

Benchmarking Medicare Managed Care Plan Enrollment Estimates from the Medical Expenditure Panel Survey and Administrative Enrollment Files from the Centers for Medicare & Medicaid Services

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ABSTRACT

For many Medicare policy research studies and analyses, such as those comparing patient outcomes by type of health care delivery system, it is useful to distinguish between outcomes for beneficiaries enrolled in Medicare managed care plans and those with fee-for-service coverage. This working paper benchmarks estimates of Medicare managed care from the Medicare Expenditure Panel Survey (MEPS) and administrative data from the Centers for Medicare & Medicaid Services (CMS) for 1996 through 2005. Estimates of Medicare managed care enrollment from round 1 of the MEPS for 1996 - 1997 and 2000 - 2005 benchmark reasonably well with those from administrative data from CMS. In addition, estimated distributions of Medicare managed care enrollees by age, sex, self-reported health status, and race/ethnicity from MEPS benchmark well to those from the Medicare Current Beneficiary Survey.

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Introduction

For many policy research studies and analyses about Medicare, it is useful to distinguish between outcomes for beneficiaries enrolled in Medicare managed care plans and those with fee-for-service coverage. For instance, unless information about beneficiary enrollment in Medicare managed care plans is available, studies cannot compare how drug expenditures or satisfaction with prescription drug coverage differ between beneficiaries enrolled in Medicare Advantage managed care plans and those in stand-alone Part D plans or employer-sponsored supplemental plans.

The most comprehensive sources of individual-level data on health care spending, use, and type of insurance coverage for Medicare beneficiaries are the Medicare Current Beneficiary Survey (MCBS), the Medical Expenditure Panel Survey (MEPS), and Medicare Program enrollment, claims, and encounter data. The MCBS is a nationally representative survey of the entire Medicare population. It contains individual-level data on insurance coverage, medical expenditures, health status, beneficiary attitudes, and a wide range of other health-related and socioeconomic characteristics. The MCBS is sponsored by the Centers for Medicare & Medicaid Services (CMS) and the data are collected by Westat, a private sector firm. The MEPS is a household survey that also includes person-level data on insurance coverage, medical expenditures, and health-related and socioeconomic characteristics for a nationally representative sample of persons in the civilian, noninstitutionalized population (Cohen et al, 1996; Cohen,

1997). For each household in the sample, MEPS collects annual data for 2 years by using 5 rounds of interviews over a 2 ½-year period. Data for some variables, such as type of health insurance coverage, are collected each round. MEPS is sponsored by the Agency for Healthcare Research and Quality (AHRQ) and the National Center for Health Statistics (NCHS), and the data are collected by Westat.

Medicare enrollment and claims data from administrative records are generally considered the most accurate sources of such data because Medicare revenues and payments are based on them. Administrative enrollment records indicate the type of coverage (such as Medicare Part A only or both Parts A and B) and consequently indicate the Medicare premium amount for each enrollee, and Medicare claims data are used to compute Medicare fee-for-service payments. However, Medicare administrative data lack individual-level data on socioeconomic characteristics, such as income and education, and many other individual-level variables collected by surveys such as MEPS and MCBS.

Both MEPS and MCBS collect data on Medicare beneficiary enrollment in Medicare managed care plans. The MCBS public use files include data on Medicare HMO enrollment. However, the MEPS public use files include data on Medicare managed care enrollment only for 1996 and 2006. Until 2006, the MEPS Medicare managed care enrollment estimates for rounds 2 through 5 did not benchmark well with enrollment estimates from administrative data from the Medicare Program.

Olin (2000) found that for every year from 1996 through 1999, the Medicare managed care enrollment estimates from MEPS are much greater in round 2 than in round 1. One possible reason why the estimates in rounds 2 through 5 are substantially greater than those from round 1 is that between 1996 and 2003, a different method was used for ascertaining Medicare managed

care enrollment for rounds 2 through 5 compared with round 1. In 2004, the MEPS questionnaire was revised to use the same method to collect information on Medicare managed care enrollment in all rounds. In addition, in 2004 the MEPS questionnaire was revised to collect information on all types of Medicare managed care plans, such as preferred provider organizations, due to the 2003 Medicare Modernization Act.¹ Before 2004, the MEPS questionnaire only included Medicare HMOs.

