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Access To Care In Medicare HMOs, 1996

Elderly Americans give Medicare managed care a mixed assessment: The vast majority are satisfied with their care, but one in four would not recommend their plan to someone with a serious or chronic health problem.

by Lyle Nelson, Randall Brown, Marsha Gold, Anne Ciemnecki, and Elizabeth Docteur

Enrollment in Medicare managed care increased about 50 percent between the end of 1994 and the beginning of 1997. Although fewer than 11 percent of Medicare beneficiaries are now enrolled in health maintenance organizations (HMOs) in the Medicare risk program, the proportion is growing and may accelerate further as Congress debates Medicare financing reform. A key point of contention is whether Medicare managed care will restrict access to needed care by trying to control costs and improve access by better coordinating care for Medicare beneficiaries. In the most comprehensive national study of the Medicare HMO program to date, Randall Brown and colleagues concluded that Medicare HMOs use resources more efficiently, with fairly minor differences in access, quality, and beneficiary satisfaction compared with fee-for-service Medicare. Yet this study and others identify areas in which Medicare HMOs perform more poorly, particularly for some vulnerable subgroups such as the chronically ill. A better understanding of access to care in Medicare HMOs clearly is of interest, particularly because existing studies are now more than five years old and the Medicare HMO program has changed considerably since then.

This study provides a nationally representative access profile from the perspective of Medicare beneficiaries. It is based on a 1996 national survey of 3,080 Medicare managed care enrollees and disenrollees and provides information on access to care for the Medicare population in general and for vulnerable subgroups. Finally, it highlights lessons for strengthening the monitoring of these issues.

METHODS

SAMPLE DESIGN. We conducted a telephone survey of a stratified random sample of 3,080 Medicare beneficiaries who were enrolled in a Medicare managed care risk plan for at least two months during the year ending February 1996. We selected the sample from the Group Health Plan (GHP) file maintained by the Health Care Financing Administration (HCFA). We restricted the sample to beneficiaries who were enrolled for at least two months because we wanted to study access to care among beneficiaries who were likely to have had some experience in their plan.

The sample design was structured with sufficient sample sizes to provide relatively reliable estimates for vulnerable subpopulations and disenrollees. We stratified the sample by enrollment status, age, race, and plan size. We defined four strata based on enrollment status: continuous enrollees (those en-
rolled throughout the year), new enrollees (those who joined a risk plan within the past year), switchers (those who disenrolled from one risk plan and joined another), and disenrollees (those who returned to fee-for-service Medicare). We refer to the first three of these strata as current enrollees, since they were all enrolled in a risk plan as of 1 March 1996. We oversampled disenrollees and switchers to obtain adequate sample sizes for analysis.

Using data from the GHP file, we oversampled subgroups of particular policy interest: African Americans, the nonelderly disabled, and the oldest old (age eighty-five and older). We undersampled beneficiaries in the five largest Medicare risk plans—four in southern California and one in Miami—which together contain nearly one-third of all Medicare risk enrollees. This allowed us to obtain more precise estimates for newer plans and markets that will be more dominant in the program’s future.

SURVEY INSTRUMENT. The telephone survey asked detailed questions on access to care, service use, satisfaction with care, health status and conditions, and demographics. Although we built on questions from existing surveys, we also developed new items to tap important concepts of access that are ignored or poorly reflected in those surveys. We developed a conceptual framework for examining access in a managed care environment.

The survey was conducted during a twelve-week period that began 13 May 1996. Proxy respondents accounted for 12 percent of all interviews and 20 percent of those for the oldest old. The overall response rate was 64 percent, similar to that for other recent telephone surveys of Medicare beneficiaries. Respondents and nonrespondents had similar characteristics, but the response rate was lower for African Americans (60 percent), persons covered by Medicaid (53 percent), and the nonelderly disabled and oldest old (61 percent for each).

ANALYTIC METHODS. The analysis is based on data weighted to compensate for oversampling of selected strata and to provide nationally representative estimates of those enrolled in Medicare HMOs during the reference period. We used the SUDAAN software package to account for the stratified sample design and weighting in computing standard errors. The subgroup analyses included comparisons across groups that were defined by enrollment status and comparisons of vulnerable subgroups with others.

