Demographic and Clinical Variations in Health Status

MEPS

# Methodology Report


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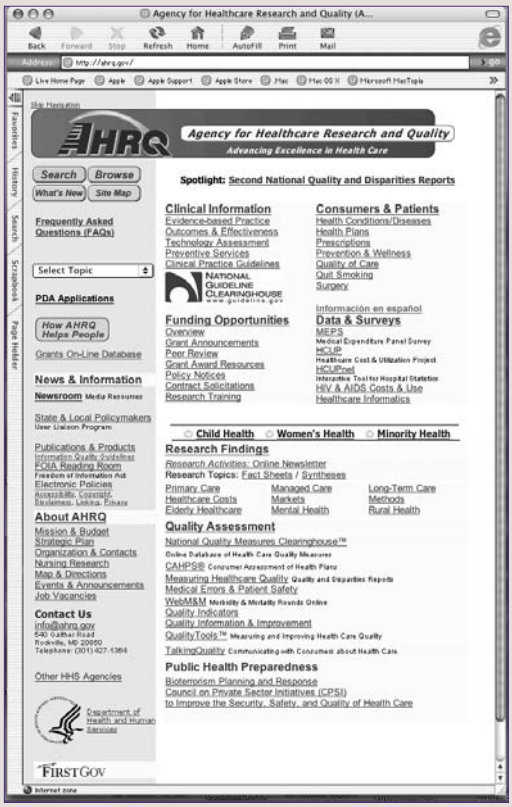


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## Abstract

Researchers have developed a number of measures of health status that can be used to assess general levels of population health, to compare different sociodemographic groups, and to monitor the outcomes of clinical interventions. Using nationally representative data from the Medical Expenditure Panel Survey (MEPS), this report from the Agency for Healthcare Research and Quality summarizes population differences using two generic measures: the SF-12® and the EuroQol. In general, groups defined by age and education showed the greatest variation in health status; differences by sex, race/ethnicity, and geographic location were relatively small. Persons diagnosed with diabetes, asthma, or hypertension had worse physical health status than those who did not have these conditions.



### Suggested citation

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## Demographic and Clinical Variations in Health Status

MEPS

# Methodology Report 15


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# The Medical Expenditure Panel Survey (MEPS)

## Background

The Medical Expenditure Panel Survey (MEPS) is conducted to provide nationally representative estimates of health care use, expenditures, sources of payment, and insurance coverage for the U.S. civilian noninstitutionalized population. MEPS is cosponsored by the Agency for Healthcare Research and Quality (AHRQ), formerly the Agency for Health Care Policy and Research, and the National Center for Health Statistics (NCHS).

MEPS comprises three component surveys: the Household Component (HC), the Medical Provider Component (MPC), and the Insurance Component (IC). The HC is the core survey, and it forms the basis for the MPC sample and part of the IC sample. Together these surveys yield comprehensive data that provide national estimates of the level and distribution of health care use and expenditures, support health services research, and can be used to assess health care policy implications.

MEPS is the third in a series of national probability surveys conducted by AHRQ on the financing and use of medical care in the United States. The National Medical Care Expenditure Survey (NMCES) was conducted in 1977, the National Medical Expenditure Survey (NMES) in 1987. Beginning in 1996, MEPS continues this series with design enhancements and efficiencies that provide a more current data resource to capture the changing dynamics of the health care delivery and insurance system.

The design efficiencies incorporated into MEPS are in accordance with the Department of Health and Human Services (DHHS) Survey Integration Plan of June 1995, which focused on consolidating DHHS surveys, achieving cost efficiencies, reducing respondent burden, and enhancing analytical capacities. To accommodate these goals, new MEPS design features include linkage with the National Health Interview Survey (NHIS), from which the sample for the MEPS HC is drawn, and enhanced longitudinal data collection for core survey components. The MEPS HC augments NHIS by selecting a sample of NHIS respondents, collecting additional data on their health care expenditures, and linking these data with additional information collected from the respondents' medical providers, employers, and insurance providers.