Zuvekas and Olin (2008) benchmark Medicare HMO enrollment data for 2001 through 2003 using data for 2,443 beneficiaries from MEPS (round 1) and the CMS Denominator file.² They found that Medicare HMO enrollment was reported in MEPS with reasonable accuracy (MEPS estimates are 11 percent higher on average), and the misreporting occurred among nearly all socio-demographic groups. They concluded that it is unlikely that behavioral analyses would be affected by incorrect reports of Medicare managed care coverage.

For the first time since 1996, Medicare managed care enrollment variables are available in the MEPS public use files for 2006. Unlike previous years, the 2006 MEPS enrollment estimates for all rounds benchmark well with administrative enrollment estimates from CMS.

This paper extends the analysis in Olin (2000) and Zuvekas and Olin (2008) by benchmarking Medicare managed care data from MEPS and CMS from 1996 through 2005. I also benchmark Medicare managed care data from MCBS and CMS from 1997 through 2003³ (to compare with the MEPS – CMS benchmark results) and compare distributions of Medicare managed care subgroups from MEPS and MCBS by age category, sex, health status, and

¹ The Medicare Modernization Act gave Medicare beneficiaries a prescription drug benefit and more health plan choices.

² The denominator file contains individual-level enrollment and demographic data for Medicare beneficiaries.

³ I could not find published estimates of Medicare HMO enrollment from the MCBS for all Medicare beneficiaries for 1996 or 2004 - 2005.

race/ethnicity. I find that MEPS estimates of Medicare managed care enrollment for round 1 benchmark reasonably well with CMS administrative data for 1996 – 1997 and 2000 – 2005.

Data and Methods

To assess whether data collected on Medicare managed care plan enrollment from MEPS benchmark well with administrative data, I compare Medicare managed care enrollment estimates from MEPS, CMS administrative data, and MCBS for 1996 through 2005.

CMS enrollment estimates from administrative data are from Kaiser Family Foundation (1996 - 2005), Centers for Medicare & Medicaid Services (1996 – 1998), and Centers for Medicare & Medicaid Services (1996 – 2003). CMS administrative enrollment estimates include enrollees in Medicare Advantage plans, risk HMOs, cost HMOs, Health Care Prepayment Plans, and demonstration plans, and they are estimates of enrollment at a particular point in time. MCBS enrollment estimates from 1996 through 2003 are from the MCBS Project (2000 - 2006).⁴ Published estimates of Medicare managed care plan enrollment from the MCBS for 2004 or 2005 were unavailable at the time of analysis.

To make the CMS administrative enrollment estimates consistent with those from MEPS, I excluded from the CMS estimates institutionalized beneficiaries and Medicare Advantage fee-for-service plan enrollees. I adjusted total CMS enrollment estimates to include only the non-institutional population by applying the ratio of non-institutionalized Medicare risk HMO enrollees to total Medicare risk HMO enrollees as reported by Riley and Zarabozo (2006-2007).

Files containing person-level data on Medicare managed care enrollment for the MEPS sample for 1996 through 2005 were merged to the MEPS full year consolidated household

⁴ The last publication date for the MCBS Project is December 2006, and it contains estimates of Medicare enrollment for 2003.

component public use files. Medicare managed care enrollment estimates were weighted to account for the complex design of the MEPS survey and to yield nationally representative estimates.

Findings

Consistent with Olin (2000), I find that MEPS Medicare managed care estimates for 1996 and 1997 from round 1 benchmark reasonably well with estimates from CMS administrative data, and data from MEPS round 2 do not. I extend the analysis in Olin (2000) by benchmarking more recent Medicare managed care data from MEPS and CMS. Table 1 compares MEPS enrollment estimates for 1996 through 2005 from rounds 1 and 2. It should be noted that the period of time for which data were collected for the MEPS in round 1 and round 2 are not consistent across all respondents. Enrollment estimates in round 2 are substantially higher than those from round 1, ranging from a 19 percent increase in 2005 to a 56 percent increase in 1999 (Table 1). Furthermore, enrollment estimates in round 2 for each year are greater than estimates for round 1 in the subsequent year.

As noted above, between 1996 and 2003, a different method was used to collect Medicare managed care enrollment data in rounds 2 through 5 compared with round 1. This is one possible explanation for the large increases in enrollment estimates after round 1. Another possible reason for these increases is that the vast majority of round 1 managed care enrollees continue to be counted as managed care enrollees in round 2, when they in fact some beneficiaries probably disenrolled during round 2. Until January 1, 2002, Medicare beneficiaries could enroll or disenroll from a Medicare managed care plan during any month of the year.

