STATISTICAL BRIEF #372

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Trends in Anticonvulsants Utilization and Expenditures for the U.S. Civilian Noninstitutionalized Population, 1999 and 2009

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Introduction

Rising health care costs in general and prescribed medicine costs in particular continue to be a concern for U.S. policymakers and consumers of care. Analyzing down total prescription drug costs into therapeutic classes and subclasses provides decision makers and the public with an understanding of the costs and extent to which specific therapeutic classes and subclasses of drugs are contributing to the upturn in total costs. This Statistical Brief provides trends for one therapeutic subclass of prescribed drugs—anticonvulsants.

This Brief presents trends in utilization and expenditures for outpatient prescription anticonvulsants for the years 1999 and 2009. The estimates are for the U.S. civilian noninstitutionalized population and are derived from the 1999 and 2009 Household Component of the Medical Expenditure Panel Survey (MEPS-HC). For outpatient prescription anticonvulsants, the Brief compares, for 1999 and 2009, the number of persons obtaining at least one prescription, total expenditures, and total number of prescriptions, as well as average annual cost per person and average drug cost.

Only prescriptions purchased or obtained in an outpatient setting are included in these estimates. Prescription medicines administered in an inpatient setting or in a clinic or physician's office are excluded. Expenditure estimates are presented in real dollars; estimates for 1999 were inflated to 2009 dollars based on the GDP Price Index (http://www.meps.ahrq.gov/mepsweb/about_meps/Price_Index.shtml). All differences discussed in the text are statistically significant at the 0.05 level.

Findings

Comparing 1999 with 2009, MEPS estimates showed an increase in the total number of people (as well as the proportion of the population) in the U.S. civilian noninstitutionalized population obtaining at least one anticonvulsant, rising from 8.6 million (3.1 percent of the 276.4 million people in the total population) to 15.2 million people (5.0 percent of the 306.7 million people in the total population) (figure 1).

There was an increase of over 200 percent in total inflation adjusted expenditures for anticonvulsants when comparing the years 1999 ($3.3 billion) and 2009 ($10.6 billion) (figure 2).

From 1999 to 2009, MEPS estimates showed a growth in the total number of prescriptions for anticonvulsants from 54.2 million to 106.5 million prescriptions, an increase of 96 percent (figure 3).

From 1999 to 2009, MEPS estimates showed an increase of 80 percent in the inflation adjusted annual mean expense per person obtaining one or anticonvulsant, from $387 to $697 (figure 4).

There was an increase of 64 percent in the inflation adjusted average drug expense per purchase for an anticonvulsant when comparing 1999 with 2009, rising from $61 to $100 (figure 5).

Highlights

- From 1999 to 2009, inflation adjusted total expenses increased from $3.3 billion to $10.6 billion.

- From 1999 to 2009, the number of people in the U.S. civilian noninstitutionalized population obtaining at least one outpatient prescription anticonvulsant increased from 8.6 million people to 15.2 million people.

- From 1999 to 2009, utilization of outpatient prescription anticonvulsants increased from 54.2 million prescriptions to 106.5 million prescriptions.

- From 1999 to 2009, the inflation adjusted average cost per person for prescription anticonvulsants for those with an expense rose from $387 to $697.

When looking at trends over time for therapeutic subclass and sub therapeutic subclasses, it is important to keep in mind many factors can play a role. These factors include: 1) drugs are reclassified due to changes in the Multum therapeutic classification scheme, 2) new drugs become available over time, and 3) generic versions of previously brand name only drugs become available. This is of particular importance when comparing sub therapeutic subclasses over time.

Comparing 1999 with 2009, MEPS estimates showed for common sub therapeutic subclasses for anticonvulsants (barbiturate anticonvulsants, benzodiazepine anticonvulsants, and miscellaneous anticonvulsants) a decrease in total expenses, $3.0 billion versus $.8 billion. For non common sub therapeutic subclasses, in 1999 (hydantoin anticonvulsants), total expenses were $0.3 billion, and in 2009 (succinimide anticonvulsants, dibenzazepine anticonvulsants, fatty acid derivative anticonvulsants, gamma-aminobutyric acid analogs, triazine anticonvulsants, pyrrolidine anticonvulsants, and carbonic anhydrase inhibitor anticonvulsants), total expenses were $9.8 billion (data not shown).

Comparing 1999 with 2009, MEPS estimates showed for common sub therapeutic subclasses for anticonvulsants, no significant change in utilization, 45.2 million prescriptions versus 40.0 million prescriptions. For non common sub therapeutic subclasses, in 1999, utilization was 9.1 million prescriptions, and in 2009, utilization was 66.6 million prescriptions (data not shown).

