

APPENDIX B

DEVELOPMENT OF MCBS AND MEPS ESTIMATES FOR THIS REPORT

This report uses 1996 Medicare Current Beneficiary Survey (MCBS) data to estimate prescription drug coverage, utilization, and spending for Medicare beneficiaries. 1996 Medical Expenditure Panel Survey (MEPS) data are used to provide estimates for the non-Medicare population. The MEPS surveyed a sample of the US civilian, noninstitutionalized population, including Medicare beneficiaries. MEPS data could therefore have been used for both the Medicare and non-Medicare groups.

There are several reasons for using the MCBS data instead of MEPS for the Medicare population. MCBS has a much larger sample of Medicare beneficiaries than MEPS, 10,869 used for this study, as opposed to 2,892 in the MEPS panel. This allows more reliable estimates for subgroups of the Medicare population defined by demographic or health-related factors. In addition, MCBS has been conducted continuously since 1992. It therefore allows some analysis of trends over time. MEPS began in 1996; its predecessor, the 1987 National Medical Expenditure Survey (NMES) was so different in its data collection for prescription drug spending and coverage that meaningful comparisons are not possible. The one exception where MEPS was used instead of MCBS for estimates relating to Medicare beneficiaries is the analysis of prices in Chapter 3. As discussed below, MEPS had data not available in MCBS for comparing drug prices.

Data collection and estimation procedures under the two surveys are different in a number of respects. This means that, while the MCBS results for the Medicare population and the MEPS results for the non-Medicare population are often quite similar, they cannot be directly compared. In addition, MCBS estimates for the Medicare population are different from the Medicare estimates that would have been produced if MEPS had been used. Use of MEPS results would not have affected the most important findings of this report: that a large share of the Medicare population is without drug coverage, that beneficiaries without coverage receive fewer and less costly prescription drugs, and that they pay higher prices for the drugs they receive than are paid by beneficiaries with coverage for the same drugs. Estimates of the magnitude of these effects would, however, have been different. The following is a brief overview of how coverage, utilization, and spending are estimated under MCBS and MEPS, and of how their findings differ.

ESTABLISHING COVERAGE

Both the MCBS and the MEPS household survey asked participants if they had prescription drug coverage. MEPS had a second source of information: for respondents who named the pharmacies they used and gave interviewers permission to contact the pharmacy (the pharmacy follow-back), it was possible to determine the sources of payment for prescriptions filled at participating pharmacies. Sometimes, when an individual reported that he or she did not have drug coverage, it was nevertheless found through the pharmacy component that an insurer or public program had in fact paid for one or more prescriptions. In this case, the person was deemed to have drug coverage through the source of payment for the prescription.

MCBS did not collect information from pharmacies, but did collect information from respondents about each of the prescriptions they received during the year and the sources of payment for those prescriptions. If an individual reported no drug coverage but nevertheless reported a third-party payment for a prescription, the individual was assigned to drug coverage. However, because MCBS relied almost entirely on respondents' own reports,¹ it found fewer such people with coverage than MEPS found through its separate pharmacy component.

A second key difference between MEPS and MCBS is in the treatment of Medicaid beneficiaries and Medicare HMO enrollees. Some Medicaid beneficiaries are QMBs and SLMBs without a drug benefit, and not all Medicare HMOs provide drug coverage. MEPS is not able to distinguish whether Medicare HMO enrollees or Medicaid recipients have coverage; all of these beneficiaries are deemed to have coverage in MEPS. For these populations, MCBS distinguishes among those who did and did not have a drug benefit. In the future, it may be possible to use Medicare administrative data on health plan enrollment to determine drug coverage among Medicare HMO enrollees surveyed in the MEPS.

Finally, MCBS uses a consistency edit that treats as noncovered those beneficiaries who reported having drug coverage but paid more than \$250 out of pocket for drugs and reported no insurance payment, while MEPS leaves these beneficiaries in the covered category.

Table B-1 shows the proportion of Medicare beneficiaries with different types of drug coverage for at least one month as estimated by MEPS and MCBS. The MEPS numbers have been adjusted to account for the difference between MEPS and MCBS in the

¹ The one exception was Medicare HMO coverage, which was identified through HCFA enrollment records.

treatment of Medicaid recipients and Medicare HMO enrollees, and to account for the consistency edit that MCBS uses and MEPS does not use.² The adjustments are: a .8% percent reduction from employer and a .3% reduction from nongroup for the “consistency edit” and a .6% reduction in Medicare Risk HMO and a 1.4% reduction in Medicaid to account for the proportion of beneficiaries in those categories who lack drug coverage. The lower bound of the 95% confidence interval for the adjusted MEPS estimate is 71.6 percent of beneficiaries with coverage. The upper bound of the MCBS estimate is 69.7 percent. A statistically significant difference, therefore, remains between the MCBS estimate and the adjusted MEPS estimate.

