C62
Hodgkin's disease	0-74	201	C81
Leukemia	0-44	204-8	C91-5
Diseases of the thyroid	0-74	240-6	E00-7
Diabetes mellitus	0-49	250	E10-4
Epilepsy	0-74	345	G40-1
Chronic rheumatic heart disease	0-74	393-8	I05-9
Hypertensive disease	0-74	401-5	I10-3, I15
Cerebrovascular disease	0-74	430-8	I60-9
All respiratory diseases (excluding pneumonia and influenza)	1-14	460-79, 488-519	J00-9, J20-99
Influenza	0-74	487	J10-1
Pneumonia	0-74	480-6	J12-8
Peptic ulcer	0-74	531-3	K25-7
Appendicitis	0-74	540-3	K35-8
Abdominal hernia	0-74	550-3	K40-6

| Cause of death considered amenable to health care | Age | International classification of diseases | |
		9th revision	10th revision
Cholelithiasis and cholecystitis	0-74	574-5.1	K80-1
Nephritis and nephrosis	0-74	580-9	N00-7, N17-9, N25-7
Benign prostatic hyperplasia	0-74	600	N40
Maternal death	All	630-76	O00-99
Congenital cardiovascular anomalies	0-74	745-7	Q20-8
Perinatal deaths, all causes, excluding stillbirths	All	760-79	P00-96, A33
Misadventures to patients during surgical and medical care	All	E870-6, E878-9	Y60-9, Y83-4
Ischemic heart disease: 50% of mortality rates included	0-74	410-4	I20-5

2. Infant mortality rate

Infant mortality data for 23 countries were retrieved from the Organization for Economic Cooperation and Development (OECD) Health Data 2005 database. This rate is the number of deaths of children under one year of age that occurred in 2002, expressed per 1,000 live births. Some of the international variation in infant and neonatal mortality rates may be due to variations among countries in registering practices of premature infants (whether they are reported as live births or not). Data from New Zealand were not available for 2002 and therefore reported for 2001. Infant mortality data for 2002 by U.S. states are from the National Vital Statistics System—Linked Birth and Infant Death Data as reported in the Agency for Healthcare Research and Quality's *2005 National Healthcare Quality Report* (AHRQ 2005a, 1.63e). The number of deaths is based on a record weight from the linked birth and infant death file which adjusts for the approximately 2–3% of records each year which cannot be linked to their corresponding birth certificates.

3. Healthy life expectancy at age 60

Life expectancy data for 23 countries are from the World Health Organization's *2003 World Health Report* (WHO 2003, Statistical Annex Table 4). The WHO developed Healthy Life Expectancy or Health-Adjusted Life Expectancy (HALE) to go beyond longevity and mortality and provide an estimate of the effect of morbidity on people's lives and population health. HALE shows the average number of years that a person can expect to live in "full health," taking into account years lived in poor health due to disease and/or injury. Formerly known as disability-adjusted life expectancy, HALE is based on life expectancy with an adjustment for time spent in poor health using country-specific population estimates of morbidity and disability. Figures were computed by WHO and are not necessarily the official statistics of member countries.

4. Adults under 65 limited in any activities or work because of health problems*

National and state data on prevalence of working-age adults (ages 18-64) with health limits on activities or work are from the 2004 Behavioral Risk Factor Surveillance System. The indicator is based on survey respondents answering "yes" to one question about health problems or impairments: *Are you limited in any way in any*

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* Unique indicator based on new or updated analyses conducted for the Scorecard.

activities because of physical, mental, or emotional problems? Data were not available for Hawaii in 2004 and therefore not included in the analysis. Data analyses were conducted for the Scorecard by Bisundev Mahato at Columbia University Mailman School of Public Health. For purposes of scoring equity, results were stratified by race/ethnicity, annual household income, and health insurance status.

5. **Children missed 11 or more school days due to illness or injury**

National and state data on school absences due to health were retrieved from the Data Resource Center of Child and Adolescent Health's online database of the 2003 National Survey of Children's Health (Available at http://www.nschdata.org). The indicator is based on survey respondents with a child between the ages of 6 to 17 who answered 11 or more days to one question about school absences: *During the last 12 months, about how many days did [child] miss school because of illness or injury?* For purposes of scoring equity, results were stratified by race/ethnicity, family income as percent of federal poverty level, and health insurance status.

SECTION 2. QUALITY

Quality: The Right Care

1. **Adults received recommended screening and preventive care[∗]**

Developed by the authors for the Scorecard, this new indicator uses data from the 2002 Medical Expenditure Panel Survey (MEPS) to estimate the percent of adults 18 or older receiving recommended screening and preventive care. Specifically, responses to survey questions about preventive care were used to determine who received seven key screening or preventive services within the time intervals appropriate for his/her age and sex as recommended by the U.S. Preventive Services Task Force. The seven services and time intervals used in the analysis include: blood pressure screening within 2 years; cholesterol screening within 5 years; Pap test within 3 years for women age 18 and older; mammography within 2 years for women age 40 and older; fecal occult blood testing (FOBT) within 2 years *or* colonoscopy/sigmoidoscopy ever for adults age 50 and older (either test); and influenza vaccination within past year for adults 65 or older or adults under 65 at risk due to chronic health conditions. Data analyses were conducted by Bisundev Mahato at Columbia University Mailman School of Public Health.

2. **Children received recommended immunizations and preventive care**

   - **Children (ages 19-35 months) received all recommended doses of five key vaccines**

     National and state data on childhood immunization rates are from the 2003 National Immunization Survey as reported in the Agency for Healthcare Research and Quality's *2005 National Healthcare Quality Report* (AHRQ 2005a, Table 1.65a, 1.65b) and *National Healthcare Disparities Report* (AHRQ 2005b, Table 64a, 64b). The five key vaccines included in this measure are: 4 doses of

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[∗] Unique indicator based on new or updated analyses conducted for the Scorecard.

diphtheria-tetanus-acellular pertussis (DTaP), at least 3 doses of polio, at least 1 dose of measles-mumps-rubella (MMR), at least 3 doses of Haemophilus influenzae B (Hib), and at least 3 doses of hepatitis B antigens. For purposes of scoring equity, the percentage was converted to those children who did *not* receive recommended immunizations by race/ethnicity and family income as percent of federal poverty level.

- **Children received both medical and dental preventive care visits**

  National and state data on percent of children with preventive care visits in the past year were retrieved from the Data Resource Center for Child and Adolescent Health's online database of the 2003 National Survey of Children's Health (Available at http://www.nschdata.org). The indicator is based on survey responses to two questions about health care access and utilization during the past 12 months or since the child's birth: 1) respondents answered 1 or more times to *How many times did [child] see a doctor, nurse, or other health professional for preventive medical care such as a physical exam or well-child check-up?* and 2) respondents answered "yes" to *Did [child] see dentist for any routine preventive dental care, including check-ups, screenings, and sealants?* Children must have received both a medical and dental care visit. For purposes of scoring equity, the percentage was converted to those children who did *not* receive both preventive care visits by race/ethnicity, family income as percent of federal poverty level, and health insurance status.