Data Source

The estimates shown in this Statistical Brief are based on data from MEPS: HC-068: Multum Lexicon Addendum Files to MEPS Prescribed Medicines Files 1996-2001, HC-038: 1999 Full Year Consolidated Data File, HC-033A: 1999 Prescribed Medicines File, and HC-126A: 2009 Prescribed Medicines File.

Definitions/Methodology

Purchases and expenditures
Utilization was defined as purchasing or obtaining anticonvulsants prescribed in the year of interest. Refills as well as original prescriptions are included in expenditure and utilization estimates. Expenditures include the total direct payments from all sources to pharmacies for prescriptions reported by respondents in the MEPS-HC. Expenditures are in real dollars; estimates for 1999 were adjusted to 2009 dollars based on the GDP Price Index (http://www.meps.ahrq.gov/mepsweb/about_meps/Price_Index.shtml).

Therapeutic classifications
Therapeutic class and subclass were assigned to MEPS prescribed medicines using Multum Lexicon variables from Cerner Multum, Inc. MEPS prescribed medicines files were linked to the Multum Lexicon database to obtain therapeutic class and subclass variables. The first choice in the linking algorithm was chosen when assigning therapeutic classes and subclasses. The following was used to define anticonvulsants: therapeutic class: central nervous system agents; subclass: anticonvulsants. In 1999 and 2009 common sub therapeutic subclasses for anticonvulsants included: barbiturate anticonvulsants, benzodiazepine anticonvulsants, and miscellaneous anticonvulsants. In 1999 only, the subclass anticonvulsants also included the following sub therapeutic subclass: hydantoin anticonvulsants. In 2009 only, the subclass anticonvulsants also included the following sub therapeutic subclasses: succinimide anticonvulsants, dibenzazepine anticonvulsants, fatty acid derivative anticonvulsants, gamma-aminobutyric acid analogs, triazine anticonvulsants, pyrrolidine anticonvulsants, and carbonic anhydrase inhibitor anticonvulsants. For additional information on these and other Multum Lexicon variables, please refer to the Multum Web site.

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 U.S. civilian noninstitutionalized population. It is cosponsored by the Agency for Healthcare Research and Quality and the National Center for Health Statistics.

MEPS expenditure data are derived from both the Medical Provider Component (MPC) and Household Component (HC). MPC data are generally used for hospital-based events (e.g., inpatient stays, emergency room visits, and outpatient department visits), prescribed medicine purchases, and home health agency care. Office based physician care estimates use a mix of HC and MPC data while estimates for non-physician office visits, dental and vision services, other medical equipment and services, and independent provider home health care services are based on HC provided data. Details on the estimation process can be found in Machlin, S. R. and Dougherty, D. D. *Overview of Methodology for Imputing Missing Expenditure Data in the Medical Expenditure Panel Survey*. Methodology Report No. 19. March 2007. Agency for Healthcare Research and Quality, Rockville, MD. http://www.meps.ahrq.gov/mepsweb/data_files/publications/mr19/mr19.pdf

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-HC 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, 2001. http://www.meps.ahrq.gov/mepsweb/data_files/publications/mr1/mr1.pdf

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, 2001. http://www.meps.ahrq.gov/mepsweb/data_files/publications/mr2/mr2.pdf

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

Ezzati-Rice, TM, Rohde, F, Greenblatt, J. *Sample Design of the Medical Expenditure Panel Survey Household Component, 1998–2008*. Methodology Report No. 22. March 2008. Agency for Healthcare Research and Quality, Rockville, MD. http://www.meps.ahrq.gov/mepsweb/data_files/publications/mr22/mr22.pdf

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 MEPSProjectDirector@ahrq.hhs.gov or send a letter to the address below:

Steven B. Cohen, PhD, Director
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Figure 1. Total number of persons purchasing one or more prescribed anticonvulsants, 1999 and 2009
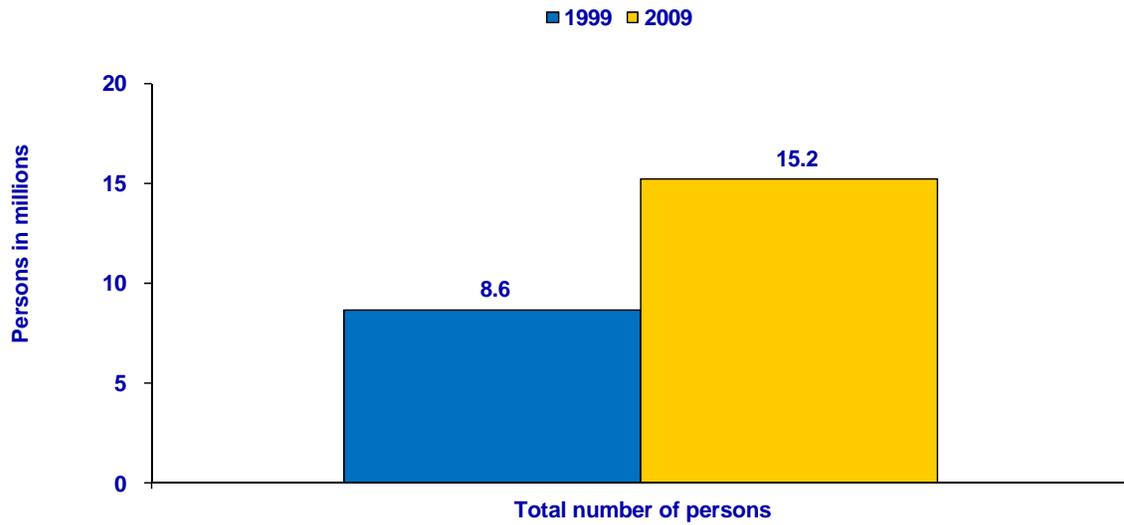
■ 1999 □ 2009

Persons in millions

8.6

15.2

Total number of persons

Source: Center for Financing, Access, and Cost Trends, AHRQ, Household Component of the Medical Expenditure Panel Survey, 1999 and 2009

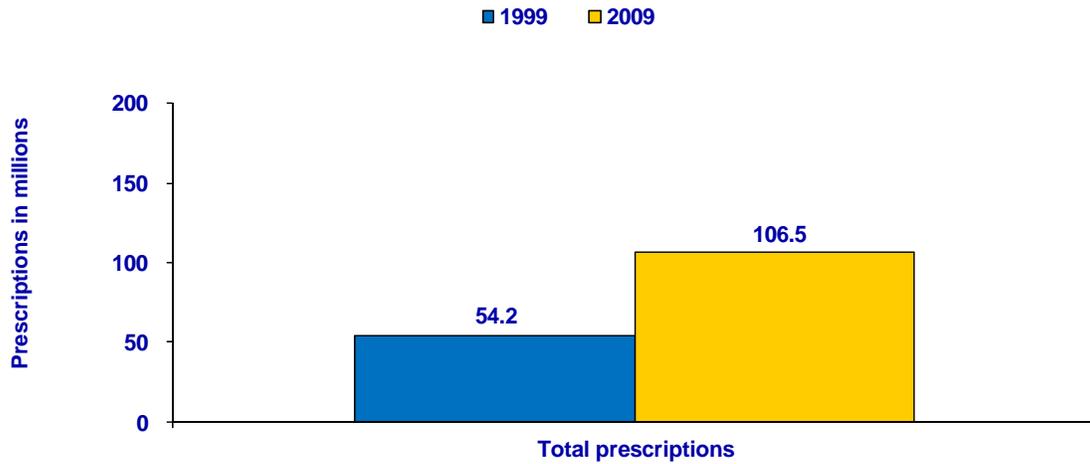**Figure 2. Total expenses for prescribed anticonvulsants, 1999 (adjusted to 2009 dollars) and 2009**
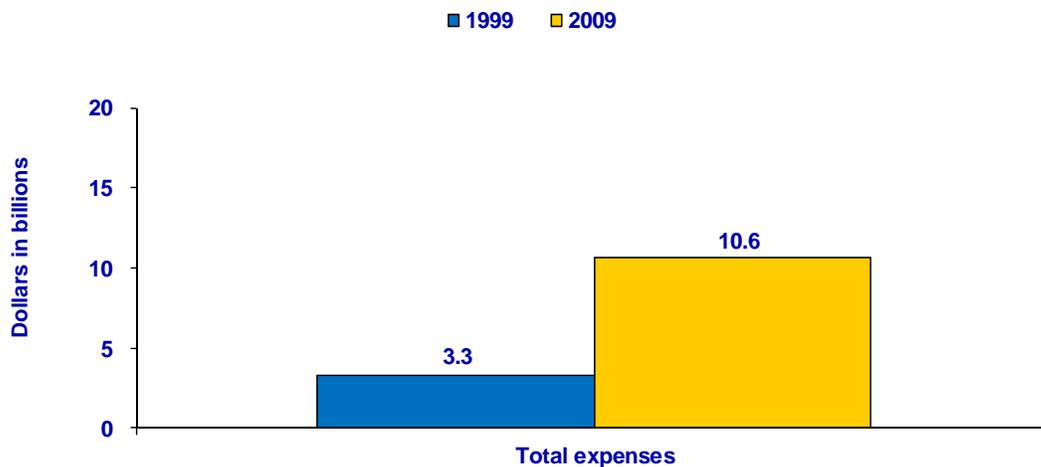
■ 1999 □ 2009

