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ABSTRACT

The Medicare-MEPS Validation Study uses Medicare claims for a subset of beneficiaries in the 2001-2003 MEPS Public Use Files to evaluate the quality of use and expenditure data collected in the MEPS. In this part of the study, we focus entirely on the quality of separately billed doctor (SBD) expenses associated with inpatient, emergency department, and outpatient department services. We first compare CMS claims data to MEPS estimates of SBD expenditures in aggregate for all hospital events identified by households and medical providers in the MEPS. The MEPS estimates of SBD expenditures are approximately 2-5 percent lower than the amounts reported on the Medicare Part B claims for reimbursement of physicians' services associated with hospital services for the matched subset of beneficiaries. We next compare facility and SBD expenditures for household-reported hospital events with an exact match to a CMS hospital claims record. These matched pair analyses also show SBD expenditures lining up well between MEPS and the CMS claims, particularly for hospital stays. Based on the aggregate and matched pair analyses, we conclude that the current SBD data collection process produces accurate information on expenditures for doctors who bill separately from hospitals for their services. Additional analyses suggest some potential for streamlining the SBD data collection process for certain types of outpatient department visits that infrequently have SBD expenses associated with them.

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Validating the Collection of Separately Billed Doctor Expenditures for Hospital Services: Results from the Medicare-MEPS Validation Study

INTRODUCTION

Expenses billed separately by physicians and other providers for treatment provided in hospital settings are an important component of medical costs, accounting for 11 percent of all hospital treatment expenses according to the most recent data from the 2005 Medical Expenditure Panel Survey (MEPS) . Typical separately billed doctor (SBD) expenses include fees for surgeons, radiologists, and anesthesiologists. As part of the ongoing Medicare-MEPS Validation Study, we use Medicare claims for a subset of beneficiaries in the 2001-2003 MEPS Public Use Files to evaluate the validity of SBD expenditures collected in MEPS.

We first compare Medicare claims for physician services provided in hospitals to MEPS estimates of SBD expenditures in aggregate for all inpatient (IP), outpatient (OP), and emergency room (ER) hospital events identified by households and medical providers in the MEPS. We next compare facility and SBD expenditures for household-reported hospital events with an exact match to a CMS hospital claims record. Based on the aggregate and matched pair analyses, we conclude that the current SBD data collection process produces accurate information on expenditures for doctors who bill separately from hospitals for their services. We also examine opportunities to improve the efficiency of SBD data collection by identifying hospital events where SBD expenses infrequently occur.

2. BACKGROUND: MEDICARE-MEPS VALIDATION STUDY

Medicare administrative data are among the few data sources that can be used to benchmark use and expenditures data in the MEPS. The full study includes analyses of over- and under-reporting of expenditures by household respondents and medical providers; the accuracy of household-reporting of hospital stays, emergency room visits, and ambulatory visits to physicians' offices and hospital outpatient departments; the impact of dying or being institutionalized during the year on MEPS estimates of expenditures; and issues related to the abstraction and use of medical provider component (MPC) data in the survey. This report focuses entirely on the quality of SBD data collected or imputed for hospital events identified by households and medical providers in the MEPS.

For the Medicare-MEPS Validation Study, we acquired Medicare enrollment and claims data from the Centers for Medicare and Medicaid Services (CMS) for a subset of beneficiaries in MEPS during the years 2001-2003. The group includes all of the survey respondents who provided a complete Medicare health insurance claim number (HICN) and were matched exactly to the same HICN or to Social Security number, gender and date of birth in the Medicare administrative records. The number of beneficiaries in the exact match group was 1,632 in 2001, 1,981 in 2002, and 1,761 in 2003.[1] These beneficiaries were eligible for Medicare for all or part of the year(s) they were in the survey, and they could have been in either Medicare fee-for-service or managed care. This non-random sample of persons providing valid numbers that were matched to CMS records represents 44 percent of the eligible Medicare Population in MEPS.

We use the Medicare enrollment data to determine the length and type of coverage—Medicare fee-for-service or managed care or a mix of the two—for each year a beneficiary was

[1] Some of these beneficiaries were in the survey for two years (2001-2002 or 2002-2003).

in the MEPS. Then, for the always covered by Medicare fee-for-service beneficiaries in our sample, we compare the final action claims submitted by hospital inpatient and outpatient departments, skilled nursing facilities, home health agencies, hospices, and non-institutional providers to information reported by households and medical providers in the MEPS.