3. **Needed mental health care and received treatment**

   - **Adults with serious mental illness who received mental health treatment**

     Data on mental health treatment among adults with serious mental illness are from the 2003 National Survey on Drug Use and Health as reported in the Agency for Healthcare Research and Quality's *2005 National Healthcare Quality Report* (AHRQ 2005a, Table 1.83) and *National Healthcare Disparities Report* (AHRQ 2005b, Table 87a, 87b). Serious mental illness (SMI) is defined as having at some time during the past year a diagnosable mental, behavioral, or emotional disorder that met the criteria specified in the 4th edition of the Diagnostic and Statistical Manual of Mental Disorders and that resulted in functional impairment substantially interfering with or limiting one or more major life activities. A scale consisting of six questions is used to measure SMI. These questions ask how frequently a respondent experienced symptoms of psychological distress during the one month in the past year when he or she was at his or her worst emotionally. Use of this scale to estimate SMI is supported by methodological research that determined the scale to be a good predictor of SMI, based on clinical assessments done on survey respondents. Mental health treatment/counseling is defined as the receipt of treatment or counseling for any problem with emotions, "nerves," or mental health in the 12 months prior to the interview in any inpatient or outpatient setting. It also includes the use of prescription medication for treatment of a mental or emotional condition. Treatment for only a substance abuse problem is not included. For purposes of scoring equity, the percentage was converted to

those adults who did *not* receive mental treatment by race/ethnicity and family income as percent of federal poverty level.

- **Children needed and received mental health care in past year**

  National and state data on percent of children under 18 who needed and received mental health care were retrieved from the Data Resource Center for Child and Adolescent Health's online database of the 2003 National Survey of Children's Health (Available at http://www.nschdata.org). The indicator based on survey respondents answering "yes" to two questions about their child: 1) *Does [child] have any kind of emotional, developmental, or behavioral problems for which [he/she] needs treatment or counseling?*; and 2) *During the past 12 months/Since [his/her] birth, did [child] receive any mental health care or counseling*? For purposes of scoring equity, the percentage was converted to those children who did *not* receive mental health care by race/ethnicity, family income as percent of federal poverty level, and health insurance status.

4. **Chronic disease under control**

- **Adults with diagnosed diabetes whose HbA1c level <9%**

  National estimates on percent of adult diabetics with blood glucose under fair control are from the National Health and Nutrition Examination Surveys for 1999-2002 as reported in the Agency for Healthcare Research and Quality's *2005 National Healthcare Quality Report* (AHRQ 2005a, Table 1.21). AHRQ reports hemoglobin A1c (HbA1c) levels less then 9 percent as under "fair" control. "Optimal" control is set at less than 7 percent. Managed care plan data are from the Health Plan Employer Data and Information Set as reported in the National Committee for Quality Assurance's *2005 State of Health Care Quality Report* (NCQA 2005a, p.39) and *HEDIS 2005 Means, Percentiles and Ratios Report* (NCQA 2005b). NCQA reports the measure as the percentage of health plan members ages 18 to 75 with diagnosed type 1 or type 2 diabetes who had poorly controlled HbA1c levels. This level was set at greater than 9 percent; thus, lower rates for this measure are better. For purposes of the Scorecard, the percentage was converted to those members with HbA1c levels less than 9 percent, or under "fair" control. In doing so, higher rates for this measure are better.

- **Adults with hypertension whose blood pressure <140/90 mmHg**

  National estimates on percent of high blood pressure control among adults with hypertension are from the National Health and Nutrition Examination Surveys for 1999-2002 as reported in the Agency for Healthcare Research and Quality's *2005 National Healthcare Quality Report* (AHRQ 2005a, Table 1.49). Managed care plan data are from the Health Plan Employer Data and Information Set as reported in the National Committee for Quality Assurance's *2005 State of Health Care Quality Report* (NCQA 2005a, p.37) and *HEDIS 2005 Means, Percentiles and Ratios Report* (NCQA 2005b). Blood pressure under control is defined as having an average systolic blood pressure less than 140 mmHg and average diastolic blood pressure less than 90 mmHg and taking hypertension medicine. For

managed care plans, high blood pressure under control refers only to adults ages 46 to 85 who were enrolled continuously in the health plan during the measurement year.

5. **Hospitalized patients received recommended care for acute myocardial infarction, congestive heart failure, and pneumonia***

The composite indicator is the proportion of cases where a hospital provided the recommended process of care for patients with acute myocardial infarction (heart attack), heart failure, and pneumonia. The hospital quality indicators come from the 2004 Hospital Quality Alliance (HQA) data collected by CMS, and include the original set of ten quality indicators selected for Medicare payment updates. Ashish Jha and Arnold Epstein at the Harvard School of Public Health developed the composites and provided data analyses of hospital, regional, and state variations for the Scorecard. The analysis created an overall composite measure based on the average of ten quality of care measures included for each of the three conditions. For each indicator, the guideline specifies patients who should receive the care. The composite includes five clinical services for acute myocardial infarction (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. Two for congestive heart failure: assessment of left ventricular function and the use of an ACE inhibitor for left ventricular dysfunction. And three for pneumonia: timing of initial antibiotic therapy; pneumococcal vaccination, and assessment of oxygenation. Composite scores were calculated for each condition separately by dividing the number of instances in which the hospital performed a required action by the number of instances in which actions should have been performed for all indicators associated with a particular condition. For example, a composite score for AMI of 80 percent means that for all of the AMI measures, a hospital failed to provide appropriate care 20 percent of the times it had the opportunity to do so. To ensure statistically stable estimates, analyses were limited to those hospitals where, for at least one measure included in the condition, the number of patients was greater than or equal to 30. Both the clinical definitions of the quality measures and the methodology for computing summary scores follow the methodology set forth by the Joint Commission on Accreditation of Healthcare Organizations.

Quality: Coordinated Care

1. **Adults (ages 19-64) with an accessible primary care provider***
Developed by the authors for the Scorecard, this new indicator uses data from the 2002 Medical Expenditure Panel Survey (MEPS) to estimate the percent of adults ages 19 to 64 with an accessible primary care provider. Specifically, the analysis uses data from survey questions that asked whether respondents have a usual source of care, and if yes, whether they see this provider for preventive care (such as general checks ups, examinations, and immunizations), new health problems, ongoing health

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* Unique indicator based on new or updated analyses conducted for the Scorecard.

problems, and referrals to other health professionals when needed. Respondents were also asked how difficult it is for them to get to the provider; those who reported "not too difficult" or "not at all difficult" were determined as having a provider who is accessible, or easy to get to. In summary, the indicator is the 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 analyses were conducted by Bisundev Mahato at Columbia University Mailman School of Public Health. Results were stratified by family income as percent of poverty level for adults ages 19 to 64 and adults ages 65 and over, and health insurance status for adults ages 19 to 64.

2. **Children with a medical home**

National and state data on percent of children with a medical home were retrieved from the Data Resource Center for Child and Adolescent Health's online database of the 2003 National Survey of Children's Health (Available at http://www.nschdata.org). The indicator is provided as a measure in the database and was developed to determine whether a child's medical care met the standards of a "medical home" as defined by the American Academy of Pediatrics (AAP). According to standards endorsed by the AAP, a medical home consists of primary care that is accessible, continuous, comprehensive, family-centered, coordinated, compassionate and culturally effective. Specific questions used to create the indicator included: whether the child has a least one personal doctor or nurse who knows him/her well; whether this personal doctor or nurse usually or always spends enough time with the family, explains things so the parent can understand, and provides interpreter services when needed; whether this personal doctor or nurse usually or always provides telephone advice or urgent care when the child needs it; whether the child has little or no problem gaining access to specialty care, services, and/or equipment when it is needed; whether the personal doctor or nurse followed up by talking with the family about the child's specialist visit and/or use of special services or equipment; and whether the child had a preventive visit in the past year (HRSA 2005). For purposes of scoring equity, the percentage was converted to children *without* a medical home by race/ethnicity, family income as percent of federal poverty level, and health insurance status.