Table B-1. Comparison of Sources of Coverage Estimates for MEPS and MCBS

	MEPS	MCBS
Employer	33%	32.3%
Private nongroup and other private	13.2%	11.3%
Medicare risk HMO	10.4%	10.0%
Medicaid	10.9%	11.8%
Veterans and other	6.1%	3.3%
Total with coverage for at least one month during 1996	73.6%	68.8%
None	26.4%	31.2%
Total	100.0%	100.0%

Note: Percents may not add to 100 because of rounding.

Source: Center for Cost and Financing Studies, Agency for Healthcare Research and Quality: Medical Expenditure Panel Survey Household Component, 1996 and Health Care Financing Administration, Medicare Current Beneficiary Survey, 1996.

Much of the remaining difference is due to the larger number of beneficiaries who failed to report coverage but were identified as covered by MEPS through the pharmacy follow-back. Most of the beneficiaries assigned to the covered category in this way were classified as either having private nongroup insurance or as being covered through the Veterans Administration.

² The MEPS estimates are adjusted for two reasons. First, the adjusted MEPS estimates can be directly compared to the MCBS estimates. Second, the unadjusted MEPS estimates would overstate the percentage of beneficiaries who have drug coverage.

As was noted in chapter 1, the VA does not actually provide insurance. It supplies prescription drugs directly, at no cost or nominal cost, to qualifying veterans whose prescriptions are written by VA physicians and filled at VA pharmacies. While this benefit is undoubtedly an important source of financial assistance for those who receive it, it cannot be described as insurance in the same sense as other forms of drug coverage. However, it is counted as coverage for the purposes of this study. Private nongroup coverage is insurance, but it is the least generous and the most costly to beneficiaries of the major types of coverage. Moreover, it is the least stable: as table 1-2 indicated, beneficiaries with this type of coverage are the most likely to be without protection at some time during the year.

In summary, after correction for the likely overstatement of Medicare HMO and Medicaid drug coverage in MEPS, there remains a small but statistically significant difference in the MEPS and MCBS estimates of the extent of drug coverage in the Medicare population. Much of the difference is attributable to estimates for types of coverage that may not be meaningful or stable. The MCBS data are used in this report because they allow a closer look at the characteristics of the covered and noncovered populations and at trends over time.

ESTIMATES OF UTILIZATION AND SPENDING

Gathering information through household surveys about prescription drug use and spending is much more difficult than for some other kinds of medical services. While most people can readily recall, for example, whether they were hospitalized in the last year and for what reason, filling a prescription is not so memorable an event. People who filled only one or two prescriptions may not remember them at all. Those who had many medications may not recall just how many they had or may not be able to name every drug they were taking. Even people who can accurately report what drugs they used may not be able to tell what those drugs cost. This is especially true when the drug cost is covered by an insurer or a public program; the respondent may know only the amount of his or her required copayment, not the total charge.

The MEPS and MCBS surveys use a variety of techniques to overcome these barriers to collection of complete and accurate information about prescription drugs. The following is a brief overview of how the two surveys go about answering two key questions:

- How many prescriptions did participants fill during the period covered by the survey?

- What was paid for those drugs, including both out-of-pocket payments by the respondents and payments by insurers or other third parties?

Utilization Estimates

The MCBS and the MEPS household component both involve multiple rounds of interviews with each respondent. In each interview, the respondent is asked about services used in the period since the last interview. MEPS separately surveys pharmacies named by respondents, and can thus supplement the information gathered in the household survey. Because MCBS has no pharmacy component, it must collect all utilization and price information through the household survey.

MCBS uses a variety of devices to promote fuller reporting by participants. Between interviews, participants are asked to keep track of the services they used on a calendar and to retain bills, receipts, check stubs and other relevant documentation. For a filled prescription they are asked to save and bring to the interview the actual bottle, the package it came in, and any receipts or other statements they received with the prescription. To further aid recall, the interviewer in each round has information about the drugs reported in the previous interview, and thus can ask whether the respondent is still taking the same drugs. Still, the information is probably incomplete. Some respondents may not keep the requested records, or the proxy who actually participates in the survey for individuals unable to be interviewed may not have full information.

MEPS collects less information through the household survey. For example, charge and payment data are not obtained from participants who report that their insurance pays the pharmacy directly. Instead, MEPS obtains some information through the pharmacy component. Each participant who reports having a prescription is asked to identify the pharmacy that filled it and to give permission for that pharmacy to share information. Permission was obtained for 73 percent of possible person-pharmacy pairs, and pharmacies responded to data requests for 67 percent of these pairs. Thus there is information from pharmacies for about half the instances in which a participant named a specific pharmacy.