All of our analyses are restricted to Medicare-covered events and Medicare payments rather than total expenditures (Medicare payments plus payments by all other sources). We are restricted to comparisons of Medicare-covered events because the CMS claims do not include information on the beneficiaries' use of non-covered services or care by providers who do not bill Medicare (e.g., a VA facility). In addition, the focus on Medicare payments is necessary because the CMS claims are an accurate reflection of Medicare payments to a provider, but they do not show payments actually made by individuals or supplemental insurance toward beneficiary cost sharing liability. As a consequence, the claims are not always a reliable source of information on total expenditures for an event. Medicaid payments to hospitals and physicians for the cost sharing liability of a dually eligible beneficiary, for example, are routinely discounted.

3. BACKGROUND: SEPARATELY BILLED DOCTOR EXPENSES (SBD)

In this phase of the validation study, we evaluate the quality of SBD data collected in the MEPS MPC. These data are collected in two stages. First, hospital medical records and patient accounts information from the MPC are manually reviewed to identify all doctors who may have billed separately from the hospital for care provided during a stay or visit. Second, the potential SBDs are contacted by telephone and asked about separately billed services for the hospital event(s) in question. This two stage process is the only practical way of collecting information

on doctors' care not included in hospital facility charges, but it does raise two concerns. One is that some SBD expenditures may be missed if not all SBDs are identified in the manual review of hospital medical records. The other is that the data collection process may be inefficient because many of the potential SBDs identified in the manual reviews disavow billing separately for services during the hospital event(s) in question when they are contacted.

4. METHODS

To compare MEPS SBD expenditures to the CMS claims, we start by restricting the matched sample to survey respondents who were in-scope the entire calendar year, did not die and were not institutionalized, and had Medicare fee-for-service all year. They allow us to compare use and expenditures data for beneficiaries in the survey who were asked about their health care for the entire year and also had Medicare claims for all of their covered services regardless of what they reported in the survey. We refer to the full-year, fee-for-service group as the *target population* for these analyses. This target population is used in most of the analyses in the Medicare-MEPS Validation Study. Sample sizes for this target population are 1203, 1502, and 1340, respectively for the years 2001 through 2003. This target population represents 29 percent of the full Medicare sample in MEPS for 2001-2003. Combined with the cumulative overall MEPS response rate of approximately 60 percent, this leads to an effective yield rate of 18 percent of the Medicare population for these analyses.

We make two types of SBD expenditure comparisons for the target population in this phase of the Medicare-MEPS validation study. First, we compare all of the SBD expenditures reported or imputed in the household and medical provider components of MEPS to CMS carrier file claims by SBDs for the same set of hospital events (IP, OP, and ER). The aggregate SBD

expenditure comparison allows us to assess the overall accuracy of SBD expenditures in the MEPS without getting into the detail of household or medical provider misreporting of event-level information. Second, we compare facility and SBD expenditures for matched pairs of hospital events in the MEPS HC and the CMS claims files. The matched pair comparison provides information on the accuracy of SBD expenditures collected for individual events in MEPS while allowing for the possibility that facility and SBD expenditures are sometimes reported together in the billing records of hospitals in the MPC.

We also examine patterns of disavowal by event type and physician specialty in the MPC SBD data in an effort to determine whether the SBD data can be collected more efficiently. This review is undertaken because a large percentage of the physicians abstracted from hospital medical records and patient bills are not SBDs. The question is whether or not certain physician specialties can be ignored when abstracting potential SBDs from the hospital data.

4.1 CMS claims data

CMS claims data are stored in one of seven standard analytic files based on the type of billing record the provider is required to use for reimbursement of Medicare covered services. These seven are the inpatient, outpatient, Carrier (Part B), durable medical equipment, home health, skilled nursing facility, and standard analytic files hospice files (see Olin et al 2008 and RESDAC 2006 for additional detail on the files). SBD claims are included in the Medicare Carrier file along with other Part B claims by non-institutional providers. There are no direct links between Carrier file claims and hospital facility claims in the inpatient and outpatient files, so an indirect method is needed to identify physicians' charges for services provided in hospitals. We use the place of service variable included on each Part B claim to determine whether a

physician's claim was associated with a hospital facility event. This variable may not be 100 percent reliable, but it appears to differentiate well in the vast majority of cases. An alternative would have been to use CPT-4 codes to separate Part B claims by place of service (office or hospital), but CPT-4 codes do not reliably distinguish between services provided in offices and hospitals. For example, the 99201-99215 series of physician evaluation and management codes are used by both office-based physicians and hospital outpatient departments.