3. **Care coordination at hospital discharge**

- **Hospitalized patients with new prescription reported prior medications were reviewed at discharge**

Data on adequate medication review among hospitalized patients in six countries are from an analysis of the 2005 Commonwealth Fund International Health Policy Survey of Sicker Adults as reported by Cathy Schoen and colleagues (Schoen et al. 2005a, Exhibit 2). The indicator is based on survey respondents answering "yes" to two questions about their experiences with care in the hospital: 1) *When you left the hospital, were you given any new prescription medications?* and 2) *Did someone discuss with you what to do about other medications you were using before you were hospitalized?* Patients who were not taking any medications before hospitalization were excluded.

- **Heart failure patients received written instructions at discharge**

  National and hospital estimates on receipt of written instructions among patients hospitalized for congestive heart failure are from an analysis of the 2004 Hospital Quality Alliance (HQA) data set provided by Ashish Jha and Arnold Epstein at Harvard School of Public Health for the Scorecard. The analysis included only hospitals with a sample size greater than 25. State estimates were retrieved from the Hospital Compare database on January 25, 2006 (Available at http://www.hospitalcompare.hhs.gov). This measure includes heart failure patients with documentation that they or their caregivers were given written discharge instructions or other educational material addressing all of the following: activity level, diet, discharge medications, follow-up appointment, weight monitoring, and what to do if symptoms worsen. Completion of all six instruction categories is required for this composite measure.

- **Follow-up within 30 days after hospitalized for mental health disorder**

  Managed care plan data on follow-up rates after hospitalization for mental illness are from the Health Plan Employer Data and Information Set as reported in the National Committee for Quality Assurance's *2005 State of Health Care Quality Report* (NCQA 2005a, p.40) and *HEDIS 2005 Means, Percentiles and Ratios Report* (NCQA 2005b). This indicator is based on discharges for health plan members ages 6 and older who were hospitalized for treatment of selected mental health disorders (depression, schizophrenia, attention deficit disorder, and personality disorders), who were enrolled continuously in the health plan during the 30-day follow-up period, and who were seen on an ambulatory basis or were in day/night treatment with a mental health provider during the 30-day follow-up period after hospital discharge.

4. **Nursing homes: hospital admissions and readmission rates among residents**[*]

    State data on rate of hospital admissions and readmissions among nursing home residents are from an analysis conducted by Vincent Mor at Brown University, under a grant funded by the National Institute of Aging (#AG20557, State Policies and Hospitalizations from Nursing Homes). Admissions included long-stay residents who were ever admitted to the hospital (within 6 months of baseline assessment). Readmissions included residents who were newly admitted to a nursing home following a hospitalization and were rehospitalized within 30 days. The data represent a merging of Medicare enrollment records and Part A (including hospital and Skilled Nursing Facility) claims data for all Medicare beneficiaries who entered a nursing home (regardless of whether under a Skilled Nursing Facility Medicare Benefit) and had a Minimum Data Set assessment during 2000. For the Medicare hospitalization analysis, the project used the Medicare Provider Analysis and Review (MedPAR) Medicare file.

5. **Home health care: hospital admissions among patients**

    National and agency data on rate of hospitalizations among home health care patients are from the Outcome and Assessment Information Set from April 2003 to March 2004 as reported in the Delmarva Foundation for Medical Care 2005 report on acute

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[*] Unique indicator based on new or updated analyses conducted for the Scorecard.

care hospitalization of home health patients (Pace et al. 2005, Table 2). Acute care hospitalization rate is defined as the percentage of home health episodes in a 12-month period that ended with a hospitalization. The numerator for the measure includes all episodes with a hospital inpatient facility admission; the denominator includes all episodes except those where patients have a nonresponsive level of consciousness upon admission and episodes that end in death. The measure is risk adjusted to control for differences in patient conditions at the start of the episode of care.

Quality: Safe Care

1. **Patients reported medical, medication, or lab errors**

   Data on patient-reported rates of medical, medication, or lab errors in six countries are from analyses of the 2005 Commonwealth Fund International Health Policy Survey of Sicker Adults. International estimates were previously reported by Cathy Schoen and colleagues (Schoen et al. 2005a, Exhibit 3). The indicator is based on survey respondents answering "yes" to any of the following four questions about medical errors and safety issues during the past two years: 1) *Have you ever been given the wrong medication or wrong dose by a doctor, nurse, hospital or pharmacist when filling a prescription at a pharmacy or while hospitalized?* 2) *Have you believed a medical mistake was made in your treatment or care?* 3) *Have you been given incorrect results for a diagnostic or lab test* or 4) *Have you experiences delays in being notified about abnormal test results?* For purposes of scoring equity, results within the U.S. were stratified by race/ethnicity, income, and insurance status.

2. **Unsafe drug use**

   - **Ambulatory care visits to treat adverse drug effects**

     National and regional rates of ambulatory care visits for treating adverse drug effects are from a published analysis of the 2001 National Ambulatory Medical Care and National Hospital Ambulatory Medical Care Surveys conducted by Chunliu Zhan and colleagues at the Agency for Healthcare Research and Quality (Zhan et al. 2005, Tables 1 and 2). The analysis used a nationally representative sample of ambulatory visits to physician offices, hospital outpatient departments, and emergency departments from 1995 to 2001 and examined those visits in which adverse drug effects were identified as the first-listed cause of injury. Adverse drug effects were identified using International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM) codes for External Causes and Injury that were most likely to be attributable to inappropriate use or misuse of medicines. Adverse effects due to bacterial vaccine and other vaccine and biological substances and adverse reactions to heroin and methadone were excluded.

   - **Children prescribed antibiotics for sore throat without receiving "strep" test**

     National data on percent of children ages 3 to 17 prescribed antibiotics for throat infection without receiving a Group A streptococcus, or "strep," test are from a published analysis of the 1997-2003 National Ambulatory Medical Care and

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National Hospital Ambulatory Medical Care Surveys by Jeffrey Linder at Brigham and Women's Hospital (Linder et al. 2005). Managed care plan data are from the Health Plan Employer Data and Information Set as reported in the National Committee for Quality Assurance's *2005 State of Health Care Quality Report* (NCQA 2005a, p.26) and *HEDIS 2005 Means, Percentiles and Ratios Report* (NCQA 2005b). NCQA reports the sore throat testing measure as the percentage of health plan members ages 2 to 18 who were diagnosed with sore throat, were prescribed an antibiotic and who received a "strep" test before antibiotics were administered. For purposes of the Scorecard, the percentage was converted to those children who did *not* receive a "strep" test. In doing so, lower rates for this measure are better.

- **Elderly patients used 1 of 33 inappropriate medications**

   Rates of inappropriate medication use by community-dwelling elderly are from the 2002 Medical Expenditure Panel Survey as reported in the Agency for Healthcare Research and Quality's *2005 National Healthcare Quality Report* (AHRQ 2005a, Table 2.38, Figure 3.6). The MEPS Prescribed Medicines Database combines data from the household interview and a follow-back survey of pharmacy providers to confirm medications dispensed to survey participants. Rates were calculated by AHRQ, applying the Beers criteria that classify 33 drugs that should always be avoided regardless of dosage, frequency, or duration of treatment.