## Household Component

The MEPS HC, a nationally representative survey of the U.S. civilian noninstitutionalized population, collects medical expenditure data at both the person and household levels. The HC collects detailed data on demographic characteristics, health conditions, health status, use of medical care services, charges and payments, access to care, satisfaction with care, health insurance coverage, income, and employment.

The HC uses an overlapping panel design in which data are collected through a preliminary contact followed by a series of five rounds of interviews over a $2^1/_2$-year period. Using computer-assisted personal interviewing (CAPI) technology, data on medical expenditures and use for 2 calendar years are collected from each household. This series of data collection rounds is launched each subsequent year on a new sample of households to provide overlapping panels of survey data and, when combined with other ongoing panels, will provide continuous and current estimates of health care expenditures.

The sampling frame for the MEPS HC is drawn from respondents to NHIS, conducted by NCHS. NHIS provides a nationally representative sample of the U.S. civilian noninstitutionalized population, with oversampling of Hispanics and blacks.

## Medical Provider Component

The MEPS MPC supplements and validates information on medical care events reported in the MEPS HC by contacting medical providers and pharmacies identified by household respondents. The MPC sample includes all hospitals, hospital physicians, home health agencies, and pharmacies reported in the HC. Also included in the MPC are all office-based physicians:

- Providing care for HC respondents receiving Medicaid.
- Associated with a 75-percent sample of households receiving care through an HMO (health maintenance organization) or managed care plan.
- Associated with a 25-percent sample of the remaining households.

Data are collected on medical and financial characteristics of medical and pharmacy events reported by HC respondents, including:

- Diagnoses coded according to ICD-9 (9th Revision, International Classification of Diseases) and DSM-IV (Fourth Edition, Diagnostic and Statistical Manual of Mental Disorders).
- Physician procedure codes classified by CPT-4 (Current Procedural Terminology, Version 4).
- Inpatient stay codes classified by DRG (diagnosis-related group).
- Prescriptions coded by– national drug code (NDC), medication names, strength, and quantity dispensed.
- Charges, payments, and the reasons for any difference between charges and payments.

The MPC is conducted through telephone interviews and mailed survey materials.

## Insurance Component

The MEPS IC collects data on health insurance plans obtained through private and public-sector employers. Data obtained in the IC include the number and types of private insurance plans offered, benefits associated with these plans, premiums, contributions by employers and employees, and employer characteristics.

Establishments participating in the MEPS IC are selected through three sampling frames:

- A list of employers or other insurance providers identified by MEPS HC respondents who report having private health insurance at the Round 1 interview.
- A Bureau of the Census list frame of private-sector business establishments.
- The Census of Governments from the Bureau of the Census.

To provide an integrated picture of health insurance, data collected from the first sampling frame (employers and other insurance providers) are linked back to data provided by the MEPS HC respondents. Data from the other three sampling frames are collected to provide annual national and State estimates of the supply of private health insurance available to American workers and to evaluate policy issues pertaining to health insurance. Since 2000, the Bureau of Economic Analysis has used national estimates of employer contributions to group health insurance from the MEPS IC in the computation of Gross Domestic Product (GDP).

The MEPS IC is an annual panel survey. Data are collected from the selected organizations through a prescreening telephone interview, a mailed questionnaire, and a telephone followup for nonrespondents.

## Survey Management

MEPS data are collected under the authority of the Public Health Service Act. They are edited and published in accordance with the confidentiality provisions of this act and the Privacy Act. NCHS provides consultation and technical assistance.

As soon as data collection and editing are completed, the MEPS survey data are released to the public in staged releases of summary reports and microdata files. Summary reports are released as printed documents and electronic files. Microdata files are released on CD-ROM and/or as electronic files.