4.1.1 Aggregate expenditures

To determine total SBD expenditures in the CMS data, we first derived aggregate estimates of SBD expenditures for the target population by summing across all CMS Part B claims during the calendar year where the place of service variable indicated a hospital facility (inpatient, outpatient, or emergency room). The annual totals reflect the amounts paid by Medicare for physicians' services that were provided during hospital stays and hospital ambulatory visits but not included in the hospital facility charges. No effort was made to link these claims to Medicare claims in the IP and OP files for reimbursement of facility charges at this point in the analyses. Instead, we simply compare total SBD expenditures in the CMS data to the SBD expenditures reported and imputed for hospital events by the target population in the MEPS. However, to create comparable sets of events and services, we had to exclude CMS claims for hospital events not in the MEPS and for separately billed laboratory services by hospital outpatient departments. These adjustments to the CMS data are described below:

CMS Adjustment #1: SBD claims for IP and ER events in CMS claims not identified in HC and MPC.

We subtracted from the CMS SBD total all of the SBD expenditures associated with IP and ER events that were not identified by households or medical providers in MEPS. We identified CMS claims for IP and ER events that were not in the MEPS through a semi-automated process linking all IP and ER events in the CMS, HC and MPC data files. This process included a hand review of all links.

CMS Adjustment #2: OP events in CMS claims not identified in HC and MPC.

Similarly, we subtracted from the CMS SBD total all of the SBD expenditures associated with OP events that were not identified either by households or medical providers in MEPS. We did not link all OP events as we did with ER and IP events because of resource constraints, far larger number of events, and much higher proportion of date mismatches. Instead, we took the average ratio of total OP SBD dollars to total ER/IP SBD dollars combined after subtracting out SBDs associated with OP laboratory/radiological services (see adjustment #3), and multiplied the Adjustment #1 amounts by this ratio of 0.4. (Alternative assumptions for this ratio have a negligible effect on the overall MEPS to CMS SBD ratio). To the extent that ER and IP events are more salient events than OP events and therefore likely to have a fewer percentage of events in the CMS claims that do not match to either HC or MPC reported events, this represents a lower bound estimate.

CMS Adjustment #3: SBDs associated with hospital OP laboratory/diagnostic services.

A large number of the CMS OP claims only have laboratory or radiological CPT codes. Many of these OP "events" are not reported by households even though a physician office visit is often reported for the same day as the OP event. We believe that hospital outpatient departments

are essentially serving as separately billing laboratories (SBLs) in these cases, and households do not typically report the lab and radiology services separately from the physician visit. A future report will discuss the implications of SBL expenditures on MEPS estimates of total expenditure in more detail. Here we drop the CMS OP claims for lab and radiology services to make the CMS and MEPS estimates of SBD expenditures for hospital events in MEPS more comparable.

4.1.2 Matched pair expenditures

Both facility and SBD expenditures are used in the matched pair comparisons of CMS claims to hospital events reported by households in MEPS. To make these comparisons, we first had to link each of the CMS SBD claims to a specific hospital facility claim in the CMS IP and OP files.[2] We did this by matching the SBD claims to hospital claims for facility charges by date(s) of service on the CMS claims records. We allowed leads and lags of 1 day for ER visits and hospital stays to allow for ambiguity over dates of service from late night admissions. Technically, not all of these SBD claims were actually submitted separately to Medicare by the physician. In the MEPS MPC data, for example, we found instances where a hospital would submit claims to Medicare for both the facility costs (an inpatient or outpatient institutional bill) and the physician services (a carrier file bill). We nonetheless call all of the CMS Part B claims associated with these hospital events SBDs. However, it is important to keep this hospital billing convention in mind when comparing CMS and MEPS "SBD" expenditures because hospital expenditures in the MEPS MPC have not been split between facility and physician charges when the hospital billing information includes both types of Medicare reimbursement.

[2] Hospital claims for emergency room services are included in both the CMS IP and OP files. We identified and put the ER claims in a separate file for comparison to the MEPS ER events.

After the SBD claims were linked to individual claims for hospital care in the CMS files, we matched the CMS hospital events to hospital events in the MEPS HC. The description of this matching process is described in the MEPS data section on subsetting CMS and MEPS records to be used in the matched pair expenditure comparisons.