3. **Nursing home residents with pressure sores**

   Data on prevalence of pressure sores among nursing home high-risk and short-stay residents are from the Nursing Home Minimum Data Set as reported in the Agency for Healthcare Research and Quality's *2005 National Healthcare Quality Report* (AHRQ 2005a, Table 1.112, Table 1.118) and *2005 National Healthcare Disparities Report* (AHRQ 2005b, Tables 13a, 13b). The high-risk measure is based on chronic care residents who were with pressure sores (stage 1–4) on target assessment. The short-stay measure is based on post-acute care patients who had no pressure sores on the Medicare Prospective Payment System (PPS) 5-day assessment and has at least Stage 1 pressure sores on the PPS 14-day assessment. Skilled nursing facilities with fewer than 30 residents were excluded.

4. **Hospital-standardized mortality ratios**[*]

   Hospital-standardized mortality ratios (HSMR) provide an indicator of safety and quality of care that are being used by U.S. hospitals and hospitals in the U.K., Canada, and other countries to assess care, identify areas for improvement and track performance over time. The ratio compares actual hospital mortality rates to expected rates given the patient and community risk factors affecting mortality. Developed by Sir Brian Jarman at the Imperial College in the United Kingdom, the HSMR rates used in the Scorecard analysis are based on diagnostic groups that account for 80 percent of all deaths in acute care hospitals. To provide benchmarks and targets for

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[*] Unique indicator based on new or updated analyses conducted for the Scorecard.

improvement in the United States, Jarman has been working with the Institute for Healthcare Improvement to analyze U.S. hospital mortality data using national discharge data available in Medicare data sets (MedPAR) from 1998 through 2004. The analysis of 2000-2002 three-year rates used in this report excludes specialty hospitals and smaller hospitals (fewer than 50 deaths per year) and hospitals with poor quality data. The final set of 1,549 hospitals includes larger, general acute hospitals with quality discharge data available for multiple years.

The HSMR 2000-2002 three-year rates used in the Scorecard are adjusted by standardization and regression analysis. For each hospital, the methodology calculates the number of deaths that would be expected based on average national hospital death rates for Medicare stratified by age, sex, race, admission source, admission type and length of stay, for each of the diagnoses leading to 80 percent of all deaths. Expected rates use overall U.S. Medicare 2000 rates as the standard. The stratified analysis produces a ratio of actual to expected mortality rates, standardized for patient risk and diagnosis mix. Jarman further adjusts the standardized ratio using a regression analysis to account for community and other factors related to hospital mortality. These factors include: poverty levels, physician resources in the community, and share of patients discharged to nursing homes, the proportion of patients dying in hospital, the hospital admission rate, levels of illness in the area and measures of the quality of care in the community around the hospital.

The resulting HSMR, adjusted by standardization and regression analysis, is a ratio of observed to expected deaths, with the national average ratio set equal to 100. An individual hospital ratio equal to 100 suggests that there is no difference between the hospital's mortality rate and expected rates based on average national rates in 2000. A ratio greater than 100 indicates that the hospital's mortality rate is higher expected, pointing to potential safety and quality concerns. Rates significantly below 100 indicate superior performance, providing benchmarks for improvement. Setting the 2000 Medicare average equal to 100, HSMR rates also provide an indicator to track U.S. hospital safety and quality performance over time and assess efforts to reduce the variation across hospitals.

Quality: Patient-Centered, Timely Care

1. **Ability to see doctor on same/next day when sick or needed medical care**

   Data on waiting times to see doctor in six countries are from an analysis of the 2005 Commonwealth Fund International Health Policy Survey of Sicker Adults as reported by Cathy Schoen and colleagues (Schoen et al. 2005a, Exhibit 6). The indicator is based on survey responses to one question about access to health care: *Last time you were sick or needed medical attention, how quickly could you get an appointment to see a doctor? Did you get an appointment: one the same day; the next day; in 2 to 3 days; in 4 to 5 days; in 6 to 7 days; after more than one week; or never able to get an appointment.* Visits to a hospital emergency room were excluded.

2. **Very/somewhat easy to get after-hours care**

   Data on ability to get after-hours care in six countries are from an analysis of the 2005 Commonwealth Fund International Health Policy Survey of Sicker Adults as reported by Cathy Schoen and colleagues (Schoen et al. 2005a, Exhibit 6). The indicator is based on survey respondents answering "somewhat easy" or "very easy" to one question about access to health care: *Last time when you needed medical care in the evening, on a weekend or on a holiday, how easy or difficult was it to get care without going to the hospital emergency room?*

3. **Doctor-patient communication: always listened carefully, explained things clearly, showed respect, and spent enough time***

   National estimates of good doctor-patient communication are from the 2002 Medical Expenditure Panel as reported in the Agency for Healthcare Research and Quality's *2005 National Healthcare Quality Report* (AHRQ 2005a, Table 4.1a). Managed care plan data are from an analysis of 2004 National CAHPS Benchmarking Database provided for the Scorecard by the National Committee for Quality Assurance. The communication indicator is a composite based on respondents who visited a doctor in the past year and reported "always" to four questions about their experience of care: 1) *How often did doctors or other health providers listen carefully to you?* 2) *How often did doctors or other health providers explain things in a way you could understand?* 3) *How often did doctors or other health providers show respect for what you had to say?* and 4) *How often did doctors or other health providers spend enough time with you?*

4. **Adults with chronic conditions given self-management plan**

   Data on percent of chronically ill patients who are given a self-management plan in six countries are from an analysis of the 2005 Commonwealth Fund International Health Policy Survey of Sicker Adults as reported by Cathy Schoen and colleagues (Schoen et al. 2005a, Exhibit 4). The indicator is based on survey respondents who had one of six chronic conditions: hypertension; hearth disease; diabetes; arthritis; asthma, emphysema or other chronic lung problem; or depression. Respondents indicated receipt of self-management plan by answering "yes" to one question about their preventive health care: *Has any health care professional you see for your condition(s) given you a plan to manage your own care at home?*

5. **Patient-centered hospital care***

   Hospital data on patient-centered hospital care are from 254 hospitals who voluntarily submitted test data from the CAHPS Hospital Survey (H-CAHPS) to the National CAHPS Benchmarking Database in 2005. AHRQ and Shaller Consulting provided the data analysis for the Scorecard. This indicator consists of three patient-reported measures on responsiveness and communication with hospital staff: 1) staff managed pain well; 2) staff responded when needed help; and 3) staff explained medicine and side effects.

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* Unique indicator based on new or updated analyses conducted for the Scorecard.