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# Demographic and Clinical Variations in Health Status

by John A. Fleishman, Ph.D., Agency for Healthcare Research and Quality

## Introduction

The ultimate goal of medical care is to foster optimal levels of health and well-being. Researchers have developed a number of measures of health status that can be used to assess general levels of population health, to compare different sociodemographic groups, and to monitor the outcomes of clinical interventions. These measures go beyond traditional indexes of mortality or morbidity by focusing on the extent to which people are impaired in physical, social, and mental functioning.

The Short-Form 12, or SF-12® (Ware, Kosinski, and Keller, 1996), and the EuroQol 5-D, or EQ-5D (Brooks, 1996; Dolan, 1997) are two of the more widely used measures of health status. Although a large number of studies report sex, racial/ethnic, and age comparisons using these two measures, many are based on nonrepresentative samples of patients seeking care for specific conditions; relatively few studies report comparisons based on data from a nationally representative U.S. sample. This report presents descriptive data on group differences in the SF-12® and the EQ-5D, based on data collected in 2000 from the nationally representative sample of the Medical Expenditure Panel Survey (MEPS).

## SF-12® and EQ-5D

The SF-12® contains 12 questions in which people are asked about the following topics:

1. Limitations in performing moderate physical activities, such as moving a table.
2. Limitations in climbing several flights of stairs.
3. Extent to which pain interfered with normal work.
4. Whether they accomplished less than they would like at work or other regular activity as a result of their physical health.
5. Whether they were limited in kind of work or other activities as a result of their physical health.
6. How often they felt calm and peaceful.
7. How often they felt downhearted and blue.
8. Whether they accomplished less than they would like at work or other regular activity as a result of emotional problems.
9. Whether they didn't do work or other activities as carefully as usual as a result of emotional problems.
10. How often they felt that they had a lot of energy.
11. How often physical health or emotional problems interfered with social activities.
12. Overall rating of health (from excellent to poor).

Responses to these questions are combined to form two summary scores. The underlying concept is that overall health is composed of a physical and a mental component. The Physical Component Summary (PCS) weights responses to the first five items more heavily. The Mental Component Summary (MCS) weights responses to items 6-9 more heavily. The PCS and the MCS each have a mean of 50 and a standard deviation of 10.

The EQ-5D contains five questions about the extent of problems in mobility, self-care, daily activities, pain, and anxiety/depression. Each question has three possible responses: no problem, mild problem, or severe problem. Each possible combination of responses to the five questions constitutes a "health state." In prior research, Dolan (1997) developed a method for assigning a number to each health state that represents an average preference for one state versus another. The most highly valued state (perfect health) has a score of 1.0; death has a score of 0.0; and other health states have a score in between, with higher numbers indicating that a state is valued more highly. (Some health states actually receive a negative number, indicating that death is preferable to being in that state.) In addition, the EQ-5D includes a sixth question, which asks respondents to rate their current overall health on a scale that ranges from 0 through 100, where 0 means "worst possible health" and 100 means "best possible health." Thus, the EQ-5D produces two scores: the preference-based index and the rating scale.

The SF-12® and the EQ-5D were administered to adult (age 18 and over) respondents in MEPS in the second half of 2000. A self-administered questionnaire was distributed to all adult respondents (in Spanish when requested). This questionnaire contained the SF-12® and the EQ-5D. Overall, a total of 15,438 adult respondents completed the questionnaire. Because some respondents did not provide answers to all questions in the SF-12® and the EQ-5D, analyses were based on 11,295 respondents with no missing data. These cases comprised 73 percent of those who were eligible and provided questionnaire data. Readers are cautioned that when analytic weights are applied to the subgroup used in the analysis, the estimated population total is less than the corresponding total for the eligible population. The estimated population total for the subgroup used in the analysis is 152,676,200. By contrast, the estimated population total for the 15,438 respondents with any questionnaire data is 202,737,847.

Tables 1 and 2 present scores for the PCS, the MCS, the EQ-5D preference-based index, and the EQ-5D rating scale. Standard errors are shown in Appendix Tables A and B.