4.2 MEPS Data

SBD data are collected entirely in the MPC of the survey. Most of the information on SBD expenditures is provided by the physicians who billed separately from the facility for care provided during a hospital stay or visit. The process of collecting expenditure data for these physicians requires a manual review of hospital medical and patient account records to identify potential SBDs who are later contacted for information on services they provided during the hospital events captured in the MPC. However, some hospitals include SBD expenditures as well as hospital facility expenditures in their billing records. When the hospital bills include reimbursements for both types of services (facility and physician), the SBD expenditures are usually counted as part of the facility expenditure. As a consequence, SBD expenditures in the MPC are collected explicitly from physicians in the survey and implicitly from hospital billing records containing both types of expenditures.

Each potential SBD-hospital event pair is called an SBD *node* in MEPS.. For example, an inpatient hospital stay might have separate SBD nodes for the surgeon, anesthesiologist, and radiologist, with the nodes covering all encounters during that inpatient stay. Separate nodes are also created when a physician provides care for multiple hospital outpatient visits: one for each visit. SBD nodes are classified according to whether the physician provided complete data, incomplete data, refused, or disavowed the patient (that is, they do not know the patient or did

not provide separately billable services to the patient for the hospital event). The SBD identification process is designed to be as expansive as possible to identify all potential SBD nodes, resulting in about half of these nodes being disavowed. For example, a physician's name will appear in medical records as the referring physician or physician of record but the physician did not actually provided an care at the hospital. Expenditures from complete SBD nodes are generally used as is, while an imputation process is used to impute expenditures from incomplete or refusal SBD nodes. Disavowals nodes are assumed valid and SBD expenditures for that node are considered to be $0. Expenditures (actual and imputed) are then summed across all SBD nodes for each hospital event collected in the MPC. For hospital events that did not match to a MPC hospital record, SBD expenditures are also imputed. Additional information about MPC and SBD sampling and estimation procedures is available in the MEPS Methodology Report #9 (Machlin and Taylor 2000) and in the MEPS public use file documentation for the event-level files (see for example (HC-077D Hospital Inpatient File, HC-077E Hospital Emergency Room Visits File, and HC-077F Outpatient Department Visits).

4.2.1 Aggregate expenditures

The comparison of aggregate SBD expenditures in the CMS data and the MEPS also requires making adjustments to the MEPS data. These adjustments are necessary for two reasons. First, some SBD expenditures are combined with other expenditures in the MEPS HC and MPC. Second, other SBD expenditures collected in the MPC are missing altogether from the MEPS public use files (PUFs) because not all of the MPC hospital events are matched to household-reported events. Adjustments for these problems are described below:

MEPS Adjustment #1: SBDs embedded in office-based events.

When hospital events collected in MPC are matched to office-based visits reported by households, the SBD and facility expenditures are combined and reported as a single expenditure on the PUFs under office-based visits. Additional SBD expenditures are embedded in office-based events during the imputation process. The process uses a weighted sequential hot-deck procedure which uses donors with complete expenditure information to impute expenditure data for visits for household-reported office-based visits with missing or incomplete expenditure data. Some of these donors in this hot-deck procedure were cases that matched to hospital events in the MPC and where the SBD and facility expenditures were combined and imputed to the office-based records with missing expenditure information. We added these SBD dollars embedded in office-based expenditures to the SBD dollars reported for ER, IP, and OP events in the PUFs.

MEPS Adjustment #2: Unmatched MPC Hospital events.

We added SBD dollars associated with hospital events collected during the MPC that were not matched to household events. This estimate includes only the SBD dollars from complete nodes, although additional dollars would be expected from SBD nodes (refusals or incompletes) that would have been imputed if these hospital events had been matched) Consequently, it is a lower bound estimate of SBD expenditures for unmatched hospital events in the MPC.

MEPS Adjustment #3: SBDs captured with ER/IP/OP Facility Payments.

Hospitals sometimes bill Medicare for Part B services provided by physicians associated with hospital events. These Part B physician expenditures are generally added to the facility

payments collected in the MPC, but they are separate claims in the CMS data. Therefore, an adjustment is necessary to estimate SBD expenditures included in the MPC hospital expenditures. For ER visits, we clearly identified a minimum of 4-8% of Part B physician payments that were combined in this manner in MPC. For OP, and especially, IP events, it was more difficult to quantify these embedded payments, because of the large number of refusal nodes and abstraction errors. Consequently, we used a conservative estimate of 3 percent overall. (A larger adjustment would bring MEPS SBD expenditures even closer to the CMS data).