- Data on pain management are based on survey respondents answering "always" to two questions about their hospital stay: *1) How often was your pain well controlled?* and 2) *How often did the hospital staff do everything they could to help you with your pain?*

- Data on staff responsiveness are based on survey respondents answering "always" to two questions about their hospital stay: 1) *After you pressed the call button, how often did you get help as soon as you wanted?* and 2) *How often did you get help in getting to the bathroom or in using a bedpan as soon as you wanted?*

- Data on communication about medicines are based on survey respondents answering "always" to two questions about communication before being given new medicines: 1) *How often did hospital staff tell you what the medicine was for?* and 2) *How often did hospital staff describe possible side effects in a way you could understand?*

SECTION 3. ACCESS

Access: Universal Participation

1. **Adults (ages 19-64) insured all year, not underinsured**

   The definition of the "underinsured" is based on out-of-pocket costs relative to income, following a method published in Health Affairs from an analysis of the 2003 Commonwealth Fund Biennial Health Insurance Survey (Schoen et al. 2005b). The analysis used respondents' estimates of out-of-pocket medical expense, plan deductibles, and income to compare cost exposure to family income. Survey respondents were classified as underinsured if they were insured all year but reported at least one of three indicators: 1) medical expenses amounted to 10 percent or more of income; (2) among low-income adults (below 200 percent of poverty level), medical expenses amounted to 5 percent or more of income; and (3) health plan deductibles equaled or exceeded 5 percent of income. The indicator is based on those respondents who were insured all year, and did not report any of the above underinsured indicators.

2. **Adults with no access problems due to costs**

   Data on percent of adults with access problems due to costs in five countries are from analyses of the 2004 Commonwealth Fund International Health Policy Survey of Adults' Experiences with Primary Care as reported by Cathy Schoen, Phuong Huynh, and colleagues (Schoen 2004, Exhibit 2; Huynh 2006, Figure 9). Survey respondents were classified as having access problems if they answered "yes" to any of the three questions about access to health care during the past 12 months: 1) *Was there a time when you had a medical problem but did not visit the doctor because of the medical care costs of the doctor's visit?* 2) *Was there a time skipped a medical test, treatment, or follow-up that was recommended by a doctor because of cost?* or 3*) Was there a time when you did not fill a prescription for medicine or skipped doses of your medicine because of the cost?* The indicator is based on those respondents who did not report any of the above problems.

Access: Affordable Care

1. **Families spending less than 10 percent of income, or less than 5 percent of income, if low-income, on out-of-pocket medical costs and insurance premiums**

   Data on the percent of nonelderly families with high out-of-pocket medical costs and insurance premiums relative to income are from an analysis of the Medical Expenditure Panel Surveys from 2001-2002 conducted by Mark Merlis (Merlis et al. 2006, Table 8). Out-of-pocket medical costs include deductibles, coinsurance or copayments, and payments for services not covered by insurance. Premiums are also factored in for families with private insurance, including premiums for nongroup coverage and any required employee contribution for group coverage. Two different thresholds were used to define the sets of families with high out-of-pocket costs plus premiums: 1) expenses during a year equaled 10 percent or more of family income; or 2) the family had income below 200 percent of the federal poverty level and expenses equaled 5 percent or more of family income. For purposes of the Scorecard, the percentages were converted to those nonelderly families who spent *less* than the above thresholds on out-of-pocket medical and premiums costs. For purposes of scoring equity, results of families with high out-of-pocket costs compared to income were stratified by family income as percent of federal poverty level and insurance status.

2. **Population under 65 living in states where premiums for employer-sponsored coverage are less than 15 percent of under-65 median household income[*]**

   Developed by the authors for the Scorecard, this new indicator compares total private sector premiums to household incomes to provide a gauge of affordability that can be tracked over time at the national and state level. The indicator is based on premium and household income data by state using two data sources: 1) 2003 Medical Expenditure Panel Survey Insurance Component (IC) data on premium rates for single and family coverage for private employers; and 2) 2004-2005 Current Population Survey estimates of median household incomes for single and family households all under age 65. The indicator is based on the distribution of premiums as a percent of median incomes across states. As of 2004, the median percent of income for employer coverage was approximately 15 percent of income across states; for families, this ranged from 12 to 20 percent of household income in the top and bottom 10 percent of states. Using this as the baseline threshold, the indicator estimates the percent of the under-65 population living in states where premiums as a percent of median incomes is currently below 15 percent of median household incomes for the under-65 population. Setting 15 percent as the baseline threshold will allow the Scorecard to assess premium relative to income trends over time.

3. **Adults (ages 19-64) with no medical bill problems or medical debt**

   National data on percent of adults under 65 with medical bill problems or accrued medical debt are from analyses of the 2005 Commonwealth Fund Biennial Health Insurance Survey as reported by Sara Collins and colleagues (Collins et al. 2006,

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[*] Unique indicator based on new or updated analyses conducted for the Scorecard.

Table 2). Survey respondents were classified as having medical bill problems or medical debt if they answered "yes" to any of the four questions about their ability to pay medical bills or debt during the past 12 months: 1) *Were there times you had problems paying or were unable to pay for medical bills?* 2) *Were you ever contacted by a collection agency about owing money for medical bills?* 3) *Have you had to change your way of life significantly in order to pay medical bills?* and 4) *Do you currently have any medical bills you are paying off over time?* If they had been contacted by a collection agency, respondents were asked if their bill got sent because of a billing mistake or because they were unable to pay the bill. Those who said they were contacted by a collection agency because of a billing mistake were excluded from the total. The indicator is based on those respondents who did not report any of the above problems. For purposes of scoring equity, results of adults *with* medical bills problems or medical debt were stratified by race/ethnicity, income, and insurance status.

SECTION 4. EFFICIENCY

1. **Potential overuse or waste**

    - **Duplicate medical tests: doctor ordered test that had already been done**

      Data on duplicate medical testing in six countries are from analyses of the 2005 Commonwealth Fund International Health Policy Survey of Sicker Adults. International estimates were previously reported by Cathy Schoen and colleagues (Schoen et al. 2005a, Exhibit 5). The indicator is based on survey respondents answering "yes" to one question about the coordination of their care during the past two years: W*hen getting care for a medical problem, was there ever a time when doctors ordered a medical test that you felt was unnecessary because the test had already been done?* For purposes of scoring equity, results within the U.S. were stratified by race/ethnicity, income, and insurance status.

    - **Test results/records not available at time of appointment**
      Data on delays in receiving test results or medical records at the time of appointment in six countries are from analyses of the 2005 Commonwealth Fund International Health Policy Survey of Sicker Adults. International estimates were previously reported by Cathy Schoen and colleagues (Schoen et al. 2005a, Exhibit 5). The indicator is based on survey respondents answering "yes" to one question about the coordination of their care during the past two years: *When getting care for a medical problem, was there ever a time when test results, medical records, or reasons for referrals were not available at the time of your scheduled doctor's appointment?* For purposes of scoring equity, results within the U.S. were stratified by race/ethnicity, income, and insurance status.

    - **Received imaging study for acute low back pain with no risk factors**
      Managed care plan data on percent of health plan members who received a potentially inappropriate imaging study for back pain are from the Health Plan Employer Data and Information Set as reported in the National Committee for

Quality Assurance's *2005 State of Health Care Quality Report* (NCQA 2005a, p.46) and *HEDIS 2005 Means, Percentiles and Ratios Report* (NCQA 2005b). NCQA reports the measure as the percentage of people aged 18-50 who did not receive an imaging study (x-ray, MRI, CT scan) within 28 days following an episode of acute low back pain with no risk factors or signs of serious pathology identified in the diagnostic visit. For purposes of the Scorecard, the percentage was converted to those members who were given imaging studies for uncomplicated acute low back pain. In doing so, lower rates for this measure are better.