The pharmacy component provided more detailed data on specific drugs used and on their costs, but it did not actually increase MEPS estimates of total drug utilization. It was expected that pharmacies would sometimes report filling more prescriptions for an individual than the individual had reported in the household survey. While this sometimes occurred, aggregate utilization estimates derived from the household data alone are actually larger than those derived from the pharmacy survey alone. Thus there remains the possibility of some undercounting of total prescriptions. However,

aggregate MEPS data benchmark fairly well to external data on prescription drug utilization.

The MEPS data, based on household responses supplemented with some reporting from pharmacies, can be compared to IMS data, which are based on pharmacy audits. MEPS estimates a total of 2.1 billion prescriptions, excluding free samples, for the noninstitutionalized population in 1996. IMS data show total pharmacy prescription volume of 2.41 billion, about 15 percent more. However, the IMS data include prescriptions for people in institutions, including the 1.6 million people who were in nursing homes in 1996 and who are often heavy users of prescription drugs. MEPS excluded people in institutions (along with individuals in the military, prisoners, and non-resident individuals). The difference in populations covered may account for much of the difference in total prescription counts.

For the Medicare population, MEPS reports 9.8 percent more prescriptions than does MCBS. The two surveys are almost identical in their estimates of the proportion of beneficiaries who received any prescription during the year; the difference is chiefly in their estimates of the annual number of prescriptions for each person who received any prescription drug. A portion of this difference is attributable to somewhat different treatment of diabetic supplies in MEPS and MCBS. The MEPS estimate includes expenditures for insulin and diabetic supplies totaling nearly \$2 billion. MCBS includes insulin in prescription drug expenditures, but excludes diabetic supplies. Insulin purchases do not require a prescription, but a prescription is generally needed to receive third party payments.

Because the focus in this report is on relative utilization by the covered and noncovered populations, whether the MCBS prescription count is complete is less important than whether the possible undercount is more serious for one or the other of these groups. This is difficult to ascertain, however, because of the differences in assignment of coverage status between MEPS and MCBS. MCBS reports more prescriptions than MEPS for beneficiaries without coverage and fewer for beneficiaries with coverage. This is probably partially attributable to the fact that MCBS treats as noncovered some beneficiaries who used prescription drugs and would have been assigned coverage under MEPS on the basis of a third-party payment. Since people with coverage tend to have higher utilization than those without coverage, having people with coverage in the noncovered category will tend to raise estimates of average spending and utilization for the noncovered category.

Spending Estimates

MEPS data for 1996 indicate that 27 percent of people who used prescription drugs paid for those drugs in full at the time they received them.³ Most people with public or private coverage pay only a copayment or coinsurance amount. (Exceptions include people who have not yet met a deductible or who have exceeded a cap on their coverage and people who have an indemnity plan, which reimburses the policyholder instead of the pharmacy.) As a result, household survey data alone can provide cost information for only a portion of all prescriptions.

Because MEPS has a pharmacy component, it can obtain full price information for prescriptions paid for by third parties. As noted earlier, however, pharmacy survey responses were not always available. When neither the individual nor a pharmacy provided price data for a prescription, the price had to be imputed through statistical matching: a total price was assigned to the prescription based on price data for the same drug furnished to a similar individual. There were also instances in which a total price was available for the prescription, but the amounts paid by the insurer and/or the individual were missing. Again, values were imputed for each such prescription.

MCBS also uses a process of imputation in cases in which household respondents were unable to supply price and payment information. Because MCBS has no pharmacy component, imputation is needed for more prescriptions than under MEPS, and the method of assigning prices is different.⁴ The MCBS average price per non-Medicaid prescription, \$35.23, is quite close to the average price of \$35.90 found by MEPS for Medicare beneficiaries without Medicaid.⁵ However, because MCBS counts fewer prescriptions per beneficiary using prescription drugs, its aggregate spending estimates are lower than MEPS estimates for Medicare beneficiaries.

Because the process of imputation leads to some potential measurement errors in comparing prices paid for a particular drug by individuals with different coverage

³ IMS Health data for 1996 indicate that about 33 percent of prescriptions are paid for fully in cash at the time they are filled.

⁴ For each drug reported by a participant, MCBS must first establish exactly what drug was received and in what quantity. It then establishes, using First Data Bank data, an average wholesale price (AWP) for the specific drug. Finally, it must estimate the retail price charged for the prescription by applying a markup factor to the AWP. Factors vary according to the source of payment for the drug—cash, Medicaid, or other third party—and also according to the range of the wholesale unit price, because pharmacies tend to charge higher markups for drugs with a lower AWP.

