

CMS 2010 Physician Supplier & Beneficiary Summary Public Use File (PUF)

General Documentation

1. Overview of the PUF

This release contains the *2010 Physician Supplier & Beneficiary Summary (PSBS) Public Use File (PUF)* drawn from 2010 Medicare Part B non-institutional claims.¹ The purpose of the *CMS 2010 PSBS PUF* is to provide National Provider Identifier (NPI) level information on non-institutional claims paid to participating and non-participating physicians/suppliers for fee-for-service (FFS) Medicare beneficiaries in 2010. This PUF includes all types of Part B non-institutional claims, which are:

- RIC O non-DMEPOS claim
- RIC O DMEPOS claim
- RIC M non-DMEPOS DMERC claim
- RIC M DMEPOS DMERC claim

The *CMS 2010 PSBS PUF* is an aggregated file in which each record summarizes information for a particular physician (individual or organization) identified by the NPI. However, the *CMS 2010 PSBS PUF* contains multiple records per NPI as a single rendering physician/supplier can potentially bill in multiple states. As a result, a NPI summary record exists for each unique combination of NPI, state of service, and hospital referral region (HRR).² There are different categories of summary measures in the *CMS 2010 PSBS PUF* including beneficiary demographics and utilization measures. Summarized beneficiary measures include beneficiary demographics (e.g., breakdown of beneficiary counts by sex, age, and race) and health status information (e.g., breakdown of beneficiary counts by selected chronic conditions).³ Summarized utilization measures include the number of physician/supplier events defined using Berenson-Eggers Type of Service (BETOS) Codes.⁴

The *CMS 2010 PSBS PUF* is merged with the National Plan and Provider Enumeration System (NPPES) developed by the CMS using the unique physician/supplier identifier, NPI.⁵

¹ Claims with services ending in 2010, defined by the “claim through date.”

² Table 6 provides a list of all the HRRs.

³ For more information on the chronic conditions, see <http://www.ccwdata.org/chronic-conditions/index.htm>

⁴ Table 7 contains PSBS variables associated with BETOS classifications, and the corresponding BETOS codes and descriptions.

⁵ Available at <https://nppes.cms.hhs.gov/NPPES/Welcome.do>

2. Source Data for the PUF

The *CMS 2010 PSBS PUF* is based on 100 percent of Medicare claims for beneficiaries who are enrolled in the fee-for-service (FFS) program as well as enrollment and eligibility data for 2010. These are non-institutional final action claims in 2010.

3. Content of the PUF

The most important aspects of the *CMS 2010 PSBS PUF* are as follows:

- a) It contains information from 100% of the 2010 Medicare FFS beneficiary population and various levels of physician/supplier characteristics by Provider ID, Provider State of Service, and Provider Hospital Referral Region.
- b) It contains detailed break down of beneficiaries served by each physician/supplier including sex, age category, race, dual eligibility status, and chronic conditions.
- c) Every beneficiary count variable in the PUF contains at least 11 beneficiaries. The value is suppressed if there are less than 11 beneficiaries for a particular break down (e.g., race).
- d) The fact that the PUF does not provide beneficiary-level information reduces concern about the privacy of the beneficiaries. Nevertheless, the PUF is tested rigorously to ensure that it can be released to the public without compromising beneficiaries' privacy.

4. Variables of the PUF

The *CMS 2010 PSBS PUF* contains 135 variables:

- 1) Provider ID.
- 2) State where physician/supplier provides services.
- 3) Hospital referral region of the physician/supplier place of service.
- 4) Type of physician/supplier reported in NPPES (Individual or Organization).
- 5) Physician/supplier credentials associated with the NPI reported in NPPES.
- 6) Physician/supplier gender reported in NPPES.
- 7) Sole proprietor indicator reported in NPPES.
- 8) Sub-part organization indicator reported in NPPES.
- 9) Mailing state abbreviation associated with the physician/supplier reported in NPPES.
- 10) Practice state abbreviation associated with the physician/supplier reported in NPPES.
- 11) Mailing zip code associated with the physician/supplier reported in NPPES.
- 12) Practice zip code associated with the physician/supplier reported in NPPES.
- 13) Physician/Supplier NPI from the Part B non-institutional claim Matched in NPPES.
- 14) Name associated with the physician/supplier reported in NPPES.