Beginning in January 1, 2002, Medicare managed care enrollment changes were permitted only during health plans' open enrollment periods.

Medicare managed care enrollment estimates from round 1 of MEPS are similar to those from CMS administrative data (risk HMOs, cost HMOs, and demonstration plans) for 1996 - 1997 and for 2000 - 2005 (Table 2). For those years, the ratio of MEPS enrollment estimates to CMS estimates ranges between 0.94 and 1.17. As indicated in Table 3, these ratios are comparable to the ratios of Medicare risk HMO enrollment estimates from the MCBS and CMS administrative data.⁵ Between 1997 and 2003, the ratio of MCBS enrollment estimates to those from CMS range from 1.00 to 1.14, and these ratios are greater than or equal to 1.10 for 5 years (1999 through 2003).

One possible reason why both MEPS and MCBS Medicare managed care enrollment estimates exceed estimates from CMS administrative data for some years is that the Medicare market has become more complex. During these years, some insurance companies—such as Blue Cross/Blue Shield—offered beneficiaries Medicare managed care plans, non-group Medigap plans, and group supplemental insurance plans. Consequently, it was more difficult for a beneficiary enrolled in a Blue Cross/Blue Shield plan to accurately identify whether he or she was enrolled in a Medicare managed care, Medigap, or supplemental insurance plan.

I also compared the distribution of MEPS and MCBS enrollment estimates by selected subgroups for 2000 and 2003.⁶ Tables 4 through 6 compare the estimated distributions of

⁵ The enrollment estimates from CMS are larger in Table 2 than in Table 3 because Table 2 includes all managed care enrollees (risk-based plans, cost-based plans, and demonstration plans), while Table 3 includes only enrollees in risk-based plans.

⁶ I selected 2000 and 2003 for the subgroup comparison because these years are relatively recent and MEPS estimates of Medicare managed care plan enrollment from round 1 for these years are the closest to CMS administrative data. 2003 is the most recent year for which I could find published estimates from MCBS of the distribution of Medicare managed care plan enrollees by the demographic and health status categories displayed in Tables 4 through 6.

Medicare managed care enrollees and all non-institutionalized Medicare enrollees from MEPS and MCBS by age, sex, self-reported health status, and race/ethnicity, respectively.

For 2000 and 2003, Table 4 shows that estimates from MEPS of the percentages of Medicare managed care plan enrollees in three age categories (ages 45 to 64, ages 75 to 84, and ages 85 and older) are similar to the percentages estimated from MCBS. For Medicare managed care plan enrollees ages 65 to 74, the estimates from MEPS are more than 10 percentage points lower than the estimates from the MCBS. For 2000 and 2003, the estimated age distributions of all non-institutionalized Medicare enrollees from MEPS and the MCBS are similar. For both years and both Medicare enrollee populations, the estimated distributions by sex are similar.

The estimated percentages of Medicare managed care enrollees from MCBS and MEPS in each self-reported health status category (excellent, very good, etc.) for 2000 and 2003 are similar for most categories, as shown in Table 5. For all non-institutionalized Medicare enrollees, the MCBS and MEPS estimates are similar for all health status categories.

The estimated distributions of Medicare managed care enrollees and all non-institutionalized Medicare enrollees by race and ethnicity are similar for 2000 and 2003 (Table 6).

Summary and Conclusions

MEPS estimates of Medicare managed care plan enrollment for 1996 – 1997 and 2000 through 2005 are the preferred source for policy research studies if the estimates are obtained from round 1. MEPS estimates from round 1 for these years benchmark reasonably well with enrollment estimates from CMS administrative data. Furthermore, the estimated distributions of Medicare managed care enrollees by age category, sex, self-reported health status, and

race/ethnicity are similar to those from MCBS. Medicare HMO enrollment data for 2006 are available in the MEPS public use file because the data for 2006 benchmark well with CMS administrative data in all rounds.

