Medical Expenditure Panel Survey

Agency for Healthcare Research and Quality

STATISTICAL BRIEF #120

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Trends in the Use of Diuretics to Treat Hypertension, 1997 and 2003

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Introduction

Hypertension is a chronic condition that is commonly treated with several classes of medications, including diuretics, beta blockers, calcium channel blockers, and ACE inhibitors. JNC 6 guidelines, which were issued in 1997, and JNC 7 guidelines, which were issued in 2003, both recommend diuretics as first-line drugs in the treatment of uncomplicated hypertension. JNC 7 guidelines also state that when more than one class of drugs is required to control blood pressure treatment should usually include a diuretic.*

This Statistical Brief presents estimates based on data from the Household Component of the Medical Expenditure Panel Survey (MEPS-HC) on trends from 1997 to 2003 in diuretic use in the U.S. civilian noninstitutionalized population. The sample is composed of adults ages 18 and older who were reported to have received treatment for hypertension during the year. Trends in diuretic use are examined for this population overall and for subgroups of this population defined by age, sex, race/ethnicity, income, insurance status, education, and health status. All differences discussed in the text are statistically significant at the 0.05 level or better.

Findings

In 1997, 14.8 percent of adults 18 and older in the U.S. civilian noninstitutionalized population were reported to have received treatment for hypertension during the year; by 2003, the proportion of adults reported to have received treatment for hypertension had increased to 19.1 percent (estimates not shown in a figure).

Highlights

- Among U.S. adults ages 18 and older who were reported as receiving treatment for hypertension, the overall proportion using diuretics increased from 39.8 percent in 1997 to 45.3 percent in 2003.
- The proportion of females reported as receiving treatment for hypertension who used a diuretic increased from 43.8 percent in 1997 to 49.5 percent in 2003 while males' use of diuretics rose from 34.3 to 40.2 percent.
- Diuretic use among adults who were reported to have treatment for hypertension increased regardless of health status as the proportion with use increased, from 1997 to 2003, for those in fair or poor health and for those in excellent, very good, or good health.

Among all adults who were reported as receiving treatment for hypertension, the proportion using a diuretic increased from 39.8 percent in 1997 to 45.3 percent in 2003 (figure 1). The proportion of women who used a diuretic increased from 43.8 percent in 1997 to 49.5 percent in 2003 while male's use of diuretics rose from 34.3 to 40.2 percent.

Among elderly adults (those 65 and older) who were reported to have received treatment for hypertension, the proportion using diuretics increased from 47.6 percent in 1997 to 52.6 percent in 2003 (figure 2).

* See JNC 7 Express: The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure under the National Heart, Lung, and Blood Institute at the National Institutes of Health, NIH Publication No. 03-5233, December 2003; and The Sixth Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure, Archives of Internal Medicine, November 1997.

Increased use was also observed among adults ages 45 to 64 as the proportion using diuretics grew from 35.2 to 43.7 percent over this time period. For young adults (those 18 to 44), the percentage of persons with diuretic use was similar for 1997 and 2003.

For black non-Hispanic adults who were reported to have received treatment for hypertension, the proportion using diuretics grew from 45.0 percent in 1997 to 53.2 percent in 2003 (figure 3). Over the same time period, the proportion of white non-Hispanics using diuretics grew from 40.4 percent to 45.6 percent.

Diuretic use among adults who were reported to have received treatment for hypertension also increased for three of the four income groups when comparing the years 1997 and 2003. The proportion using diuretics rose from 38.7 percent to 46.4 percent for the poor/near poor, from 44.0 percent to 51.4 percent for those with low incomes, and from 34.5 percent to 43.2 percent for those with high incomes (figure 4). In the middle income category, approximately 44 percent of adults used a diuretic in 1997 and in 2003.

Among adults 65 and older who were reported to have received treatment for hypertension, diuretic use for those with Medicare HMO or with Medicare fee-for-service coverage only increased from 42.4 percent in 1997 to 53.6 percent in 2003. Among adults less than 65, the proportion of privately insured persons who used a diuretic increased from 31.9 to 39.3 percent.

Among adults 18 and older who were reported to have treatment for hypertension, the proportion with diuretic use increased for two of three education categories from 1997 to 2003. For those with less than a high school education, it rose from 44.3 to 49.8 percent; and for those with at least some college education, it rose from 35.7 to 44.6 percent (figure 6).