## Findings

For 11,295 adult respondents, the mean PCS score was 50.04 (standard error = 0.1180) and the mean MCS score was 51.50 (standard error = 0.1163). Both scores are close to the norm of 50. The mean EQ-5D preference score was 0.83 (standard error = 0.0029) on a scale with a maximum value of 1.0, and the mean EQ-5D rating scale score was 79.84 (standard error = 0.2196) on a scale from 0 to 100.

### Sex

For each of the four outcome measures (PCS, MCS, EQ-5D preference, ED-5D rating), men averaged slightly higher scores than women (Table 1). Although small in magnitude, the differences were statistically significant for each measure. Prior research using these measures has also found that men typically report being in better health than women.

### Age

One would expect that health status would decline as one grows older, and the findings generally support this expectation (Table 1). The PCS, EQ-5D preference, and EQ-5D rating scores all dropped consistently from each age group to the next older group. The magnitude of the difference from one group to the next was smaller at younger ages and larger at older ages. For example, the difference between the two youngest groups on the PCS was 0.90 points (53.76 – 52.86), while the difference between the two oldest groups was 6.70 points (43.97 – 37.27). Thus, physical health status declines as one ages, and the decline accelerates at older ages.

The MCS is an exception to this pattern. Age-related differences in mental health status showed no clear trend across age. People aged 55-74 had significantly higher mental health scores than those aged 18-24. It is not the case that older people generally are in poorer mental health compared to younger individuals.

### Race/Ethnicity

Racial/ethnic differences in health status were generally small, and the pattern was inconsistent across the different measures (Table 1). For each measure, differences between racial/ethnic groups did not reach statistical significance.

### Education

In contrast to the relatively small racial/ethnic differences, educational attainment was strongly and consistently related to health status (Table 1). For each measure, people with a high-school degree reported better health status than those who did not complete high school. People with at least some college experience reported the highest average levels of health status for each measure.

When interpreting these differences, keep in mind that people who did not complete high school may also be older than those with more advanced education. This possible age difference may underlie some of the educational differences.

## Geographic Characteristics

People who lived in metropolitan statistical areas (MSAs) reported significantly higher mean levels of health status than residents of nonmetropolitan areas on the PCS, EQ-5D preference score, and EQ-5D rating scale (Table 1). However, the magnitudes of the differences were small. Differences in mental health were not statistically significant. Because nonmetropolitan residents tend, on average, to be older than metropolitan area residents, these differences may arise from underlying differences in age.

Regional differences were statistically significant for the PCS and EQ-5D rating scale (Table 1). Residents of the South had the lowest PCS scores, and residents of the West region had the lowest scores on the EQ-5D rating scale. The magnitude of these differences was small. Regional differences were not significant for the MCS or the EQ-5D preference score.

## Insurance Coverage

MEPS obtained detailed and exhaustive information concerning the health insurance coverage of each person in the sampled households. The group with "any insurance" coverage includes those with either public or private health insurance during July 2000. Those with no insurance during this period reported significantly lower MCS scores than those with some insurance (Table 1). (Because young adults are among the most likely to have no health coverage and because most of the elderly have health insurance under Medicare, age-related factors may also underlie the MCS difference.) The two insurance groups did not differ significantly on either of the EQ-5D measures or on the PCS.

## Clinical Status

The four measures of health status examined in this report provide overall summaries of a person's health. The presence or absence of a specific chronic condition is one factor that should exert a strong influence on overall health status. During the MEPS interview, respondents reported whether a doctor or other health professional had ever diagnosed them with hypertension (high blood pressure), diabetes (high blood sugar), or asthma.

Table 2 shows means for the four health status measures, depending on whether or not the person had each of these chronic conditions. On all four measures, people with high blood pressure had significantly lower scores than those who had not received this diagnosis. Similarly, people with diabetes had lower scores on all four measures than people without diabetes, and people with asthma had significantly lower scores than those without asthma.