To the extent feasible, we compared access estimates from this study with estimates for the national Medicare fee-for-service population based on the 1994 Medicare Current Beneficiary Survey (MCBS). Fee-for-service observations were weighted to match the Medicare HMO population on age, race, and health status and were restricted to those in metropolitan areas, since 98 percent of Medicare risk enrollees live in such areas. Comparisons were limited by differences in design and content between the two surveys.

PROFILE OF MEDICARE HMO ENROLLEES

Medicare beneficiaries in the study population were most often continuous enrollees (63 percent), followed by new enrollees (29 percent), switchers (4.7 percent), and disenrollees to fee-for-service Medicare (2.8 percent). Of those who left their plan during the year for reasons other than death or plan termination, nearly two-thirds enrolled in another plan. In the total population, 76 percent paid no premium, and 83 percent had prescription drug coverage. Just under half cited costs and benefits as their most important reasons for enrolling.

More than half of all enrollees were in HMOs in California and Florida. Nearly one-third were enrolled in one of the five plans (out of 178 participating in the risk program) that had more than 100,000 Medicare enrollees. One-quarter had been enrolled for more than four years. The average duration of enrollment was lower for disenrollees (twenty-four months) than it was in general (thirty-six months). Although 31 percent of continuous enrollees were in plans outside of California, Florida, and Arizona, 57 percent of new en-
rollees were in plans outside of these states.

Of the weighted sample, 5.5 percent were disabled; 45 percent of current disabled enrollees were new enrollees. The oldest old accounted for 7.7 percent of the sample; 8 percent of the sample were African American, and 8 percent were Hispanic. Four percent were jointly eligible for Medicaid (dually eligible). Twenty percent had incomes under $10,000 per year, and 40 percent had incomes over $20,000 per year. Fewer than 1 percent were institutionalized.

ACCESS TO CARE

OVERVIEW OF SELECTED ACCESS MEASURES. The great majority of Medicare beneficiaries who are enrolled in risk plans report having no problems with access to care and are satisfied with their plans (Exhibit 1). Only 8 percent said that they had problems making appointments. Six percent reported that their primary care physician had not referred them to a specialist when they thought a referral was needed; more than half of these beneficiaries reported that the lack of a referral had no consequences. One percent said that their plan physician did not admit them to a hospital when they thought it was needed; 44 percent of these beneficiaries said that the lack of an admission had no consequences. Among those who had been hospitalized, 6 percent felt that their plan physician had discharged them from the hospital too soon; 70 percent of these beneficiaries reported some type of ad-

EXHIBIT 1
Selected Access And Satisfaction Measures For Medicare HMO Enrollees, 1996

<table>
<thead>
<tr>
<th>Access and satisfaction measure</th>
<th>Percent of sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Had trouble making appointments</td>
<td>8%</td>
</tr>
<tr>
<td>Not referred for specialist care desired</td>
<td>6%</td>
</tr>
<tr>
<td>Felt discharged too soon if hospitalized</td>
<td>6%</td>
</tr>
<tr>
<td>Used home health care but wanted more</td>
<td>&lt; 0.5%</td>
</tr>
<tr>
<td>Felt home health care was needed but did not receive it</td>
<td>17%</td>
</tr>
<tr>
<td>Able to see same physician for most scheduled visits</td>
<td>96%</td>
</tr>
</tbody>
</table>

Rating of overall health care covered by plan:

- Excellent: 43%
- Very good/good: 53%
- Fair/poor: 4%

Would recommend plan to family/friends:
- Generally: 91%
- With serious/chronic health problems: 74%

NOTES: Sample size = 3,080. HMO is health maintenance organization.
verse consequence, such as a worsening of their condition or a delay in their recovery (42 percent), or the need to arrange for home care or nursing home care (19 percent).

Beneficiaries were more likely to report problems with access to home health care. Of the 8 percent who received home health care through their plan during the past year, 17 percent felt that they needed more care than the plan provided. However, fewer than half a percent felt that they needed home health care from their plan but did not receive it. Seventy percent of beneficiaries who felt that they needed more home health care than their plan provided reported some type of adverse consequence.

Most Medicare beneficiaries who are enrolled in HMOs are satisfied with the overall health care covered by their plan and with the specific dimensions of care we examined (Exhibit 1). Only 4 percent said that they intended to disenroll from their plan or wanted to disenroll but felt that they could not do so for financial reasons.