Diuretic use increased from 1997 to 2003 regardless of health status. Among persons who were reported to have treatment for hypertension, the proportion using a diuretic increased from 45.8 to 51.5 percent for those in fair or poor health and from 37.5 to 43.4 percent for those in excellent, very good, or good health (figure 7).

Data Source

The estimates presented in this Statistical Brief were derived from the 1997 and 2003 full-year consolidated data files and the 1997 and 2003 MEPS prescribed medicines (PMED) files. Diuretics were identified by linking the PMED files to the Multum Lexicon.

Definitions

Identification of persons with hypertension

In this brief, hypertensive adults were identified using household-reported information on conditions. Hypertensive adults were primarily identified using information on conditions that was recorded in the MEPS in connection with health care use (e.g., when a person is reported as purchasing a drug, the household respondent is asked what condition(s) the drug was intended to treat). Approximately 95 percent of the hypertensive adults identified in this brief were reported to have purchased drugs, visited a doctor’s office, or had other health services to treat their high blood pressure during the year. Hypertensive adults were also identified through responses to a general question that asks whether a person had been bothered by any condition. About 5 percent of the hypertensive adults were identified only through this question; that is, they were not reported to have received any health services to treat their high blood pressure during the year. Questions that ask whether a doctor had ever told a person that he or she had hypertension were not used to identify hypertensive adults.

Diuretic use

Individuals were classified as having used a diuretic if they had one or more purchases of a prescribed diuretic medication during the year. This includes drugs with one active ingredient from the diuretic class as well as antihypertensive combination drugs that contain a diuretic along with an active ingredient from another class of antihypertensive drugs. All subclasses of diuretics (loop diuretics, potassium sparing diuretics, thiazide diuretics, carbonic anhydrase inhibitors, and miscellaneous diuretics) were included.

Racial/ethnic classifications

Classification by race/ethnicity was based on information reported for each family member. Respondents were asked if each family member's race was best described as black, white, or other. (In this report, “other” includes American Indians, Alaska Natives, Asians, Pacific Islanders, and people who reported multiple races.) They also were asked if each family member's main national origin or ancestry was Puerto Rican; Cuban; Mexican, Mexicano, Mexican American, or Chicano; other Latin American; or other Spanish. All adults whose main national origin or ancestry was reported in one of these Hispanic groups, regardless of racial background, were classified as Hispanic. Since the Hispanic grouping can include black Hispanics, white Hispanics, and other Hispanics, the race categories of black, white, and other do not include Hispanics. Results are presented for Hispanics, white non-Hispanics and black non-Hispanics. Results are not presented for other non-Hispanics because the sample for this group was too small to support reliable estimates.

Income

Income categories are based on the ratio of the family’s income to the Federal poverty thresholds, which control for the size of the family and the age of the head of the family. The following income categories are used in this report:

– Poor/near poor: Adults in families with income of 125 percent of the poverty line or less, including those who reported negative income.
– Low income: Adults in families with income from over 125 percent through 200 percent of the poverty line.
– Middle income: Adults in families with income from over 200 percent through 400 percent of the poverty
– High income: Adults in families with income over 400 percent of the poverty line.

Health insurance status

Individuals under age 65 were classified in the following three insurance categories, based on household responses to health insurance status questions:

– Any private health insurance: Individuals who, at any time during the year, had insurance that provides coverage for hospital and physician care (other than Medicare, Medicaid, or other public hospital/physician coverage) were classified as having private insurance. Coverage by TRICARE/ CHAMPUS (Armed Forces–related coverage) was also included as private health insurance. Insurance that provides coverage for a single service only, such as dental or vision coverage, was not included.
– Public coverage only: Individuals were considered to have public coverage only if they met both of the following criteria: 1) they were not covered by private insurance at any time during the year, and 2) they were covered by one of the following public programs at any point during the year: Medicare, Medicaid, or other public hospital/physician coverage.
– Uninsured: The uninsured were defined as people not covered by private hospital/physician insurance, Medicare, TRICARE/CHAMPUS, Medicaid, or other public hospital/physician programs at any time during the entire year or period of eligibility for the survey.

For individuals age 65 and older, the following insurance categories were used:

– Medicare plus private: Individuals who, at any time during the year, were covered by TRICARE/ CHAMPUS or a supplemental private insurance policy in addition to Medicare.
– Medicare plus other public coverage: Individuals were considered to have Medicare plus other public coverage if they were covered by Medicare and met both of the following criteria: 1) they were not covered by TRICARE/CHAMPUS or a supplemental private policy at any time during the year, and 2) they were covered by Medicaid or other public hospital/physician coverage in addition to Medicare.
– Medicare HMO/Medicare only: This group includes adults who did not report any private or public supplemental insurance coverage and were enrolled in Medicare HMOs or had Medicare fee-for-service coverage only.
– Missing: A small percentage of individuals age 65 and over were reported to have no Medicare coverage. These persons were excluded from figure 5.