2. **Went to the emergency room for a condition that could have been treated by regular doctor**

   Data on emergency room utilization in six countries for a condition that could have been treated in a primary care setting are from analyses of the 2005 Commonwealth Fund International Health Policy Survey of Sicker Adults. International estimates were previously reported by Cathy Schoen and colleagues (Schoen et al. 2005, Exhibit 6). The indicator is based on survey respondents answering "yes" to one question about emergency room use: *The last time you went to the hospital emergency room, was it for a condition that you thought could have been treated by your regular doctor if he/she had been available?* For purposes of scoring equity, results within the U.S. were stratified by race/ethnicity, income, and insurance status.

3. **Hospital admissions for ambulatory care sensitive (ACS) conditions**

   - **National ACS admissions: congestive heart failure, diabetes, and pediatric asthma**

     Data on hospital admission rates for congestive heart failure, diabetes, and pediatric asthma are from the Healthcare Cost and Utilization Project database as reported in the Agency for Healthcare Research and Quality's *2005 National Healthcare Quality Report* (AHRQ 2005a, Table 1.24b, 1.25b, 1.26b, 1.27b, 1.50b, 1.101b). State estimates were calculated by applying the AHRQ Prevention Quality Indicators (PQIs) using the 2002 State Inpatient Database (SID); not all States participate in HCUP. Estimates for the total U.S. are from the 2002 Nationwide Inpatient Sample, which is drawn from the SID and weighted to give national estimates. Hospitalization rates were adjusted for age and gender using the total U.S. population for 2000 as the standard population. The analysis included admissions with principal diagnosis codes for the selected conditions, as described below:

     - Admissions for congestive heart failure (excluding patients with cardiac procedures, obstetric and neonatal conditions, and transfers from other institutions) per 100,000 population

     - Admissions for diabetes combines four diabetes complications-related admissions: uncontrolled diabetes, short–term complications, long–term complications, and lower extremity amputations as reported in AHRQ's *2005 State Snapshots.* Available at: http://www.qualitytools.ahrq.gov/qualityreport/2005.

- o Admissions for uncontrolled diabetes without complication (excluding obstetric and neonatal admissions and transfers from other institutions)
- o Admissions for diabetes with short-term complications (ketoacidosis, hyperosmolarity, coma), excluding obstetric admissions and transfers from other institutions
- o Admissions for diabetes with long-term complications including: retinopathy; microvascular disease (including coronary heart disease, cerebrovascular disease, and peripheral vascular disease, leading to amputation); sensory neuropathy; and impaired renal function, excluding obstetric admissions and transfers from other institutions
- o Lower extremity amputations among patients with diabetes, excluding trauma, obstetric admissions, and transfers from other institutions
- Pediatric asthma admissions (excluding obstetric and neonatal admissions and transfers from other institutions) per 100,000 population

- **Medicare ACS admissions**[*]

    National and regional data on Medicare discharge rates for ambulatory care sensitive conditions are from an analysis of the 2003 Medicare Standard Analytical Files (SAF) 5% Inpatient Data conducted for the Scorecard by Gerard Anderson and Robert Herbert at Johns Hopkins Bloomberg School of Public Health. The analysis included 11 AHRQ Prevention Quality Indicators (PQI) for adults: short-term diabetes complications, long-term diabetes complications, lower extremity amputation among patients with diabetes, asthma, chronic obstructive pulmonary disease, hypertension, congestive heart failure, angina (without a procedure), dehydration, bacterial pneumonia, and urinary tract infection. Eligibility criteria consisted of fee-for-service beneficiaries with continuous Medicare coverage for all months alive during year, and not in an HMO. The region assignments are based on patient zip code of residence.

4. **Medicare hospital 30-day readmission rates***

    National and regional data on hospital readmission rates within 30 days are from an analysis of the 2003 Medicare Standard Analytical Files (SAF) 5% Inpatient Data conducted for the Scorecard by Gerard Anderson and Robert Herbert at Johns Hopkins Bloomberg School of Public Health. The hospital claims data files contain primary and secondary diagnosis, procedure codes, reimbursement amounts, dates of admission and discharge, and specific institutions providing service and geographic identifiers. The 30-day readmission analysis identified fee-for-service beneficiaries with initial admissions due to one of 31 conditions (see list below) who were readmitted within 30 days following discharge for the initial admission. These readmission rates were used to calculate the percent of all admissions within the initial group that were readmitted within 30 days and the reimbursement costs associated with the readmission. The rates displayed in the indicator chart sorts states by 30-day readmission rates with readmission costs as a percent of total costs for the

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[*] Unique indicator based on new or updated analyses conducted for the Scorecard.

initial selected admissions. The average share of reimbursement attributed to readmissions is shown for state quartiles ranked by highest to lowest rate of readmissions. The savings estimates for reducing readmission rates used the median and top ten percentile regional rates and average cost of the readmission in each region to compute the national total savings at the lower readmission rates, based on the five percent sample of beneficiaries.

<u>31 Select Conditions for Hospital 30-Day Readmission Analysis</u>
1. Abnormal Heartbeat
2. Chronic Obstructive Pulmonary Disease COPD
3. Congestive Heart Failure CHF
4. Diabetes with Amputation
5. Diabetes - Medical Management
6. Kidney Failure
7. Kidney and Urinary Tract Infections
8. Pneumonia - Aspiration
9. Pneumonia - Infectious
10. Respiratory Failure with Mechanical Ventilation
11. Respiratory Failure without Mechanical Ventilation
12. Stomach and Intestinal Bleeding
13. Stroke - Hemorrhagic
14. Stroke - Non-Hemorrhagic
15. Abdominal Aortic Aneurysm Repair
16. Gallbladder Removal - Laparoscopic
17. Gallbladder Removal - Open
18. Hip Fracture - Surgical Repair
19. Hysterectomy - Vaginal
20. Removal of Blockage of Neck Vessels
21. DRG096 Bronchitis & Asthma, Complicated
22. DRG097 Bronchitis & Asthma, Uncomplicated
23. DRG141 Hypotension & Fainting, Complicated
24. DRG143 Chest Pain
25. DRG202 Cirrhosis & Alcoholic Hepatitis
26. DRG204 Noncancerous Pancreatic Disorders
27. DRG205 Liver Disease except Cancer, Cirrhosis, Alcoholic Hepatitis, Complicated
28. DRG243 Medical Back Problems
29. DRG415 Surgery for Infectious or Parasitic Disease
30. DRG418 Infection after Surgery or Trauma
31. DRG478 Vascular Operations except Heart, Complicated

5. Medicare annual costs of care and mortality for acute myocardial infarction, hip fracture, and colorectal cancer[*]

This new efficiency indicator is a composite that builds on earlier seminal studies by Elliott Fisher at Dartmouth Medical School following patients with heart attacks, hip fractures, and colectomies over five years.[1] Fisher and Douglas Staiger conducted an analysis of data from a 20 percent national sample of Medicare beneficiaries to identify patients hospitalized for heart attacks, hip fracture, and colon cancer between

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[*] Unique indicator based on new or updated analyses conducted for the Scorecard.
[1] E. Fisher, et al. "The Implications of Regional Variations in Medicare Spending Part I," Annals of Internal Medicine 138:4: 273-287, 2003 and E. Fisher et al. "Implications of Variations in Medicare Spending, Part II," Annals of Internal Medicine 138:4:288-298, 2003.