**ACCESS AND INTEGRATION OF NEW ENROLLEES.** Nearly all of the new enrollees (including plan switchers) reported that they were provided with enough information on how to obtain care. Of the 25 percent who had questions or wanted more information, 69 percent obtained the information without any problem, 11 percent said that they did not try to obtain it, and 20 percent experienced problems or were unsuccessful. Ninety-six percent had a primary care physician in the plan, and more than 80 percent selected their physician rather than being assigned a physician by the plan. Forty-two percent of recent enrollees kept the same primary care physician as they had before joining their plan—a nearly twofold increase from 1990. Only 44 percent with a new primary care physician were encouraged to come in for an exam or assessment after enrolling.

**USE OF PREVENTIVE SERVICES.** Compared with beneficiaries in fee-for-service Medicare, those enrolled in risk plans were more likely to have received a flu shot during the past winter (66 percent versus 58 percent) and (among women) more likely to have received a mammogram in the past year (62 percent versus 39 percent). The HMO/fee-for-service differential for flu shots and mammograms was greatest among beneficiary subgroups that were least likely to receive them in the fee-for-service sector. Thus, for flu shots, the differential was greatest for the nonelderly disabled (51 percent versus 36 percent), African Americans (53 percent versus 37 percent), and persons with low incomes (62 percent versus 47 percent).

**ACCESS FOR VULNERABLE SUBGROUPS.** Vulnerable subgroups—the nonelderly disabled, the oldest old, persons with functional impairments, and persons in fair or poor health or with worsening health—were much more likely than the general population to report access problems (Exhibit 2). Differences are particularly striking for home health care, an area in which some vulnerable subgroups are three or more times more likely to report problems. In addition, beneficiaries in vulnerable subgroups are more likely to disenroll from HMOs and enroll in fee-for-service Medicare. Relative to an aggregate disenrollment rate of less than 3 percent, disenrollment rates were higher for the nonelderly disabled (4.7 percent), the oldest old (4.2 percent), African Americans (4.6 percent), persons in fair or poor health (4.7 percent), and persons with functional impairments (5.5 percent). These disparities may be accounted for in part by differences in the length of enrollment across subgroups, because disenrollment is higher early in enrollment, and new enrollees account for a particularly large share of some subgroups, such as the disabled.

To control for differences between vulnerable subgroups and others in relative need for care, we computed the percentage of benefici-
aries who reported access problems among those we defined as having a need for particular services. Enrollees were considered to be in need of a service if they either received the service or did not receive the service but felt that they needed it. Controlling for differences in need in this way greatly reduces (and in some cases eliminates) the difference between vulnerable subgroups and others in the proportion who reported access problems. However, in the case of home health care, the service for which we found the greatest unmet need, the nonelderly disabled were still twice as likely as beneficiaries ages sixty-five to eighty-four to report access problems (Exhibit 3). In general, the higher probability of reported problems obtaining specialty referrals and inpatient care among vulnerable subgroups appears to be only partially related to a greater need for care among such groups.

Despite their greater likelihood of encountering access problems, the vulnerable subgroups were just as likely as others to say that they would recommend their plan to a family member or friend with a serious or chronic health problem (70–75 percent) (Exhibit 2).

African American beneficiaries were no more likely than white beneficiaries to report access problems. This finding is noteworthy, given the evidence that African Americans are more likely than whites to experience access problems in fee-for-service Medicare. However, African American beneficiaries were much less likely than white beneficiaries to be