4.3 Matched Pair Analyses

We compare facility and SBD expenditures for matched pairs of hospital records reported in the CMS claims and in the MEPS HC by hospital event type (IP, ER, and OP). The methodology for identifying these matched pairs of events is described below:

Inpatient stay pairs

For inpatient hospital stays (IP), we first selected all hospital records in the MEPS MPC with complete facility payment data that matched an inpatient hospital record in the CMS claims based on our hard links. We next subset these matched pairs of CMS-MPC inpatient records to those that were matched to the MEPS HC data because SBD expenditures for nodes with incomplete payment data or refusals are only imputed for events that match to the HC. Finally, we subset to matched pairs of inpatient records where any discrepancy in Medicare facility payments reported in the MPC compared to what is contained in the CMS claims records is less than 1,000 dollars. Our hand review of these cases found that almost all were the result of clear

abstraction errors rather than possible Medicare Part B physician payments embedded in the facility payments. Table 1 further describes this sample selection in terms of numbers. From this, we calculate that 15% of the inpatient pairs had to be discarded in 2001 and 11% in 2002 and 2003 because of large discrepancies in facility payments.

Emergency room visit pairs.

The selection of ER pairs is similar that used to select IP stays pairs. We first discarded ER visits that preceded inpatient hospital stays. We then selected all ER records in the MEPS MPC with complete facility payment data that matched an ER record in the CMS claims based on our hard links. We then subset those pairs that matched to the MEPS HC. We only discarded a handful of ER cases based on the $1000 discrepancy threshold. At lower thresholds it becomes increasingly difficult to distinguish between abstraction errors and embedded Part B payments.

Outpatient department visit pairs.

We matched OP pairs in a slightly different manner based on event dates rather than hard links that we reviewed because of the large number of OP events. We discarded all OP events that were associated with either an ER or IP event. We also discarded all matched pairs that contained a global fee for the facility payment or the physician component of the care.

We summed Medicare payments across all Medicare Part B claims that were identified as being associated with each of the matched hospital events. Similarly, we summed all of the SBD Medicare payment amounts for each hospital event.[3] We then compared total facility

[3] SBD nodes were linked to specific hospital events by Westat as part of the SBD data collection process using primarily a hand matching process. We did not overwrite these hand links although there were inevitably some errors in this process.

expenditures, total SBD expenditures, and total facility plus SBD expenditures for the subset matched pairs without large discrepancies in facility payments.

4.4 SBD Node Disposition Analysis

The purpose of the SBD node disposition analysis is to determine whether the MPC SBD data collection process can be made more efficient by identifying categories of physicians who should not be contacted for information on separately billed services even though they were identified as potential SBDs in the manual reviews of hospital medical and billing records. This analysis is done using only the MEPS MPC data. In it, we compare of the results of our efforts to collect SBD expenditures for all potential SBDs in the MPC sorted by physician specialty and event type (IP, OP, or ER) for the years 2001-2003.

5. FINDINGS

5.1 Aggregate SBD expenditures

Table 2 contains our estimates of total SBD expenditures in the CMS claims and MEPS before and after adjustments for each of the years 2001, 2002, and 2003. Looking at the last column, the total Medicare SBD payments in the CMS claims (or more accurately Medicare Part B physician claims for services provided in hospitals) before adjustments was $688,046 in 2003 compared to the unadjusted MEPS PUF SBD total of $480,802. After adjusting for hospital events that were not reported by the household, SBD dollars embedded in events reported by the household as office-based visits, and Medicare Part B payments captured with the facility payments in MPC data collection, the comparable SBD totals are $628,903 in the CMS data and $616,462 in MEPS, or a difference of 2 percent. Differences for 2001 and 2002 are similar,

suggesting that the MEPS process of collecting and imputing SBD expenditures works well. Moreover, although there is some inherent squishiness in the adjustments we made, the adjustments are actually lower bound estimates in many cases.

