Changes in Osteoporosis Medication Use and Expenditures among Women (Age ≥ 50), United States, 2000 to 2011

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Introduction

Osteoporosis, a disease that predominantly affects menopausal women, is characterized by compromised bone strength and increased risk of fracture, and if left untreated with pharmacological intervention can impose significant clinical and economic burden for patients and society. There are several pharmacological options that are approved by the U.S. Food and Drug Administration (FDA) for the prevention and/or treatment of osteoporosis.1,2,3

This Statistical Brief examines changes in osteoporosis medication use and expenditures among women (age ≥ 50) in the United States. using nationally representative data from the 2000 to 2011 Medical Expenditure Panel Survey (MEPS). The FDA-approved medications with indication for the prevention and/or treatment of osteoporosis examined in this Statistical Brief includes anabolics (i.e., parathyroid hormone—PTH) and antiresorptives (e.g., bisphosphonates, calcitonin, and selective estrogen receptor modulators—SERMs). Data from 2000–2001 to 2010–2011 are pooled to increase sample sizes and the precision of estimates; thus, results are presented as average annual estimates for these time periods. Expenditures for all years are expressed in constant 2011 U.S. dollars. All differences between estimates discussed in the text are statistically significant at the 0.05 level unless otherwise noted. This Brief begins by presenting results on trends in the use and expenditures for medications indicated for the prevention and/or treatment of osteoporosis.

Findings

The number of women (age ≥ 50) in the U.S. noninstitutionalized civilian population increased from an average annual of 42.7 million in 2000–2001 to 55.2 million in 2010–2011 (figure 1).

Among women (age ≥ 50), the average annual percent who reported using any SERMs declined from 4.1 percent in 2000–2001 to 1.6 percent in 2010–2011. During the same period, the average annual percentage who reported using bisphosphonates increased from 5.6 percent in 2000–2001 to 8.3 percent in 2010–2011 (figure 2).

Among women (age ≥ 50) using any prescription osteoporosis medication, the average annual expenditures for SERMs fell from $30 in 2000–2001 to $14 in 2010–2011 after adjustment for inflation. During the same period, the average annual expenditures for bisphosphonates increased 54 percent from $30 in 2000–2001 to $41 in 2010–2011 (figure 3).

Among women (age ≥ 50), the annual expenditures per user for SERMs and bisphosphonates averaged $669 and $500 in 2000–2001, and $771 and $450 in 2010–2011 (figure 4).

1 Note that FDA-approved medications that are indicated for the prevention and/or treatment of osteoporosis might be prescribed for reasons other than the prevention and/or treatment of osteoporosis.


Definitions

Osteoporosis medications

Each drug that was listed as purchased or otherwise obtained in the MEPS Prescribed Medicines (PMED) Files was linked to the Multum Lexicon database, a product of Cerner Multum, Inc. The Multum drug name variable gives the active ingredient(s) in each drug and was used to identify the two major types of osteoporosis medications—anabolics: parathyroid hormone—PTH (teriparatide), and antiresorptives: bisphosphonates (e.g., alendronate, risedronate, ibandronate, etidronate, pamidronate, and zolendronic acid); calcitonin; and selective estrogen receptor modulators SERMs (e.g., raloxifene). A class of approved osteoporosis medication, receptor activator of nuclear factor-kappa B (NFkB) ligand (RANKL) inhibitor (denosumab), was not available in the MEPS during the analysis period. Information about indication and effectiveness of osteoporosis medications and their ability to reduce the risk of different fracture types can be found in the publications listed as footnotes 2 and 3.

Utilization

Indicator variables were created to identify persons who used each of the major classes of osteoporosis medications and their combinations during the year. For combination drugs, an adult was identified as having had each medication comprising the combination therapy. For example, if an adult had a combination drug that included both a bisphosphonate and calcium, then the adult was identified as having used each of these types of osteoporosis medications. Utilization estimates are presented as the percent of persons using each of the general types of osteoporosis medications, and each specific class of osteoporosis medication during the year.

Expenditures

Expenditures include all amounts paid for health care from any source including payments by individuals and their families and payments by private insurance, Medicaid, Medicare, and other types of insurance. For this Brief, all expenditures were adjusted to constant 2011 U.S. dollars using the Consumer Price Index for all urban consumers (CPI-U). All estimates presented are average annual estimates for the 2000–2001 to 2010–2011 periods.

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.

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:


Suggested Citation

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

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**Figure 1.** Total number of women (age ≥ 50) in the U.S. noninstitutionalized civilian population, 2000–2001 to 2010–2011

<table>
<thead>
<tr>
<th>Year</th>
<th>Population (in millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000–2001</td>
<td>42.7</td>
</tr>
<tr>
<td>2002–2003</td>
<td>45.5</td>
</tr>
<tr>
<td>2004–2005</td>
<td>47.8</td>
</tr>
<tr>
<td>2006–2007</td>
<td>49.9</td>
</tr>
<tr>
<td>2008–2009</td>
<td>52.4</td>
</tr>
<tr>
<td>2010–2011</td>
<td>55.2</td>
</tr>
</tbody>
</table>


**Figure 2.** Percentage of women (age ≥ 50) using major types of osteoporosis medications, United States, 2000–2001 to 2010–2011

Note: All Prescribed Osteoporosis Drugs include: anabolics [parathyroid hormone - PTH (teriparatide)] and antiresorptives [bisphosphonates (alendronate, risedronate, ibandronate, etidronate, and zolendronic acid); calcitonin; and selective estrogen receptor modulators SERMs (raloxifene)].

Figure 3. Average annual expenditures on osteoporosis medications among women (age ≥ 50), United States, 2000–2001 to 2010–2011

Note: All Prescribed Osteoporosis Drugs include: anabolics [parathyroid hormone - PTH (teriparatide)] and antiresorptives [bisphosphonates (alendronate, risedronate, ibandronate, etidronate, and zolendronic acid); calcitonin; and selective estrogen receptor modulators SERMs (raloxifene)].


Figure 4. Average annual per user expenditures on osteoporosis medications among women (age ≥ 50), United States, 2000–2001 to 2010–2011

Note: All Prescribed Osteoporosis Drugs include: anabolics [parathyroid hormone - PTH (teriparatide)] and antiresorptives [bisphosphonates (alendronate, risedronate, ibandronate, etidronate, and zolendronic acid); calcitonin; and selective estrogen receptor modulators SERMs (raloxifene)].