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Table 1: MEPS Medicare Managed Care Plan Enrollment Estimates, Rounds 1 and 2, 1996 – 2005

Year	MEPS Round 1	MEPS Round 2	Increase in Round 2	Percentage Increase	Sample Size	
					Round 1	Round 2
1996	5,190,883 (411,495)	6,534,875 (440,469)	1,343,992	25.9%	365	498
1997	5,567,597 (575,980)	7,914,307 (663,284)	2,346,710	42.1%	816	1,011
1998	5,416,749 (579,454)	7,574,761 (675,360)	2,158,012	39.8%	665	801
1999	4,048,528 (425,439)	6,332,669 (560,643)	2,284,141	56.4%	627	811
2000	6,144,795 (599,660)	8,963,235 (769,935)	2,818,440	45.9%	814	934
2001	6,875,924 (552,344)	9,091,726 (652,077)	2,215,802	32.2%	885	1,086
2002	5,939,232 (564,435)	7,962,280 (649,428)	2,023,048	34.1%	1,029	1,160
2003	5,640,881 (635,094)	8,108,867 (732,921)	2,467,986	43.8%	773	923
2004	5,082,630 (600,874)	6,516,094 (646,236)	1,433,464	28.2%	712	838
2005	5,794,757 (526,816)	6,869,338 (645,440)	1,074,581	18.5%	639	690

Source: Author's calculations from the 1996 – 2005 Medical Expenditure Panel Survey, Agency for Healthcare Research and Quality.

Notes:

1. Standard errors (in parentheses) are adjusted for the complex design of the MEPS sample.

Table 2: Comparison of Medicare Managed Care Plan Enrollment Estimates from CMS Administrative Files and MEPS Round 1

Year	CMS All Medicare Beneficiaries	CMS Non-institutionalized (Author's Estimate)	MEPS Round 1	MEPS Round 1/ CMS Non-institutionalized
1996	4,787,955	4,740,075	5,190,883	1.10
1997	5,895,227	5,806,799	5,567,597	0.96
1998	6,759,542	6,671,668	5,416,749	0.81
1999	6,573,435	6,474,833	4,048,528	0.63
2000	6,641,644	6,515,453	6,144,795	0.94
2001	6,019,804	5,889,562	6,875,924	1.17
2002	5,390,070	5,237,449	5,939,232	1.13
2003	5,140,293	5,003,735	5,640,881	1.13
2004	5,120,966	4,976,252	5,082,630	1.02
2005	5,498,113	5,344,735	5,794,757	1.08

Sources: Author's calculations from the Medicare Managed Care Contract Report, Centers for Medicare & Medicaid Services (1996 – 1998), the Medicare Health Plan Tracker, CMS/Kaiser Family Foundation (1999 – 2005), Riley and Zarabozo (2006-2007) and the Medical Expenditure Panel Survey, Agency for Healthcare Research and Quality (1996 – 2005).

Notes

1. Medicare managed care enrollment estimates from CMS include enrollment in Medicare Advantage plans, risk HMOs, cost HMOs, Health Care Prepayment Plans, and demonstration plans. Enrollees in Medicare Advantage fee-for-service plans are excluded.
2. Enrollment in Medicare managed care plans for the non-institutionalized population was estimated by applying the percentage of non-institutionalized Medicare risk HMO enrollees to total Medicare risk HMO enrollees as reported by Riley and Zarabozo (2006-2007) for each year. I assumed that the percentage in 2005 was the same as that for 2004.
3. Standard errors for the MEPS enrollment estimates are reported in Table 1 (above).

Table 3: Comparison of Medicare Risk Managed Care Plan Enrollment Estimates from MCBS and CMS Administrative Files: All Medicare Enrollees (Community-Based and Institutionalized) in thousands

Year	CMS Administrative Data	MCBS	MCBS/ CMS Administrative
1996	4,115	----- ¹	----
1997	5,211	5,243 (116)	1.01
1998	6,056	6,038 (135)	1.00
1999	6,347	6,956 (112)	1.10
2000	6,261	7,054 (128)	1.13
2001	5,481	6,248 (127)	1.14
2002	4,930	5,399 (129)	1.10
2003	4,622	5,119	1.11

Sources: Author's calculations from the Medicare Managed Care Contract Report, Centers for Medicare & Medicaid Services (1996 – 1998), the Medicare Health Plan Tracker, CMS/Kaiser Family Foundation (1999 – 2003), and the MCBS Project (1997 - 2003).

Notes

1. The MCBS Project (1996) does not include estimates of the number community-based and institutionalized Medicare risk HMO enrollees. The last year of data published by the MCBS Project is 2003.
2. Standard errors in parentheses.