5.2 Matched Hospital Events

Table 3 contains the results of the matched pair analyses by event type. The reported facility payments in the MEPS MPC exceed those reported in the CMS claims data for all years and event types. The differences in reported Medicare facility payments are slight for hospital stays but substantial for ER and OP visits. In some cases, the excess facility payments are clearly the result of Medicare Part B physician services being billed by the hospital, especially for ER visits. In other cases, there are clear abstraction errors leading to overestimates in the MEPS MPC data. It proved impossible to fully separate out these two effects. Thus, the SBD payment line in the table contains no adjustment for Medicare Part B payments billed by hospitals in the MPC. This SBD payment line shows lower estimates in the MEPS for 2002 and 2003 especially compared to the CMS data. However, when the facility and SBD amounts are combined, the MEPS totals are either very close to (in the case of hospital stays) or significantly exceed the CMS claims amounts. For example, the combined physician and facility components of Medicare payments hospital stays for MEPS were within 99 percent of that reported in the CMS data and actually exceeded CMS claims amounts by 2 percent for ER visits and 11 percent for OP visits. Future analyses will explore further the reasons why expenditures were 11 percent higher in MEPS for OP visits.

The aggregate and matched pair analyses both tell essentially the same story. Discrepancies between SBD dollar amounts reported in MEPS and CMS are principally due to

differences in the number of hospital events reported by households, and the SBD data collection process does a reasonable job of collecting SBD expenditures for hospital events reported by households. However, the differences between CMS and MPC expenditures for matched pairs of OP and ER events are large enough to warrant further investigation. As part of this investigation, we will review MPC billing data for OP and ER events with relatively large expenditures compared to the CMS claims.

5.3 SBD Node Disposition Analysis

Table 4 presents a summary of the final disposition status codes of the SBD nodes by event type and by specialty for each of the three years. We categorized these disposition codes into three categories: complete, refusals, and disavowals. The patterns were generally very similar across all three years. In 2003, 37% of all SBD nodes were complete, 15% were refusals and 48% were disavowals overall. However, we note substantially different patterns by event type. For inpatient stays (IP) 57% of nodes were complete and only 27% were disavowals. All of the physician types, with the exception of pathologists, had high rates of completes and correspondingly low rates of disavowals for inpatient stays. ER visits had somewhat lower rates of complete nodes and higher disavowal rates, with the highest completion rates among radiologists and the other specialty category. OP events had the lowest rate of complete SBD nodes (27%) and highest rate of disavowals (59%). GP/FPs and OB/GYNs had especially low rates of complete nodes and high rates of disavowals for OP events.

6. CONCLUSION

In this part of the Medicare-MEPS Validation Study, we compared CMS claims data to MEPS estimates of SBD expenditures for the set of hospital events identified by households and medical providers in the MEPS. The aggregate analyses suggest that SBD expenditures reported or imputed for hospital events in the two components of MEPS are 2 to 5 percent lower than the Medicare Part B claim amounts for hospital events. The matched pair analyses also show SBD expenditures lining up well between MEPS and the CMS claims, particularly for hospital stays. Based on the aggregate and matched pair analyses, we conclude that the SBD data collection process produces accurate information on expenditures for doctors who bill separately from hospitals for their services. Discrepancies in aggregate totals are largely accounted for by underreporting of hospital events, especially outpatient department visits, by households.

However, we encountered higher than expected abstraction error rates related to facility expenditures in the MPC in these comparisons, particularly for OP and ER events. An expert panel convened by AHRQ in September 2007 considered some of the issues raised by these analyses and made a number of recommendations for improving the accuracy of MPC data collection.

We also examined patterns of disavowal by event type and physician specialty in the MPC SBD data. For SBD nodes associated with hospital stays, we found no clear patterns by specialty that would allow more selective targeting of data collection. However, among SBD nodes associated with OP events, general practitioner/family practice nodes had particularly low yield rates, thus showing some potential for streamlined data collection. Selected other specialties for OP and ER events also have some potential for streamlining. Future analyses may find other potential refinements to improve the efficiency of SDB data collection.

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Table 1. Matched Pairs Sample Selection

	2001	2002	2003
Inpatient Hospital Stays (IP)			
Matched pairs with complete facility data	266	276	272
Matched pairs that match to MEPS HC	229	243	246
Matched pairs with <1000 discrepancy in facility payments	194	214	218
Emergency Room Stays (ER)			
Matched pairs with complete facility data	234	308	252
Matched pairs that match to MEPS HC	143	216	159
Matched pairs with <1000 discrepancy in facility payments	142	214	156
Outpatient Department Visits (OP)			
Matched pairs with complete facility data	1,999	2,286	2,285
Matched pairs that match to MEPS HC	1,280	1,623	1,564
Matched pairs with <1000 discrepancy in facility payments	1,255	1,591	1,547