2000 and 2002. Data were then used to rank all hospital referral regions in terms of the quality of care (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 high performance benchmark. Potential savings in both lives and spending from improved performance are based on data for 2003.

6. **Medicare costs of care for chronic disease: diabetes, congestive heart failure, and chronic obstructive pulmonary disease[*]**

   Regional data on annual Medicare reimbursement costs for diabetes, congestive heart failure (CHF), and chronic obstructive pulmonary disease (COPD) are from analysis of the 2001 Medicare Standard Analytical Files (SAF) 5% Inpatient Data conducted for the Scorecard by Gerard Anderson and Robert Herbert at Johns Hopkins Bloomberg School of Public Health. The analysis initially identified beneficiaries with three conditions (diabetes, CHF, and COPD) based on IDC9 diagnostic codes and then calculated total wage-adjusted annual inpatient and outpatient reimbursement (Part A and Part B) costs for 2001. Total costs are based on Medicare reimbursed amounts from the inpatient, outpatient, home health, SNF and physician/supplier files – costs include all costs of care, not just the chronic disease costs – for patients with any of the three conditions. Wage index adjustment is based on MSA of patient residence using wage index values for FY 2001. Percentiles are based on only those groups with 50 or more cases. The analysis also examined quality indicators based on claims. The indicators included: physician visit within 30 days of hospital discharge for those hospitalized during the year; physician visit at least one each 6 months; annual flu shot; annual cholesterol test; and for diabetics, annual HbA1c, eye, and nephrology exams.

7. **National expenditure on health administration and insurance as percentage of total health expenditure**

   Data on health administration and insurance expenditures as percentage of total health expenditures were retrieved for 11 countries from the OECD Health Data 2005 database. Health administration and insurance are activities of private insurers and central and local authorities and social security, including planning, management, regulation, and collection of funds and handling of claims of the delivery system. This indicator comprises the administration and operation of all private health and accident insurance including private for-profit insurance. The estimate for the United States includes claims administration, underwriting, marketing, profits and other administrative costs. Net costs of private health insurance in the U.S. are based on premiums minus claims expenses.

8. **Physicians using electronic medical records**

   Data on the percent of physicians with electronic medical records in 19 countries are from the 2001 EuroBarometer survey of general practitioners conducted in 15

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[*] Unique indicator based on new or updated analyses conducted for the Scorecard.

European Union countries and the 2000 Commonwealth Fund International Health Policy Survey of Physicians in Australia, Canada, New Zealand, and United States, as reported by Harris Interactive (Harris Interactive 2002, Table 1).

SECTION 5. EQUITY

1. **Infant mortality rate, by race/ethnicity and mother's education (income proxy)**

   Infant mortality data are from the National Vital Statistics System – Linked Birth and Infant Death Data for 2002 as reported in the Agency for Healthcare Research and Quality's *2005 National Healthcare Quality Report* (AHRQ 2005a, Table 1.63a). Education data are for mother's age 20 or older only. Trend data are from the same data source as reported in the National Center for Health Statistics' *Health, United States, 2005* report (NCHS 2005, Table 27).

2. **Five-year cancer survival rates, by race/ethnicity and census tract poverty rate (income proxy)**

   National five-year cancer survival rates for men and women are from an analysis of Surveillance, Epidemiology, and End Results (SEER) Program data conducted by Limin Clegg and colleagues at the National Cancer Institute (Clegg 2002, Table 3). The analysis included patients from 9 geographic areas (Connecticut, Hawaii, Iowa, New Mexico, and Utah and the metropolitan areas of Atlanta, GA; Detroit, MI; Seattle-Puget Sound, WA; and San Francisco-Oakland, CA) who were diagnosed with cancer during 1988 to 1997. Survival rates for men and women by area poverty are from an analysis of SEER data conducted by Gopal Singh and colleagues at the National Cancer Institute (Singh 2003, Table 6.1). The analysis included patients in 11 geographic areas (SEER 9, as described above, plus Los Angeles, CA and San Jose-Monterey, CA) who were diagnosed with cancer during 1988 to 1994. The survival rates are cancer-specific and estimate the likelihood of surviving five years from the time of diagnosis if cancer is the only cause of death.

3. **Coronary heart disease and diabetes-related deaths, by race/ethnicity and education level (income proxy)**

   Coronary heart disease and diabetes-related mortality data are from the National Vital Statistics System – Mortality Data from 2003. Data were retrieved from the April 2006 Edition of the Healthy People 2010 Database, DATA2010 (Available at http://wonder.cdc.gov/data2010). Estimates by education level are reported for persons aged 25 to 64 years in 43 reporting states.

4. **Older adults did not receive recommended screening and preventive care, by race/ethnicity, family income, and insurance status***

   Data on the prevalence of adults ages 50 years and older who did not receive recommended screening and preventive care are from an analysis of the 2002 Medical Expenditure Panel Survey. This indicator is based on responses to questions

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* Unique indicator based on new or updated analyses conducted for the Scorecard.

indicating whether respondents ages 18 or older received seven key preventive services within a specific time frame given their age and sex as described in The Right Care, Note 1; for purposes of scoring equity, the percentage was converted to those adults who did *not* receive recommended care. Data analyses were conducted by Bisundev Mahato at Columbia University Mailman School of Public Health. Results were stratified by race/ethnicity, family income as percent of poverty level and health insurance status for adults ages 50 to 64 years and by race/ethnicity and family income as percent of poverty level for adults ages 65 and older.

5. **Untreated dental caries among persons ages 6-74, by race/ethnicity and income**

    Data on the prevalence of untreated dental caries among persons ages 6 to 74 are from the National Health and Nutrition Examination Surveys from 1999-2002 as reported in the National Center for Health Statistics' *Health, United States, 2005* report (NCHS 2005, Table 85). Dental caries is evidence of tooth dental decay on any surface of a tooth and was determined by an oral examination conducted by a trained dentist as part of the National Health and Nutrition Examination Survey. Persons without teeth were excluded.

6. **Chronic disease not under control, by race/ethnicity, family income, and insurance status**

    -   National data on prevalence of diabetics with uncontrolled blood glucose are from the National Health and Nutrition Examination Surveys (NHANES) for 1999-2002 as reported in the Agency for Healthcare Research and Quality's *2005 National Healthcare Quality Report* (AHRQ 2005a, Table 1.21). AHRQ reports hemoglobin A1c (HbA1c) level less then 9 percent as under "fair" control. For purposes of scoring equity, the percentage was converted to those members with HbA1c levels greater than 9 percent, or *not* under control. Data by insurance are from the NHANES for 1988-1994 as published by Jinan Saadine and colleagues at the Centers for Disease Control and Prevention (Saadine 2002).

    -   National data on prevalence of adults with hypertension whose blood pressure is not under control are from the same data source as reported in the Agency for Healthcare Research and Quality's *2005 National Healthcare Quality Report* (AHRQ 2005a, Table 1.49). AHRQ reports blood pressure under control as having an average systolic blood pressure less than 140 mmHg and average diastolic blood pressure less than 90 mmHg. For purposes of scoring equity, the percentage was converted to those adults with blood pressure greater than 140/90 mmHg, or *not* under control.