When interpreting these results, one should remember that those without the condition in question (e.g., diabetes) may have other conditions, so those with diabetes are being compared to those without, who may have other serious medical conditions. In addition, MEPS did not ascertain the severity of these conditions, nor the presence of any complications. Finally, because this information was self-reported, it is possible that some respondents may have inadvertently neglected to mention that they had the condition.

Nevertheless, two important patterns are apparent in the results in Table 2. First, the impact of clinical status was much greater than characteristics such as sex, race/ethnicity, region, MSA status, and insurance coverage. Second, the impact of clinical status was smaller for the MCS than for the other three measures.

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## Table 1. Means for four health status measures by selected population characteristics

| Population characteristic | Health status measure | | | |
|---|---|---|---|---|
| | PCS | MCS | EQ-5D preference | EQ-5D rating |
| **Total sample** | 50.04 | 51.50 | 0.83 | 79.84 |
| **Sex** | | | | |
| Women | 49.30 | 50.71 | 0.82 | 79.05 |
| Men | 50.81 | 52.34 | 0.85 | 80.68 |
| **Age in years** | | | | |
| 18-24 | 53.76 | 51.41 | 0.90 | 85.05 |
| 25-34 | 52.86 | 51.30 | 0.88 | 82.19 |
| 35-44 | 51.71 | 50.92 | 0.85 | 81.04 |
| 45-54 | 49.42 | 51.22 | 0.81 | 78.59 |
| 55-64 | 47.74 | 52.35 | 0.79 | 77.79 |
| 65-74 | 43.97 | 53.15 | 0.76 | 74.45 |
| 75 and over | 37.27 | 51.67 | 0.66 | 67.25 |
| **Race/ethnicity** | | | | |
| White | 49.92 | 51.52 | 0.83 | 79.90 |
| Black | 50.17 | 51.73 | 0.83 | 80.16 |
| Hispanic | 50.44 | 51.07 | 0.84 | 79.12 |
| Other | 51.09 | 51.57 | 0.86 | 79.43 |
| **Education** | | | | |
| Less than high school | 46.81 | 50.10 | 0.76 | 74.35 |
| High school degree | 49.30 | 51.50 | 0.82 | 79.03 |
| At least some college | 51.59 | 51.96 | 0.87 | 82.19 |
| **Metropolitan Statistical Area (MSA)** | | | | |
| MSA | 50.36 | 51.52 | 0.84 | 80.08 |
| Non-MSA | 48.67 | 51.42 | 0.81 | 78.80 |
| **Census region** | | | | |
| Northeast | 50.49 | 51.37 | 0.84 | 80.65 |
| Midwest | 50.66 | 52.01 | 0.84 | 80.78 |
| South | 49.31 | 51.44 | 0.82 | 79.57 |
| West | 50.13 | 51.14 | 0.84 | 78.55 |
| **Any insurance (July 2000)** | | | | |
| Yes | 49.94 | 51.73 | 0.84 | 79.95 |
| No | 50.54 | 50.34 | 0.82 | 79.31 |

**Note:** Table entries are means for each health status measure, estimated within each demographic category. PCS is the Physical Component Summary score from the SF-12®; MCS is the Mental Component Summary score from the SF-12®. EQ-5D refers to the EuroQol instrument.

**Source:** Center for Financing, Access, and Cost Trends, Agency for Healthcare Research and Quality: Medical Expenditure Panel Survey, Household Component, 2000 Full-Year File.

## Table 2. Means for four health status measures by selected chronic conditions

| Population characteristic | Health status measure | | | |
|---|---|---|---|---|
| | PCS | MCS | EQ-5D preference | EQ-5D rating |
| **Hypertension (ever)** | | | | |
| No | 51.58 | 51.74 | 0.86 | 81.88 |
| Yes | 44.20 | 50.59 | 0.73 | 72.09 |
| **Diabetes (ever)** | | | | |
| No | 50.51 | 51.60 | 0.84 | 80.61 |
| Yes | 41.65 | 49.66 | 0.69 | 66.25 |
| **Asthma (ever)** | | | | |
| No | 50.33 | 51.67 | 0.84 | 80.32 |
| Yes | 47.04 | 49.79 | 0.77 | 75.04 |

**Note:** Table entries are means for each health status measure, estimated within each category of chronic condition. A "yes" for each condition indicates that the person was told by a physician or other health professional, at some prior time, that he or she had the specific condition.