Table 2. Aggregate Facilty and SBD Expenditures with Adjustments

	Medicare Payments		
	2001 (n=1,203)	**2002 (n=1,502)**	**2003 (n=1,340)**
CMS TOTAL	4,778,205	6,115,885	6,046,091
ER	32,043	45,975	49,834
HS	2,372,564	3,067,087	3,020,464
OP	642,365	918,777	961,277
MV	1,160,351	1,360,377	1,326,470
Amb surgery	90,524	124,005	110,705
SBD (before adjustments)	570,882	723,669	688,046
- Unmatched HS/ER Facility events (CMS Adjustment #1)	-29,260	-31,219	-38,924
- Unmatched OP Facility events (CMS Adjustment #2)	-11,704	-12,488	-15,570
- SBDs for separately billing labs (CMS Adjustment #3)	-5,435	-5,477	-4,650
Adjusted CMS SBD total	**524,484**	**674,484**	**628,903**
MEPS TOTAL	4,183,749	5,345,646	5,312,302
ER	86,465	121,911	105,120
HS	2,214,399	2,772,229	2,914,528
OP	415,527	455,306	583,373
MVE (incl SBD)	1,010,159	1,419,800	1,159,860
MVN [4]	49,280	77,454	68,619
SBD (accounted in PUF)	407,919	498,946	480,802
+ Embedded in MVE (MEPS Adjustment #1)	46,088	78,738	68,460
+ Unmatched MPC Events (MEPS Adjustment #2)	46,489	47,304	52,776
+ Embedded in ER/HS/OP Facility pymts (MEPS Adjustment #3)	12,238	14,968	14,424
Adjusted MEPS SBD total	**512,734**	**639,956**	**616,462**
Ratio of Adjusted MEPS SBD to Adjusted CMS SBD Totals	**0.98**	**0.95**	**0.98**

Table 3. Medicare Payments for SBDs and Facilities for Matched Pairs of MPC and CMS Claims Events

	2001				2002				2003			
	CMS	**MPC**	**DIFF**	**%DIFF**	**CMS**	**MPC**	**DIFF**	**%DIFF**	**CMS**	**MPC**	**DIFF**	**%DIFF**
HOSPITAL STAYS												
Number Matched Pairs	194				214				218			
Facility Payments	1,173,798	1,177,612	3,814	100%	1,462,455	1,475,251	12,796	101%	1,466,039	1,468,864	2,825	100%
SBD Payments	182,544	180,109	(2,435)	99%	232,141	193,461	(38,680)	83%	214,114	195,218	(18,896)	91%
Facility + SBD Payments	1,356,342	1,357,721	1,379	100%	1,694,596	1,668,712	(25,884)	98%	1,680,153	1,664,082	(16,071)	99%
EMERGENCY DEPARTMENT												
Number Matched Pairs	142				214				156			
Facility Payments	20,260	27,150	6,890	134%	30,970	37,343	6,373	121%	30,102	33,297	3,194	111%
SBD Payments	9,453	10,187	735	108%	16,574	13,145	(3,429)	79%	13,517	11,192	(2,325)	83%
Facility + SBD Payments	29,712	37,337	7,625	126%	47,544	50,488	2,944	106%	43,619	44,488	870	102%
OUTPATIENT DEPARTMENT												
Number Matched Pairs	1,255				1,591				1,547			
Facility Payments	128,669	140,866	12,198	109%	219,674	237,546	17,871	108%	216,388	241,303	24,915	112%
SBD Payments	66,963	68,540	1,578	102%	91,143	85,861	(5,282)	94%	93,029	101,203	8,174	109%
Facility + SBD Payments	195,631	209,407	13,775	107%	310,818	323,407	12,589	104%	309,417	342,506	33,089	111%