Perceived health status

During each round of interviewing, the household respondent was asked to rate the health of each person in the family according to the following categories: excellent, very good, good, fair, or poor. For this report, the response categories excellent, very good, and good were collapsed, as were fair and poor. Health status was missing for a small percentage of individuals.

About MEPS-HC

MEPS-HC is a nationally representative longitudinal survey that collects detailed information on health care utilization and expenditures, health insurance, and health status, as well as a wide variety of social, demographic, and economic characteristics for the civilian noninstitutionalized population. It is cosponsored by the Agency for Healthcare Research and Quality and the National Center for Health Statistics.

For more information about MEPS, call the MEPS information coordinator at AHRQ (301-427-1656) or visit the MEPS Web site at http://www.meps.ahrq.gov/.

References

For a detailed description of the MEPS survey design, sample design, and methods used to minimize sources of nonsampling error, see the following publications:

Cohen, J. *Design and Methods of the Medical Expenditure Panel Survey Household Component.* MEPS Methodology Report No. 1. AHCPR Pub. No. 97-0026. Rockville, Md.: Agency for Health Care Policy and Research, 1997.

Cohen, S. *Sample Design of the 1996 Medical Expenditure Panel Survey Household Component.* MEPS Methodology Report No. 2. AHCPR Pub. No. 97-0027. Rockville, Md.: Agency for Health Care Policy and Research, 1997.

Cohen, S. Design Strategies and Innovations in the Medical Expenditure Panel Survey. *Medical Care,* July 2003: 41(7) Supplement: III-5–III-12.

Suggested Citation

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AHRQ welcomes questions and comments from readers of this publication who are interested in obtaining more information about access, cost, use, financing, and quality of health care in the United States. We also invite you to tell us how you are using this Statistical Brief and other MEPS data and tools and to share suggestions on how MEPS products might be enhanced to further meet your needs. Please e-mail us at mepspd@ahrq.gov or send a letter to the address below:

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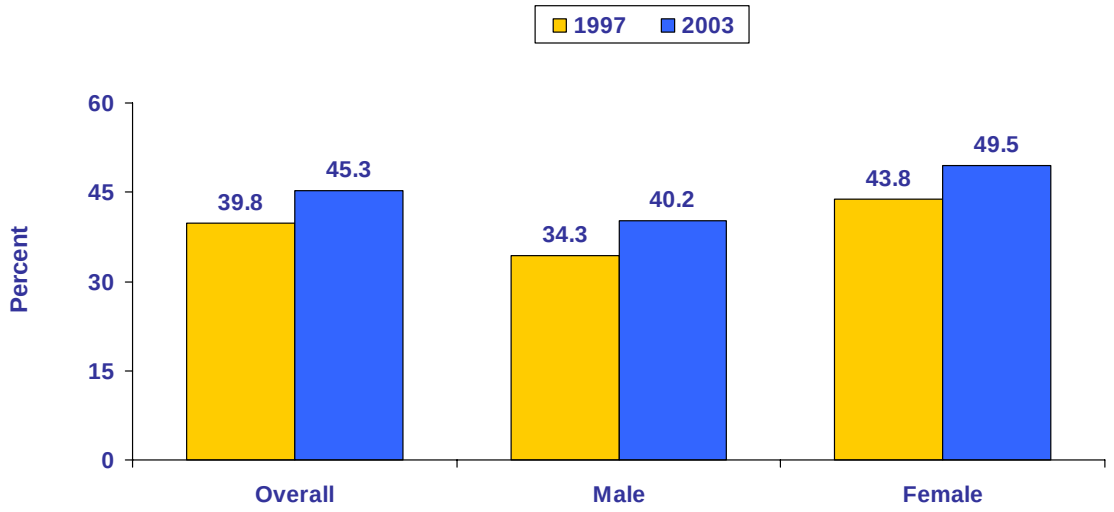
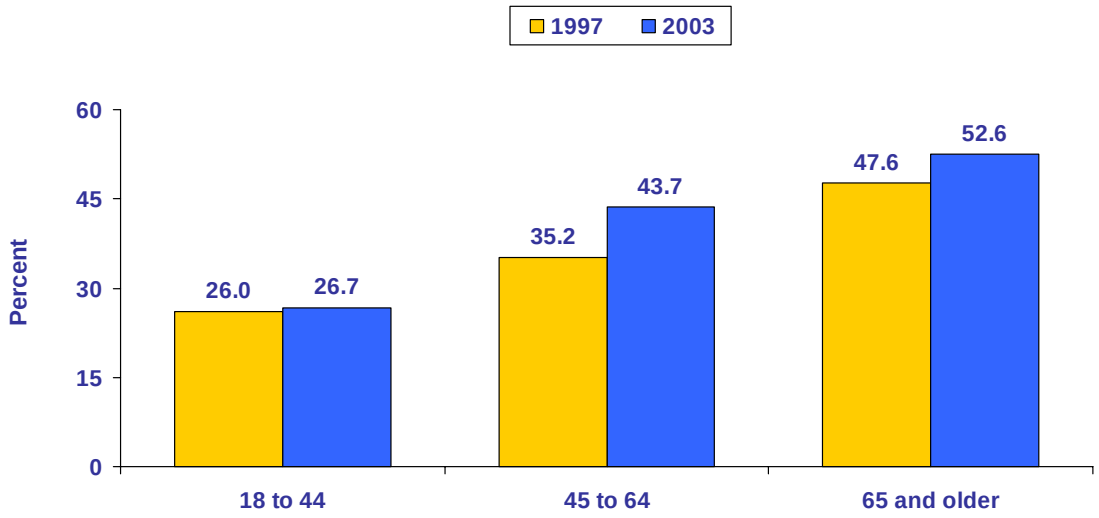
Figure 1. Percentage of adults reported as receiving treatment for hypertension who used diuretics, overall and by sex, 1997 and 2003