Dollars in billions

3.3

10.6

Total expenses

Source: Center for Financing, Access, and Cost Trends, AHRQ, Household Component of the Medical Expenditure Panel Survey, 1999 and 2009
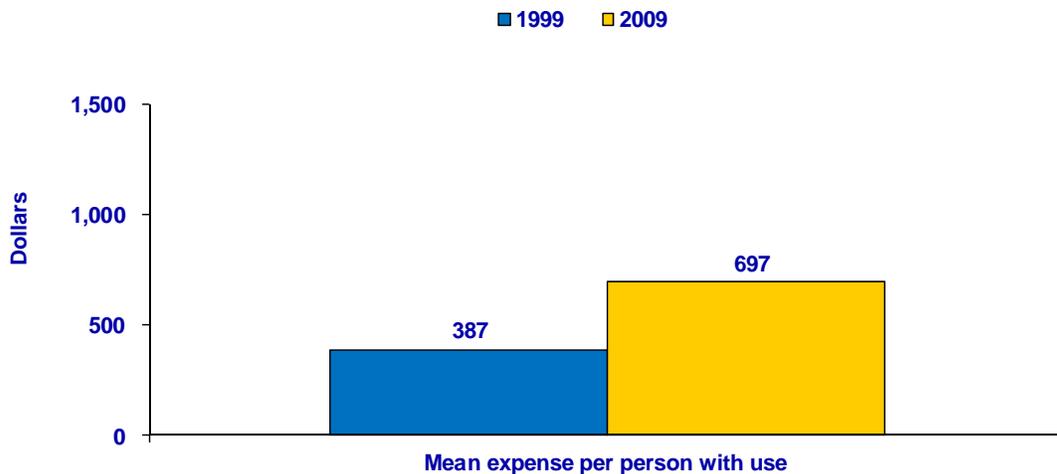
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Figure 3. Total number of prescriptions for anticonvulsants, 1999 and 2009

■ 1999   □ 2009

Prescriptions in millions

54.2

106.5

Total prescriptions

Figure 4. Mean expense per person for persons using one or more anticonvulsants, 1999 (adjusted to 2009 dollars) and 2009

■ 1999   □ 2009

Dollars

387

697

Mean expense per person with use

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Figure 5. Mean expense per drug purchase of an anticonvulsant, 1999 (adjusted to 2009 dollars) and 2009

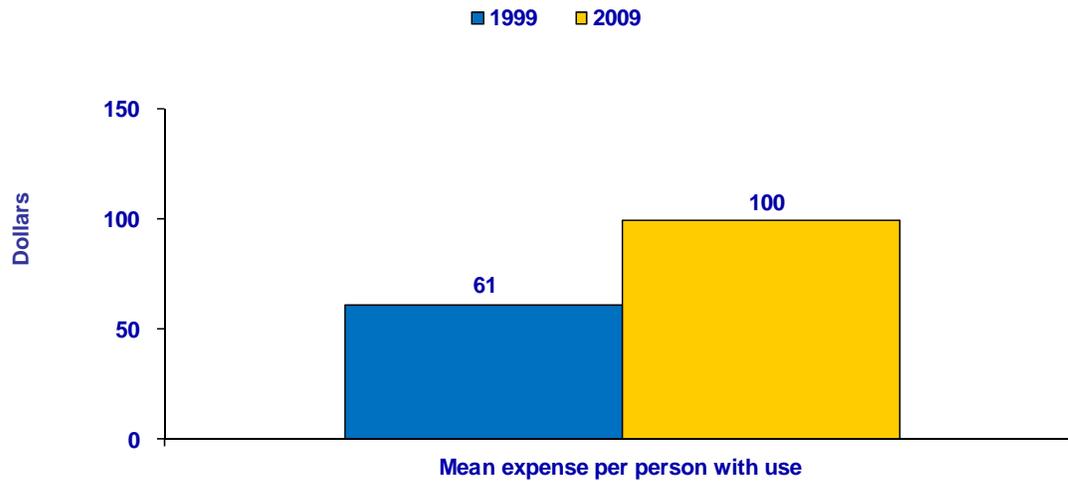Source: Center for Financing, Access, and Cost Trends, AHRQ, Household Component of the Medical Expenditure Panel Survey, 1999 and 2009