Table 4. Summary Node Disposition Status by Physician Specialty and Event Type

2001	ALL EVENTS				IP				ER				OP			
Specialty	**complete**	**refusal**	**disavow**	**TOTAL**	**complete**	**refusal**	**disavow**	**TOTAL**	**complete**	**refusal**	**disavow**	**TOTAL**	**complete**	**refusal**	**disavow**	**TOTAL**
GP/FP	13%	7%	80%	926	39%	14%	47%	176	11%	6%	83%	151	5%	5%	89%	595
Internist	28%	10%	62%	2,589	54%	11%	34%	772	20%	8%	72%	316	17%	10%	73%	1,499
Pediatrician	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Surgeon	33%	12%	54%	879	59%	14%	27%	215	15%	12%	73%	52	26%	11%	63%	611
OB/GYN	19%	3%	78%	86	57%	7%	36%	14	---	---	---	---	11%	3%	86%	70
Radiologist	63%	19%	18%	1,726	66%	19%	15%	490	68%	23%	10%	299	60%	18%	22%	936
Psychiatrist	19%	5%	75%	77	---	---	---	---	---	---	---	---	14%	5%	82%	65
Anesthes.	65%	10%	25%	254	72%	5%	24%	110	---	---	---	---	62%	14%	24%	140
Pathologist	16%	14%	70%	988	22%	10%	67%	291	5%	11%	84%	151	15%	18%	67%	546
Other	28%	17%	55%	1,540	40%	13%	47%	223	43%	28%	30%	574	13%	10%	77%	740
TOTAL	33%	13%	54%	9,065	51%	13%	35%	2,291	35%	18%	47%	1,543	25%	12%	64%	5,202

2002	ALL EVENTS				IP				ER				OP			
Specialty	**complete**	**refusal**	**disavow**	**TOTAL**	**complete**	**refusal**	**disavow**	**TOTAL**	**complete**	**refusal**	**disavow**	**TOTAL**	**complete**	**refusal**	**disavow**	**TOTAL**
GP/FP	11%	10%	79%	1,051	40%	16%	44%	158	11%	6%	83%	219	2%	10%	88%	665
Internist	27%	15%	58%	3,317	58%	15%	27%	810	16%	15%	68%	292	17%	14%	69%	2,209
Pediatrician	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Surgeon	41%	11%	48%	1,033	66%	12%	22%	291	23%	11%	66%	56	32%	10%	57%	684
OB/GYN	19%	1%	79%	72	67%	8%	25%	12	---	---	---	---	10%	0%	90%	58
Radiologist	58%	22%	19%	2,066	62%	22%	16%	582	60%	27%	13%	365	56%	21%	23%	1,119
Psychiatrist	29%	6%	66%	35	53%	11%	37%	19	---	---	---	---	---	---	---	---
Anesthes.	60%	23%	17%	309	65%	17%	18%	140	---	---	---	---	57%	28%	15%	166
Pathologist	14%	15%	71%	1,197	21%	18%	61%	304	2%	16%	82%	152	13%	14%	72%	741
Other	35%	24%	40%	1,434	56%	10%	34%	238	45%	38%	17%	688	12%	13%	75%	504
TOTAL	33%	17%	50%	10,514	54%	16%	29%	2,554	35%	25%	40%	1,772	24%	15%	61%	6,146

2003	ALL EVENTS				IP				ER				OP			
Specialty	**complete**	**refusal**	**disavow**	**TOTAL**	**complete**	**refusal**	**disavow**	**TOTAL**	**complete**	**refusal**	**disavow**	**TOTAL**	**complete**	**refusal**	**disavow**	**TOTAL**
GP/FP	15%	12%	73%	1,071	45%	17%	39%	224	11%	10%	79%	137	6%	11%	84%	705
Internist	31%	11%	59%	2,741	59%	15%	27%	912	19%	6%	74%	263	16%	9%	75%	1,559
Pediatrician	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Surgeon	36%	14%	50%	1,138	68%	12%	20%	265	18%	11%	70%	44	26%	15%	59%	828
OB/GYN	17%	6%	77%	83	62%	15%	23%	13	---	---	---	---	9%	4%	87%	67
Radiologist	62%	18%	20%	2,165	68%	19%	12%	636	61%	23%	15%	311	59%	16%	25%	1,218
Psychiatrist	29%	3%	68%	110	63%	0%	38%	16	---	---	---	---	24%	3%	73%	88
Anesthes.	58%	22%	21%	306	58%	20%	22%	144	---	---	---	---	58%	23%	19%	160
Pathologist	20%	9%	71%	963	28%	12%	60%	260	4%	11%	85%	122	19%	7%	73%	581
Other	41%	24%	35%	1,529	52%	17%	31%	265	60%	19%	21%	607	18%	32%	50%	649
TOTAL	37%	15%	48%	10,106	57%	16%	27%	2,735	43%	16%	42%	1,484	27%	14%	59%	5,855

Note: ---number suppressed to meet CMS privacy guidelines.