PCS is the Physical Component Summary score from the SF-12®; MCS is the Mental Component Summary score from the SF-12®. EQ-5D refers to the EuroQol instrument.

**Source:** Center for Financing, Access, and Cost Trends, Agency for Healthcare Research and Quality: Medical Expenditure Panel Survey, Household Component, 2000 Full-Year File.

## Technical Appendix

This data in this report were obtained during interviews for the Household Component (HC) of the 2000 Medical Expenditure Panel Survey (MEPS). MEPS is cosponsored by the Agency for Healthcare Research and Quality (AHRQ) and the National Center for Health Statistics (NCHS). The MEPS HC is a nationally representative survey of the U.S. civilian noninstitutionalized population that collects medical expenditure data at both the person and household levels. The focus of the MEPS HC is to collect detailed data on demographic characteristics, health conditions, health status, use of medical care services, charges and payments, access to care, satisfaction with care, health insurance coverage, income, and employment. In other components of MEPS, data are collected on the use, charges, and payments reported by providers and on the supply side of the health insurance market.

The sample for the 2000 MEPS HC was selected from respondents to the 1999 National Health Interview Survey (NHIS), which was conducted by NCHS. NHIS provides a nationally representative sample of the U.S. civilian noninstitutionalized population and reflects an oversampling of Hispanics and blacks. The MEPS HC collects data through an overlapping panel design. In this design, data are collected through a precontact interview that is followed by a series of five rounds of interviews over $2^1/_2$ years. Two calendar years of medical expenditure and utilization data are collected from each household and captured using computer-assisted personal interviewing (CAPI). This series of data collection rounds is launched again each subsequent year on a new sample of households to provide overlapping panels of survey data which, when combined with data from other ongoing panels, provide continuous and current estimates of health care expenditures.

Data in this report from the Short-Form 12 (SF-12®) and the EuroQol 5-D (EQ-5D) were obtained in the second half of 2000, in Round 2 for Panel 5 and Round 4 for Panel 4. Questionnaires containing these instruments, as well as other unrelated questions on health care experiences, were distributed to adult MEPS respondents (those aged 18 and older as of July 2000). Respondents completed the questionnaires at their convenience and returned them by mail. Of those eligible to receive the questionnaire, 93.5 percent responded. For analyzing data from the self-administered questionnaire, special weights were developed incorporating adjustments for questionnaire nonresponse. Statistical analyses incorporated these weights and also accounted for the complex MEPS survey sampling design.

A total of 1,899 cases (14 percent) were missing one or more SF-12® items. Scores for the Physical Component Summary (PCS) and the Mental Component Summary (MCS) of the SF-12® were imputed for 1,305 (69 percent) of these cases using the proprietary SF-12 algorithm for estimating missing data developed by QualityMetric, Inc. (www.sf-36.org).

Data on clinical conditions were obtained in Round 3 for Panel 5 and Round 5 for Panel 4, which took place approximately 6 months after the data collection for the SF-12® and EQ-5D. Respondents were asked whether each household member had ever been diagnosed by a doctor or other health professional as having selected chronic clinical conditions: diabetes (excluding gestational diabetes), asthma, and high blood pressure. These diagnoses were not validated by comparison with medical records.

Analyses were based on the 2000 full-year file (H-39). They were based on 11,295 cases with no missing data on any variable used in the analyses. (Imputed scores for the PCS-12 and MCS-12 were not considered to be missing.) These cases comprised 73 percent of those who were eligible and completed the self-administered questionnaire. Readers are cautioned that when analytic weights are applied to the subgroup used in the analysis, the estimated population total is less than the corresponding total for the eligible population. The estimated population total for the subgroup used in the analysis is 152,676,200. In contrast, the estimated population total for the 15,438 respondents with any questionnaire data is 202,737,847.