### EXHIBIT 2
Selected Access And Satisfaction Measures For Subgroups Of Medicare HMO Enrollees, 1996

<table>
<thead>
<tr>
<th>Access and satisfaction measure</th>
<th>All beneficiaries (N = 3,080)</th>
<th>Nonelderly disabled (n = 419)</th>
<th>Oldest old (85+) (n = 390)</th>
<th>African Americans (n = 456)</th>
<th>In fair or poor health (n = 603)</th>
<th>In worse health than one year ago (n = 466)</th>
<th>Has functional impairments (n = 450)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not referred for specialist care enrollee thought was needed</td>
<td>6.2%</td>
<td>9.5%&lt;sup&gt;a&lt;/sup&gt;</td>
<td>5.8%</td>
<td>4.4%</td>
<td>8.8%</td>
<td>11.4%&lt;sup&gt;b&lt;/sup&gt;</td>
<td>4.7%</td>
</tr>
<tr>
<td>Felt discharged too soon if hospitalized</td>
<td>6.2</td>
<td>10.0</td>
<td>9.8</td>
<td>8.3</td>
<td>7.0</td>
<td>8.3</td>
<td>13.2&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Did not receive home health care enrollee thought was needed&lt;sup&gt;c&lt;/sup&gt;</td>
<td>1.6</td>
<td>4.1&lt;sup&gt;b&lt;/sup&gt;</td>
<td>5.4&lt;sup&gt;b&lt;/sup&gt;</td>
<td>2.7</td>
<td>5.6&lt;sup&gt;b&lt;/sup&gt;</td>
<td>6.4&lt;sup&gt;b&lt;/sup&gt;</td>
<td>7.6&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>Rate overall health care covered by plan as excellent</td>
<td>43.2</td>
<td>41.1</td>
<td>36.7&lt;sup&gt;a&lt;/sup&gt;</td>
<td>26.5&lt;sup&gt;b&lt;/sup&gt;</td>
<td>32.3&lt;sup&gt;b&lt;/sup&gt;</td>
<td>38.0</td>
<td>38.9</td>
</tr>
<tr>
<td>Would recommend plan to family/friends with serious or chronic health problems</td>
<td>74.4</td>
<td>75.4</td>
<td>70.4</td>
<td>73.8</td>
<td>69.9</td>
<td>74.5</td>
<td>74.0</td>
</tr>
</tbody>
</table>

**Source:** Mathematica Policy Research/Physician Payment Review Commission survey of Medicare HMO enrollees, 1996.

**Note:** The counterparts for the vulnerable subgroups are as follows: beneficiaries ages sixty-five to eighty-four (for the nonelderly disabled and the oldest old); whites; enrollees in excellent health; enrollees whose health is the same as a year ago; and enrollees without functional impairments.

<sup>a</sup> Difference between vulnerable subgroup and counterpart is significant at the .05 level.

<sup>b</sup> Difference between vulnerable subgroup and counterpart is significant at the .01 level.

<sup>c</sup> Defined as the percentage of enrollees who either (1) received home health care from their plan but felt that they needed more, or (2) did not receive any home health care from their plan but felt that they needed such care.
satisfied with the overall health care covered by their plans (27 percent rated their care as excellent, compared with 45 percent of whites) and were less satisfied than whites were with each dimension of care we examined. However, African Americans were as likely as other beneficiaries to recommend their plan. African Americans in the fee-for-service sector also were less satisfied than whites were with their care.

**ACCESS FOR DISENROLLEES.** Fewer than 3 percent of persons enrolled in Medicare risk plans during the one-year sampling period disenrolled and returned to fee-for-service Medicare. Disenrollees to fee-for-service were more likely than those in Medicare managed care to report access problems and less likely to be satisfied with their plans. They are a heterogeneous group, however, varying both in their experiences in their plans and their reasons for disenrolling. Fourteen percent of disenrollees reported that their primary care physician had not referred them to a specialist when they thought it was needed (versus 6 percent for current enrollees), and 57 percent said that they would recommend their plan to a family member or friend (versus 91 percent for current enrollees). About a quarter of disenrollees who returned to fee-for-service said that they disenrolled because they moved out of their plan’s service area. The other main reasons for returning to fee-for-service were dissatisfaction with plan physicians (26 percent), financial issues (18 percent), and access problems (10 percent).

**COMPARISONS WITH MEDICARE FEE-FOR-SERVICE.** Medicare beneficiaries enrolled in HMOs appear to be more likely than fee-for-service enrollees to report access problems, although the size of the difference probably is overstated because the measures for the two sectors differ. Twelve percent of

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**EXHIBIT 3**

Relative Likelihood Of Reporting Problems With Access To Home Care, Adjusted And Unadjusted Estimates For Vulnerable Subgroups Of Medicare HMO Enrollees, 1996