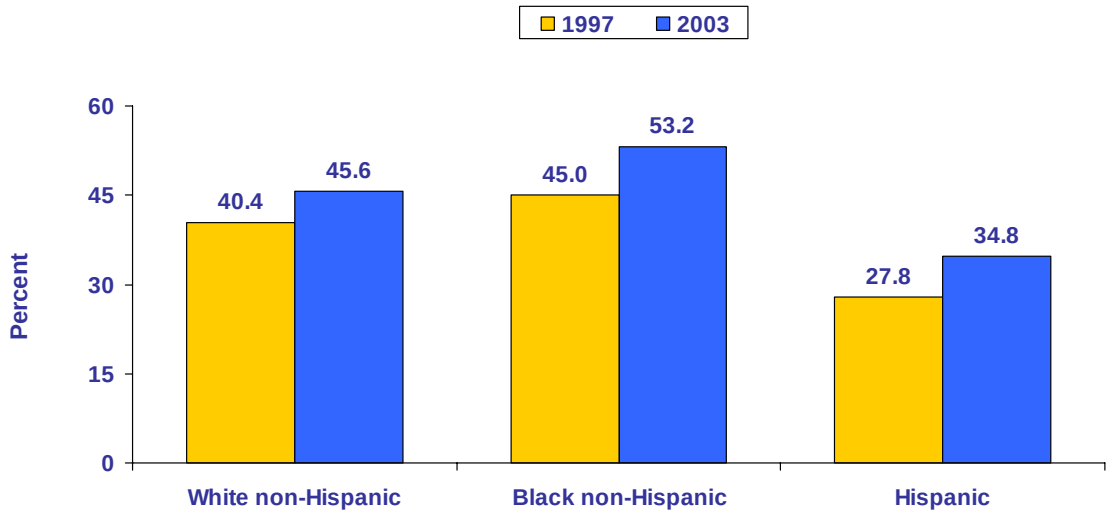
Source: Center for Financing, Access, and Cost Trends, AHRQ, Household Component of the Medical Expenditure Panel Survey, 1997 and 2003

Figure 2. Percentage of adults reported as receiving treatment for hypertension who used diuretics, by age, 1997 and 2003



Source: Center for Financing, Access, and Cost Trends, AHRQ, Household Component of the Medical Expenditure Panel Survey, 1997 and 2003