Although the sample of 11,295 cases with no missing data is not strictly nationally representative, estimates based on this sample do not diverge greatly from estimates based on the maximum number of available cases. For example, the overall means based on all available data were 49.22 for PCS-12 (unweighted n = 14,728), 51.16 for MCS-12 (unweighted n = 14,728), 0.82 for EQ-5D preference (unweighted n = 14,888), and 78.82 for EQ-5D rating (unweighted n = 13,100).

# Population Characteristics

## Race/Ethnicity

Classification by race and ethnicity was based on information provided by the household respondent for each household member. The respondent was asked if each person's race was best described as black, white, Asian or Pacific Islander, American Indian, or Alaska Native. The respondent was also asked if each person's main national origin or ancestry was Puerto Rican; Cuban; Mexican, Mexicano, Mexican American, or Chicano; other Latin American; or other Spanish. Persons claiming a main national origin or ancestry in one of these Hispanic groups, regardless of racial background, were classified as Hispanic. Since the Hispanic grouping can include persons of any race, the race categories of black, white, and other do not include Hispanic.

## Age

The respondent was asked to report the age of each family member as of the date of each interview. In this report, age is based on the sample person's age as of July 1, 2000.

## Metropolitan Statistical Area

Individuals were identified as residing either inside or outside a metropolitan statistical area (MSA) as designated by the U.S. Office of Management and Budget (OMB), which applied 1990 standards using population counts from the 1990 U.S. census. An MSA is a large population nucleus combined with adjacent communities that have a high degree of economic and social integration within the nucleus. Each MSA has one or more central counties containing the area's main population concentration. In New England, metropolitan areas consist of cities and towns rather than whole counties.

## Region

Each MEPS sample person was classified as living in one of the following four regions as defined by the Bureau of the Census:

- Northeast—Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, and Pennsylvania.
- Midwest—Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, and Kansas.
- South—Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, Kentucky, Tennessee, Alabama, Mississippi, Arkansas, Louisiana, Oklahoma, and Texas.
- West—Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Washington, Oregon, California, Alaska, and Hawaii.

## Insurance Coverage

Insurance coverage was based on an extensive set of questions ascertaining public and private sources of coverage for each respondent. The uninsured were defined as people not covered by Medicare, TRICARE, Medicaid, other public hospital/physician programs, or private hospital/physician insurance during July 2000. The relevant variable in the MEPS data is INSJU00X. Individuals covered only by noncomprehensive State-specific programs (e.g., Maryland Kidney Disease Program, Colorado Child Health Plan) or private single-service plans (e.g., coverage for dental or vision care only, coverage for accidents or specific diseases) were not considered to be insured.

# Sample Design and Accuracy of Estimates

MEPS is designed to produce estimates at the national and regional level over time for the civilian noninstitutionalized population of the United States and some subpopulations. The statistics presented in this report are affected by both sampling error and sources of nonsampling error, which include nonresponse bias, respondent reporting errors, interviewer effects, and data processing misspecifications. For a detailed description of the MEPS survey design, the adopted sample design, and methods used to minimize sources of nonsampling error, see Cohen (1997) and Cohen, Monheit, Beauregard, et al. (1996). The MEPS person-level estimation weights include nonresponse adjustments and

poststratification adjustments to population estimates derived from the Current Population Survey based on cross-classifications by region, MSA status, age, race/ethnicity, and sex.

Tests of statistical significance were used to determine whether the differences between populations exist at specified levels of confidence or whether they occurred by chance. Differences were tested using Z-scores having asymptotic normal properties at the 0.05 level of significance. Unless otherwise noted, only statistically significant differences between estimates are discussed in the text.

## Rounding

Estimates presented in the tables were rounded to the nearest hundredth. Standard errors, presented in Tables A and B, were rounded to the nearest 0.0001.