<table>
<thead>
<tr>
<th>Ratio of vulnerable subgroup to counterpart</th>
<th>Unadjusted</th>
<th>Adjusted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonelderly disabled</td>
<td>2.4a</td>
<td>2.4a</td>
</tr>
<tr>
<td>Oldest old (age 85 and older)</td>
<td>4.5a</td>
<td>4.5a</td>
</tr>
<tr>
<td>Income under $10,000</td>
<td>2.3b</td>
<td>2.3b</td>
</tr>
<tr>
<td>Health status fair/poor</td>
<td>6.2a</td>
<td>6.2a</td>
</tr>
<tr>
<td>Health status worse than one year ago</td>
<td>9.1a</td>
<td>9.1a</td>
</tr>
<tr>
<td>Functionally impaired</td>
<td>8.4a</td>
<td>8.4a</td>
</tr>
</tbody>
</table>


**NOTES:** Ratio of vulnerable subgroup to counterpart in likelihood of reporting access problems. Counterparts for vulnerable subgroups are beneficiaries ages sixty-five to eighty-four (for the nonelderly disabled and the oldest old); those with incomes of more than $20,000; those whose health status is excellent; those whose health is the same as a year ago; and those who are not functionally impaired. Adjusted measures include only enrollees who used or perceived a need for home health care in the past year.

a Difference between vulnerable subgroup and counterpart is significant at the .01 level.
b Difference between vulnerable subgroup and counterpart is significant at the .05 level.
the HMO sample reported one or more specific access problems in the past year, compared with 4 percent in the fee-for-service sector. The fee-for-service estimate is based on a single question in the MCBS about whether beneficiaries had any trouble obtaining health care they wanted or needed in the past year, whereas the HMO estimate is computed as a percentage of those who reported one or more access problems covered in a series of questions about particular problems.

Vulnerable subgroups typically have more access problems than other beneficiaries have in Medicare fee-for-service. Our study shows that this also happens in Medicare HMOs (Exhibit 4). The reported incidence of access problems is higher in HMOs. However, our results indicate that, except for the oldest old, the differences between vulnerable subgroups and their less vulnerable counterparts in the likelihood of encountering access problems are smaller in managed care than in the fee-for-service sector.

**DISCUSSION**

This study provides the most comprehensive and nationally representative profile of access to care in Medicare managed care available today. Its main strengths relative to previous studies rest in the broader range of access measures included and in the targeted analysis of beneficiary subgroups considered most vulnerable to access problems. Such analysis is not now feasible with data from the MCBS because the HMO sample is too small (although it is being expanded). There also are inconsistencies and limitations in how the MCBS measures access to care for HMO and

<table>
<thead>
<tr>
<th>EXHIBIT 4</th>
<th>Comparison Of Reported Access Problems, By Vulnerable Subpopulations In Medicare HMOs And In The Fee-For-Service Sector, 1996</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All beneficiaries</td>
</tr>
<tr>
<td>Percent of fee-for-service beneficiaries who had trouble getting care in past year</td>
<td>4.0%</td>
</tr>
<tr>
<td>Percent of HMO enrollees who have ever experienced access problems in their plan</td>
<td>13.3</td>
</tr>
<tr>
<td>All enrollees</td>
<td>13.3</td>
</tr>
<tr>
<td>Enrolled for one year or less</td>
<td>12.0</td>
</tr>
<tr>
<td>Likelihood of access problems by vulnerable subgroups relative to their counterparts (ratio)</td>
<td></td>
</tr>
<tr>
<td>Fee-for-service beneficiaries</td>
<td>–</td>
</tr>
<tr>
<td>HMO enrollees</td>
<td>–</td>
</tr>
<tr>
<td>All</td>
<td>–</td>
</tr>
<tr>
<td>Enrolled for one year or less</td>
<td>–</td>
</tr>
</tbody>
</table>

**SOURCES:** Mathematica Policy Research/Physician Payment Review Commission survey of Medicare HMO enrollees.

Fee-for-service estimates from 1994 Medicare Current Beneficiary Survey.

a Low income is defined as annual household income of less than $10,000.

b For fee-for-service beneficiaries, the access measure shown is the percentage who reported having trouble getting health care they wanted or needed within the past year.

c For HMO enrollees, the access measure shown is the percentage who reported one or more of the following problems since enrolling in their plan: not being referred for desired specialist care, not being admitted to a hospital when desired, being discharged from a hospital before feeling ready, not receiving the home health care desired, experiencing delays obtaining care, and experiencing any other problems obtaining care.