7. **Diabetics did not receive all 3 recommended services (HbA1c, retinal exam, and foot exam), by race/ethnicity, income, and insurance, and patient residence**

    Data on percentage of adults who received three recommended diabetic services are from the 2002 Medical Expenditure Panel Survey as reported in the Agency for Healthcare Research and Quality's *2005 National Healthcare Quality Report* (AHRQ 2005a, Table 1.15). The indicator is a composite based on respondents with diabetes who answered three questions on diabetes management: 1) *During the survey year,*

how many times did a doctor, nurse, or other health professional check for glycosylated hemoglobin or 'hemoglobin A-one-C'? 2) *Which of the following year(s) did you have an eye exam in which your pupils were dilated?* and 3) *How many times did a health professional check your feet for any sores or irritations?* Diabetics who indicated that they had at least one hemoglobin A1c measurement, a retinal eye exam, and a foot examination during the survey year were included in the composite. For purposes of scoring equity, the percentage was converted to those adult diabetics who did *not* receive all three recommended services.

8. **AHRQ patient safety indicators, by race/ethnicity, income area, payment source, and patient residence**

   Data on select AHRQ patient safety indicators are from the Healthcare Cost and Utilization Project (HCUP), Nationwide Inpatient Sample as reported in the Agency for Healthcare Research and Quality's *2005 National Healthcare Quality Report* (AHRQ 2005a, Table 2.3, 2.9, 2.11a, 2.16, 2.17). Rates by race/ethnicity are from the HCUP State Inpatient Database as reported in AHRQ's *2005 National Healthcare Disparities Report* (AHRQ 2005b, Table 160, 147, 134, 143, 135). Patient Safety Indicators (PSIs) identify potentially preventable complications of care and adverse events in the hospital. In empirical testing against medical records, PSIs were more likely to identify process of care failures than a random sample of control cases. For more information, see: http://www.qualityindicators.ahrq.gov. The numerators are based on secondary diagnoses only, to exclude complications that were present on admission. The denominators are limited to hospital inpatients most likely to be at risk for the complication, as described below. Rates were adjusted by gender, comorbidities, and diagnosis related group clusters.

   - Failure to rescue: Failure to rescue or deaths per 1,000 discharges having developed specified complications of care during hospitalization (i.e., pneumonia, deep vein thrombosis/pulmonary embolism, sepsis, acute renal failure, shock/cardiac arrest, or gastrointestinal hemorrhage/acute ulcer), excluding patients transferred in or out, patients admitted from long-term-care facilities, neonates, and patients over 74 years old.

   - Decubitus ulcers: Decubitus ulcer per 10,000 discharges of length five or more days, excluding paralysis patients, patients admitted from long-term care facilities, neonates, obstetrical admissions, and patients with diseases of the skin, subcutaneous tissue, and breast.

   - Selected infections due to medical care: Infections due to medical care (primarily related to intravenous lines and catheters) per 10,000 discharges, excluding immunocompromised patients, cancer patients, and neonates. Also excludes admissions specifically for such infections, such as cases from earlier admissions, from other hospitals, or from other settings.

   - Postoperative pulmonary embolus or deep vein thrombosis: Postoperative pulmonary embolism or deep vein thrombosis per 10,000 surgical discharges, excluding patients admitted for deep vein thrombosis, obstetrics, and secondary procedure of plication of vena cava before or after surgery. Also excludes

admissions specifically for such thromboembuli, such as cases from earlier admissions, from other hospitals, or from other settings.

- Postoperative sepsis: Postoperative sepsis per 10,000 elective-surgery discharges of longer than three days, excluding patients admitted for infection, patients with cancer or immunocompromised states, and obstetric conditions.

9. **Six or more days to see doctor when sick or needed medical attention, by race/ethnicity, income, and insurance status**

    Data on waiting times to see doctor when sick or needed medical care are from an analysis of the 2005 Commonwealth Fund International Health Policy Survey of Sicker Adults. The indicator is based on survey responses to one question about access to health care as described in Patient-centered, Timely Care, Note 1.

10. **Doctor-patient communication: sometimes/never listened, explained, showed respect, spent enough time, by race/ethnicity, family income, insurance, and patient residence**

    Data on poor doctor-patient communication are from the 2002 Medical Expenditure Panel as reported in the Agency for Healthcare Research and Quality's *2005 National Healthcare Quality Report* (AHRQ 2005a, Table 4.1a). The communication indicator is a composite based on respondents who visited a doctor in the past year and reported "sometimes" or "never" to four questions as described Patient-centered, Timely Care, Note 3.

11. **Adults without an accessible primary care provider, by race/ethnicity and insurance status***

    Data on the percentage of adults without an accessible primary care provider are from an analysis of the 2002 Medical Expenditure Panel Survey. This indicator was developed for the Scorecard as described in Coordinated Care, Note 1; for purposes of scoring equity, the percentage was converted to those adults who did *not* have an accessible primary care provider. Data analyses were conducted by Bisundev Mahato at Columbia University Mailman School of Public Health. Results were stratified by race/ethnicity for adults ages 19 to 64 and adults ages 65 and older, and by health insurance status for adults ages 19 to 64.

12. **Hospital admissions for select ambulatory care sensitive conditions, by race/ethnicity and patient income area**

    Data on hospital admission for ambulatory sensitive conditions by race/ethnicity are from the Healthcare Cost and Utilization Project database as reported in the Agency for Healthcare Research and Quality's *2005 National Healthcare Disparities Report* (AHRQ 2005b, Table 19, 20, 21, 22, 104). Estimates by race/ethnicity were calculated by applying the AHRQ Prevention Quality Indicators using the disparities analysis files from the 2002 State Inpatient Database (SID). This file is designed to provide national estimates on disparities using weighted records from a sample of

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* Unique indicator based on new or updated analyses conducted for the Scorecard.

hospitals from 22 states. For congestive heart failure, AHRQ reported admissions by race/ethnicity from the National Hospital Discharge Survey (AHRQ 2005a, Table 44). Data by patient income area is based on the median income of the patient's zip code. These estimates were calculated from the 2002 Nationwide Inpatient Sample as retrieved from HCUPNet (Available at: http://www.ahrq.gov/HCUPnet) and reported in the Agency for Healthcare Research and Quality's *2005 National Healthcare Quality Report* (AHRQ 2005a, Table 1.24a, 1.25a, 1.26a, 1.27a, 1.101a).

13. Adults under 65 with time uninsured, by race/ethnicity and family income

Data on prevalence adults under 65 who had no health insurance coverage some time during the year are from the 2002 Medical Expenditure Panel Survey as reported in the Agency for Healthcare Research and Quality's *2005 National Healthcare Quality Report* (AHRQ 2005b, Table 181a, 181b).

14. Adults (ages 19-64) with access problems because of costs, by race/ethnicity, income, and insurance status

Data on percentage of adults ages 19 to 64 who had access problems because of costs in the past year are from an analysis of the 2005 Commonwealth Fund Biennial Health Insurance Survey. The indicator is based on survey respondents answering "yes" to any of the four questions about access to health care during the past 12 months: 1) *Was there any time when you did not fill prescription for medicine because of the cost?*; 2) *Was there any time when you skipped a medical test, treatment, or follow-up recommended by a doctor because of the cost?*; 3) *Was there any time when you had a medical problem but did not go to a doctor or clinic because of the cost?*; or 4) Was *there any time when you did not see a specialist when you or your doctor thought you needed one because of the cost?* Results were stratified by race/ethnicity, annual income as percent of federal poverty level, and insurance status.

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