## Table A. Standard errors of means for four health status measures by selected population characteristics

*Corresponds to Table 1*

| Population characteristic | Health status measure | | | |
|---|---|---|---|---|
| | PCS | MCS | EQ-5D preference | EQ-5D rating |
| | Standard error | | | |
| **Total** | .1180 | .1163 | .0029 | .2196 |
| **Sex** | | | | |
| Women | .1465 | .1505 | .0039 | .2556 |
| Men | .1440 | .1300 | .0032 | .2852 |
| **Age in years** | | | | |
| 18-24 | .1771 | .2977 | .0057 | .3938 |
| 25-34 | .1981 | .2291 | .0050 | .4151 |
| 35-44 | .1834 | .2375 | .0042 | .3511 |
| 45-54 | .2290 | .2298 | .0056 | .5097 |
| 55-64 | .3529 | .3419 | .0086 | .6078 |
| 65-74 | .3673 | .3327 | .0082 | .6288 |
| 75 and over | .5157 | .5608 | .0130 | .9905 |
| **Race/ethnicity** | | | | |
| White | .1394 | .1303 | .0032 | .2444 |
| Black | .3160 | .3510 | .0083 | .7623 |
| Hispanic | .2664 | .2748 | .0070 | .4963 |
| Other | .5694 | .6712 | .0132 | 1.393 |
| **Education** | | | | |
| Less than high school | .3168 | .2943 | .0081 | .5874 |
| High school degree | .2006 | .1823 | .0041 | .3186 |
| At least some college | .1425 | .1378 | .0030 | .3222 |
| **Metropolitan Statistical Area (MSA)** | | | | |
| MSA | .1339 | .1306 | .0035 | .2609 |
| Non-MSA | .2289 | .2491 | .0047 | .4030 |
| **Census Region** | | | | |
| Northeast | .3067 | .2539 | .0066 | .5607 |
| Midwest | .1638 | .2418 | .0058 | .3942 |
| South | .1998 | .1835 | .0050 | .3670 |
| West | .2508 | .2378 | .0064 | .3858 |
| **Any insurance (July 2000)** | | | | |
| Yes | .1343 | .1265 | .0032 | .2603 |
| No | .2776 | .2954 | .0065 | .4514 |

**Note:** Table entries are standard errors of the mean for each health status measure, estimated within each demographic category. PCS is the Physical Component Summary score from the SF-12®; MCS is the Mental Component Summary score from the SF-12®. EQ-5D refers to the EuroQol instrument.

**Source:** Center for Financing, Access, and Cost Trends, Agency for Healthcare Research and Quality: Medical Expenditure Panel Survey, Household Component, 2000 Full-Year File.

## Table B. Standard errors of means for four health status measures by selected chronic conditions

*Corresponds to Table 2*

| Population characteristic | Health status measure | | | |
|---|---|---|---|---|
| | PCS | MCS | EQ-5D preference | EQ-5D rating |
| | **Standard error** | | | |
| **Hypertension (ever)** | | | | |
| No | .1127 | .1240 | .0028 | .2421 |
| Yes | .2758 | .2436 | .0062 | .4424 |
| **Diabetes (ever)** | | | | |
| No | .1140 | .1151 | .0029 | .2153 |
| Yes | .5470 | .4852 | .0129 | .9706 |
| **Asthma (ever)** | | | | |
| No | .1182 | .1137 | .0029 | .2229 |
| Yes | .4757 | .3982 | .0115 | .7010 |

**Note:** Table entries are standard errors of the mean for each health status measure, estimated within each chronic condition category. PCS is the Physical Component Summary score from the SF-12®; MCS is the Mental Component Summary score from the SF-12®. EQ-5D refers to the EuroQol instrument.

**Source:** Center for Financing, Access, and Cost Trends, Agency for Healthcare Research and Quality: Medical Expenditure Panel Survey, Household Component, 2000 Full-Year File.

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