d The counterparts to vulnerable subgroups are as follows: beneficiaries ages sixty-five to eighty-four (counterparts to the nonelderly disabled and the oldest old); whites (for African Americans); those with an annual household income of more than $20,000 (for those with low income); and those in excellent health (for those in fair or poor health).
fee-for-service enrollees. The results of our study provide a mixed but generally encouraging picture. The great majority of Medicare managed care enrollees do not report access problems, are relatively satisfied with the care they receive, and would recommend their plan. This holds true for vulnerable subgroups as well as for the population in general. However, these findings are based on data from persons who voluntarily joined an HMO, attracted by the lower out-of-pocket costs and greater benefits.

There are some areas, however, in which HMOs can and should provide better access than they do now. Access to home health services is particularly problematic, which is consistent with other studies that find fewer visits and poorer outcomes for home health recipients in HMOs. As in fee-for-service plans, access for vulnerable subpopulations is worse than that for other enrollees. Although definitive comparisons of access in HMOs vis-à-vis fee-for-service plans are not possible, some findings, such as those for the oldest old and persons in fair or poor health, are of particular concern. The fact that one in four beneficiaries would not recommend their plan to someone with a serious or chronic health problem is also a potential concern. Our findings suggest that HMOs need to address the needs of frail and more vulnerable Medicare beneficiaries more effectively.

Finally, the results of this study illustrate the utility of timely, high-quality data in considering public policy concerns, particularly when they involve controversial issues such as Medicare managed care. Having nationally representative data, from surveys or other sources, allows concerns to be systematically tested against experience. Such data provide a rich base for debating legitimate differences in policy perspectives and help to avoid “policy by anecdote.” Yet few reliable sources of information exist to inform a policy debate that is highly charged with emotion. This study illustrates why representative and timely data that support standardized and appropriate comparisons of Medicare beneficiaries in HMOs and fee-for-service plans are essential to effective monitoring, oversight, and policy making.

This study was conducted under a contract from the Physician Payment Review Commission (PPRC) to Mathematica Policy Research (MPR). The views expressed are those of the authors, and no endorsement by the PPRC is intended or should be inferred. Several staff were critical to this study. At MPR, Anna Aizer served as project analyst and manager, Karen CyBulski managed the development and conduct of the survey, Sara Yang provided the main programming support, and Sharon Clark was lead secretary. At the PPRC, Sally Trude contributed to the development of comparison estimates from the Medicare Current Beneficiary Survey, and David Colby provided guidance on project design. Elsewhere, Lucy Rose Fisher, Marshall McBean, Sheldon Retchin, and Shoshanna Sofaer consulted on the design of the survey instrument.

NOTES
6. If we had included beneficiaries enrolled for only one month in our sample, the rate of disenrollment to fee-for-service would increase from 2.8 percent to 3.3 percent. We excluded beneficiaries who were in a plan for only one month (14 percent of disenrollees during the year), since many of these persons may not have realized that they had enrolled or may have changed their mind about enrolling before having any real experience obtaining care within the plan (frequently because they had not realized that they were required to obtain care only from HMO-affiliated physicians).

8. Our disenrollment figures are lower than those recently reported in U.S. General Accounting Office, Medicare: HCFA Should Release Data to Aid Consumers, Prompt Better HMO Performance, GAO/HEHS-97-23 (Washington: GAO, October 1996). The GAO presented only plan-specific estimates of disenrollment (which vary greatly) and included only plans in California and Florida. The GAO estimates did not distinguish between switching between risk plans and disenrolling to fee-for-service, and they included beneficiaries whose disenrollment date was identical to their enrollment date (those who canceled their HMO membership before their effective enrollment date) and those who were enrolled for only one month. Such persons were excluded from our study for the reasons described above.


10. These estimates were adjusted to account for differences between HMO enrollees and fee-for-service beneficiaries in age, race, and health status. However, the difference in mammography rates may be attributable in part to differences between the two groups in the age distribution of women in the sixty-five to eighty-four age range, since some guidelines do not recommend annual mammograms for women over age seventy-five.


12. Nelson et al., “Access to Care in Medicare Managed Care.”


14. Docteur et al., “Shifting the Paradigm.”

15. Ibid.