Table 4: Estimated Distributions of Medicare Managed Care Plan Enrollees and All Non-Institutionalized Medicare Enrollees by Age and Sex from MCBS and MEPS Round 1, 2000 and 2003

Medicare Managed Care Enrollees	2000		2003	
	MCBS	MEPS	MCBS	MEPS
Age				
< 45	0.8%	8.2%	0.5%	5.8%
45 - 64	5.4%	7.4%	5.0%	7.1%
65 - 74	54.4%	43.1%	48.3%	37.8%
75 - 84	31.0%	33.4%	36.0%	39.6%
85+	8.3%	7.9%	10.2%	9.7%
Total	100.0%	100.0%	100.0%	100.0%
Sex				
Male	43.7%	40.2%	41.9%	45.8%
Female	56.4%	59.8%	58.1%	54.2%
Total	100.0%	100.0%	100.0%	100.0%
All Non-Institutionalized Medicare Enrollees				
Age				
< 45	3.8%	5.4%	3.7%	4.8%
45 - 64	9.8%	8.4%	10.7%	8.4%
65 - 74	47.3%	45.2%	46.0%	43.6%
75 - 84	30.2%	30.7%	30.1%	33.0%
85+	9.0%	10.3%	9.6%	10.2%
Total	100.0%	100.0%	100.0%	100.0%
Sex				
Male	44.2%	45.3%	44.7%	44.7%
Female	55.8%	54.7%	55.3%	55.3%
Total	100.0%	100.0%	100.0%	100.0%

Sources: Author's calculations from the 2000 and 2003 Medical Expenditure Panel Survey, Agency for Healthcare Research and Quality, and the MCBS Project for 2000 and 2003, Table 1.6.

Note: Standard errors of the estimates are available from the author upon request.

Table 5: Estimated Distributions of Medicare Managed Care Plan Enrollees and All Non-Institutionalized Medicare Enrollees by Self-Reported Health Status from MCBS and MEPS Round 1, 2000 and 2003

Medicare Managed Care Enrollees	2000		2003	
	MCBS	MEPS	MCBS	MEPS
Health Status				
excellent	17.0%	14.9%	16.2%	10.6%
Very good	29.6%	23.0%	30.0%	32.0%
good	32.0%	31.5%	34.4%	30.7%
fair	15.9%	24.0%	13.9%	18.8%
poor	5.5%	6.6%	5.4%	7.9%
Total	100.0%	100.0%	100.0%	100.0%
<hr/>				
All Non- Institutionalized Medicare Enrollees				
Health Status				
excellent	14.0%	14.7%	14.5%	12.4%
very good	25.5%	27.1%	26.0%	28.0%
good	31.7%	29.1%	31.5%	31.1%
fair	19.5%	20.0%	19.0%	19.0%
poor	9.3%	9.0%	9.0%	9.4%
Total	100.0%	100.0%	100.0%	100.0%

Sources: Author's calculations from the 2000 and 2003 Medical Expenditure Panel Survey, Agency for Healthcare Research and Quality, and the MCBS Project for 2000 and 2003, Table 2.7.

Note: Standard errors of the estimates are available from the author upon request.

Table 6: Estimated Distributions of Medicare Managed Care Plan Enrollees and All Non-Institutionalized Medicare Enrollees by Race/Ethnicity from MCBS and MEPS Round 1, 2000 and 2003

Medicare Managed Care Enrollees	2000		2003	
	MCBS	MEPS	MCBS	MEPS
Race/Ethnicity				
White non-Hispanic	79.7%	76.6%	77.2%	75.4%
Black non-Hispanic	8.6%	8.6%	7.7%	9.1%
Hispanic	7.6%	9.8 %	11.0%	9.9%
Other	4.1%	4.9%	4.0%	5.6%
Total	100.0%	100.0%	100.0%	99.9%
<hr/>				
All Non- Institutionalized Medicare Enrollees				
Race/Ethnicity				
White non-Hispanic	79.8%	81.4%	78.2%	79.0%
Black non-Hispanic	9.1%	10.6%	9.5%	10.4%
Hispanic	7.1%	5.7%	8.0%	6.7%
Other	4.0%	2.4%	4.3%	3.9%
Total	100.0%	100.0%	100.0%	100.0%

Sources: Author's calculations from the 2000 and 2003 Medical Expenditure Panel Survey, Agency for Healthcare Research and Quality, and the MCBS Project for 2000 and 2003, Table 1.6.

Note: Standard errors of the estimates are available from the author upon request.