⁵ The difference in price estimates for beneficiaries with Medicaid is larger, because MCBS reduces prices to account for manufacturer rebates to states, while MEPS does not.

statuses, all the price comparisons in chapter 3 are based on MEPS drug purchases for which the price was established through a direct match of pharmacy and household survey information. However, for the spending estimates in chapter 2, both the MCBS and the MEPS data used include prescriptions for which prices were imputed. Dropping all prescriptions for which prices were imputed would have left nationally unrepresentative populations and samples too small to estimate aggregate spending differences for different subgroups. Imputation is designed to generate accurate aggregate estimates, but may misrepresent pricing, especially for individual drugs.

It should be emphasized that all of the MEPS spending information, and most of that under MCBS, reflects only the amounts paid to pharmacies.⁶ These amounts are not adjusted for any rebates that may be paid by the manufacturer to the insurer, because these rebates are generally not reflected in the prices charged at the point of sale. There is one exception: under MCBS, but not MEPS, spending data for Medicaid beneficiaries are reduced to reflect rebates received from manufacturers by state Medicaid programs. Rebate estimates are derived from state financial reports to HCFA. Thus, all other things being equal, we would expect aggregate spending estimates for MCBS to be somewhat lower than for MEPS.

Effects of Coverage Estimates

As was discussed earlier, MEPS produces higher estimates of Medicare beneficiaries who had drug coverage than MCBS for three basic reasons. First, MEPS assigns coverage to larger numbers of people who did not report having drug coverage but who were found to have a third-party payment for a prescription. Second, MEPS treats all Medicaid and Medicare risk HMO enrollees as having drug coverage, although in fact not all do. Third, MCBS screens out beneficiaries whose reported coverage is inconsistent with their payment history. Each of these differences has potential implications for estimates of relative spending by covered and noncovered beneficiaries.

While the availability of payment-source data from pharmacies increases the coverage estimates under MEPS relative to those under MCBS, the method necessarily misses people with drug coverage who failed to report it *and* who did not have any drug expenditure during the year. These people remain in the noncovered group, while the people assigned to coverage on the basis of a drug expenditure are by definition all utilizers of drugs. This biases utilization and spending estimates upward for the

⁶ This term includes any entity furnishing outpatient prescription drugs to noninstitutionalized individuals, including retail pharmacies, outpatient pharmacies within hospitals, HMOs, or other facilities, and mail-order suppliers.

population treated as covered and downward for the noncovered group, widening differences between the two groups.

This effect is partially offset by the MEPS assignment of drug coverage to all Medicaid beneficiaries and Medicare HMO enrollees. MCBS finds lower utilization by beneficiaries in these groups who did not have a drug benefit. Their inclusion in the MEPS counts of covered people thus depresses the MEPS estimates of spending for people with coverage.

Finally, MCBS treats as noncovered those beneficiaries who reported having coverage but paid more than \$250 out of pocket and reported no insurance payment, while MEPS leaves these beneficiaries in the covered category. The effect is to raise the MEPS estimates of out-of-pocket spending for covered people and to lower the estimates for noncovered people. This effect does not appear to be very large.

In combination, these factors mean that MEPS data show larger utilization and spending differences between covered and noncovered beneficiaries than those shown in the MCBS data used in chapter 2. This would merely reinforce the key point of that chapter, that insurance has an important effect on use of prescription drugs. The MEPS data would also show a larger proportion of covered beneficiaries, and a smaller proportion of noncovered ones, receiving any prescription drugs at all.

MEPS and MCBS also differ in their estimates of out-of-pocket spending by Medicare beneficiaries. They are close in their estimates of the proportion of total spending that is paid out of pocket, 47 percent under MCBS and 50 percent under MEPS. However, MCBS finds beneficiaries with coverage paying about 33 percent of their own expenses, compared to 43 percent under MEPS. This difference is partially attributable to the differences in coverage estimates described above. However, the difference persists for groups, such as those with employer coverage, for whom the MEPS and MCBS coverage estimates are quite close. Further investigation will be needed to fully account for this difference. Use of the MEPS data would have shown smaller differences in out-of-pocket spending for people with and without coverage than are shown in chapter 2. As a corollary, however, MEPS data show that many people who have coverage have insurance that leaves them exposed to high out-of-pocket costs.

MEPS Price Data

It should be emphasized that, while some aspects of the MEPS method of assigning coverage may introduce potential biases into its estimates of relative utilization by covered and noncovered beneficiaries, there is no reason to believe that chapter 3 overstates the price differences for the two groups. It was noted earlier that, while

MEPS treats as having drug coverage people who failed to report coverage but had a third-party payment, there was no way of identifying people who failed to report their coverage and who received no drugs during the year. For the purpose of pricing comparisons, the omission of the latter group from the covered category does not affect the results (since they had no prescription to price). There does remain the issue of treating all Medicaid beneficiaries and Medicare HMO enrollees as having drug coverage. Some noncovered people in these populations have been included in the covered category. However, because people without coverage routinely pay more for their prescriptions than people with coverage, the probable result is that the MEPS data understate rather than overstate price differentials for the covered and noncovered.