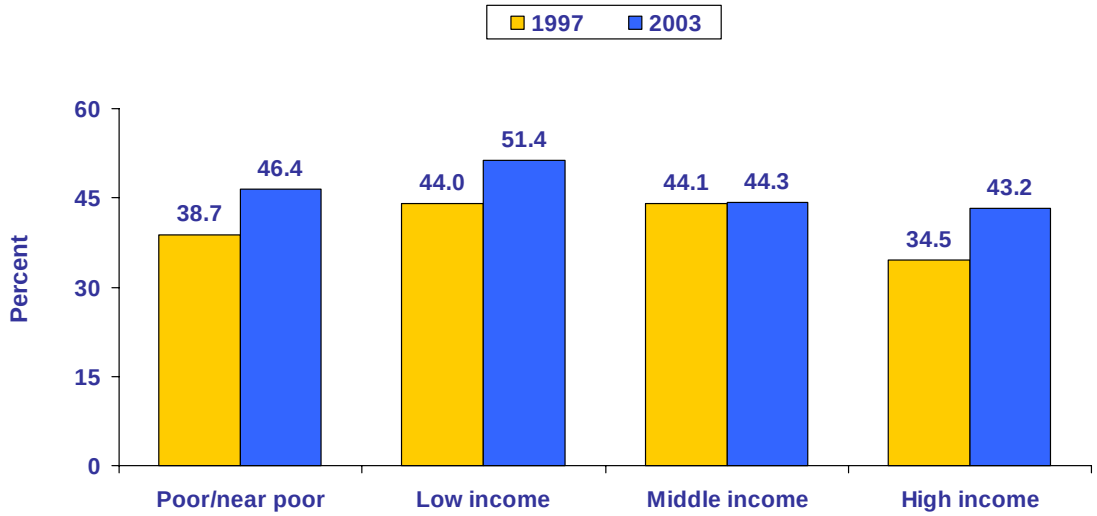
Figure 3. Percentage of adults reported as receiving treatment for hypertension who used diuretics, by race/ethnicity*, 1997 and 2003



*Results are not presented for persons in the other non-Hispanic category due to an insufficient sample in 1997.

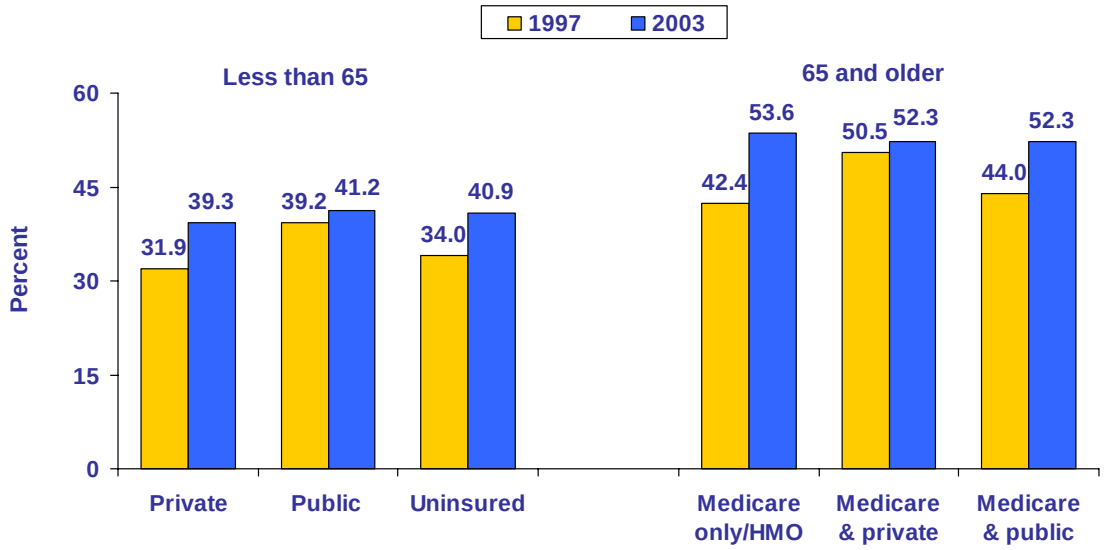
Source: Center for Financing, Access, and Cost Trends, AHRQ, Household Component of the Medical Expenditure Panel Survey, 1997 and 2003

Figure 4. Percentage of adults reported as receiving treatment for hypertension who used diuretics, by income, 1997 and 2003



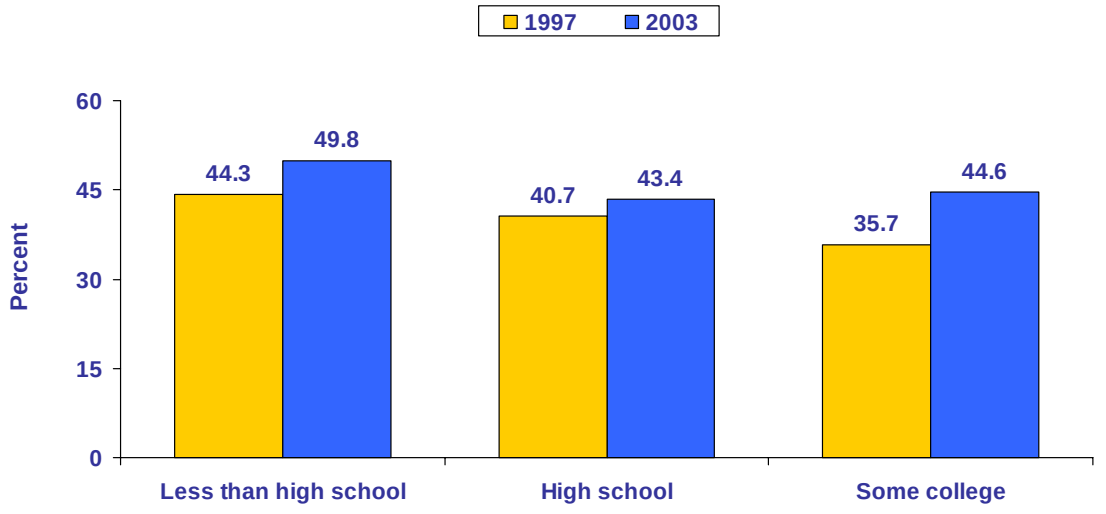
Source: Center for Financing, Access, and Cost Trends, AHRQ, Household Component of the Medical Expenditure Panel Survey, 1997 and 2003

Figure 5. Percentage of adults reported as receiving treatment for hypertension who used diuretics, by insurance status, 1997 and 2003



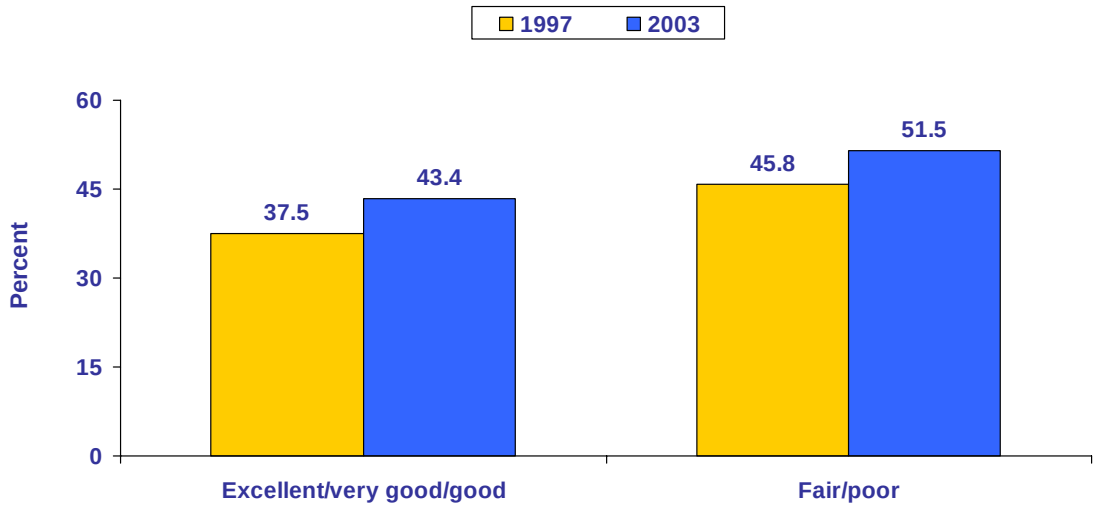
Source: Center for Financing, Access, and Cost Trends, AHRQ, Household Component of the Medical Expenditure Panel Survey, 1997 and 2003

Figure 6. Percentage of adults reported as receiving treatment for hypertension who used diuretics, by education, 1997 and 2003



Source: Center for Financing, Access, and Cost Trends, AHRQ, Household Component of the Medical Expenditure Panel Survey, 1997 and 2003

Figure 7. Percentage of adults reported as receiving treatment for hypertension who used diuretics, by health status, 1997 and 2003



Source: Center for Financing, Access, and Cost Trends, AHRQ, Household Component of the Medical Expenditure Panel Survey, 1997 and 2003