- 15) Alternate name associated with the physician/supplier reported in NPPES.
- 16) Main specialty of a physician/supplier.⁶
- 17) Number of beneficiaries receiving services from the physician/supplier.
- 18) Total number of physician/supplier events for part B non-institutional services.
- 19) Total number of service lines from the Part B non-institutional claims.
- 20) Number of beneficiaries deceased within the calendar who received services from the physician/supplier.
- 21) Number of non-Hispanic white beneficiaries receiving services from the physician/supplier.
- 22) Number of non-Hispanic black beneficiaries receiving services from the physician/supplier.
- 23) Number of Hispanic beneficiaries receiving services from the physician/supplier.
- 24) Number of Asian Pacific Islander beneficiaries receiving services from the physician/supplier.
- 25) Number of Alaskan Native or American Indian beneficiaries receiving services from the physician/supplier.
- 26) Number of all other beneficiaries not elsewhere classified receiving services from the physician/supplier.
- 27) Number of male beneficiaries receiving services from the physician/supplier.
- 28) Number of female beneficiaries receiving services from the physician/supplier.
- 29) Number of beneficiaries under the age of 65 years receiving services from the physician/supplier.
- 30) Number of beneficiaries between the ages of 65 and 69 receiving services from the physician/supplier.
- 31) Number of beneficiaries between the ages of 70 and 74 receiving services from the physician/supplier.
- 32) Number of beneficiaries between the ages of 75 and 79 receiving services from the physician/supplier.
- 33) Number of beneficiaries between the ages of 80 and 84 receiving services from the physician/supplier.
- 34) Number of beneficiaries over the age of 84 receiving services from the physician/supplier.
- 35) Number of Medicare beneficiaries qualified to receive Medicaid benefits and receiving services from the physician/supplier.
- 36) Number of Medicare beneficiaries not qualified to receive Medicaid benefits and receiving services from the physician/supplier.

⁶ Table 5 provides a list of all the provider specialties.

- 37) Number of beneficiaries meeting the CCW chronic condition algorithm for atrial fibrillation and receiving services from the physician/supplier.
- 38) Number of beneficiaries meeting the CCW chronic condition algorithm for Alzheimer's Disease and receiving services from the physician/supplier.
- 39) Number of beneficiaries meeting the CCW chronic condition algorithm for Alzheimer's broad classification including dementia and receiving services from the physician/supplier.
- 40) Number of beneficiaries meeting the CCW chronic condition algorithm for acute myocardial infarction (AMI) and receiving services from the physician/supplier.
- 41) Number of beneficiaries meeting the CCW chronic condition algorithm for anemia and receiving services from the physician/supplier.
- 42) Number of beneficiaries meeting the CCW chronic condition algorithm for asthma and receiving services from the physician/supplier.
- 43) Number of beneficiaries meeting the CCW chronic condition algorithm for breast cancer and receiving services from the physician/supplier.
- 44) Number of beneficiaries meeting the CCW chronic condition algorithm for cataracts and receiving services from the physician/supplier.
- 45) Number of beneficiaries meeting the CCW chronic condition algorithm for congestive heart failure (CHF) and receiving services from the physician/supplier.
- 46) Number of beneficiaries meeting the CCW chronic condition algorithm for chronic kidney disease (CKD) and receiving services from the physician/supplier.
- 47) Number of beneficiaries meeting the CCW chronic condition algorithm for chronic obstructive pulmonary disease (COPD) and receiving services from the physician/supplier.
- 48) Number of beneficiaries meeting the CCW chronic condition algorithm for colorectal cancer and receiving services from the physician/supplier.
- 49) Number of beneficiaries meeting the CCW chronic condition algorithm for depression and receiving services from the physician/supplier.
- 50) Number of beneficiaries meeting the CCW chronic condition algorithm for diabetes and receiving services from the physician/supplier.
- 51) Number of beneficiaries meeting the CCW chronic condition algorithm for endometrial cancer and receiving services from the physician/supplier.
- 52) Number of beneficiaries meeting the CCW chronic condition algorithm for glaucoma and receiving services from the physician/supplier.
- 53) Number of beneficiaries meeting the CCW chronic condition algorithm for hip fracture and receiving services from the physician/supplier.
- 54) Number of beneficiaries meeting the CCW chronic condition algorithm for hyperlipidemia and receiving services from the physician/supplier.

- 55) Number of beneficiaries meeting the CCW chronic condition algorithm for benign prostatic hyperplasia and receiving services from the physician/supplier.
- 56) Number of beneficiaries meeting the CCW chronic condition algorithm for hypertension and receiving services from the physician/supplier.
- 57) Number of beneficiaries meeting the CCW chronic condition algorithm for acquired hypothyroidism and receiving services from the physician/supplier.
- 58) Number of beneficiaries meeting the CCW chronic condition algorithm for ischemic heart disease (IHD) and receiving services from the physician/supplier.
- 59) Number of beneficiaries meeting the CCW chronic condition algorithm for lung cancer and receiving services from the physician/supplier.
- 60) Number of beneficiaries meeting the CCW chronic condition algorithm for osteoporosis and receiving services from the physician/supplier.
- 61) Number of beneficiaries meeting the CCW chronic condition algorithm for prostate cancer and receiving services from the physician/supplier.
- 62) Number of beneficiaries meeting the CCW chronic condition algorithm for rheumatoid arthritis/osteoarthritis (RAOA) and receiving services from the physician/supplier.
- 63) Number of beneficiaries meeting the CCW chronic condition algorithm for stroke/transient ischemic attack and receiving services from the physician/supplier.
- 64) Number of beneficiaries with ambulatory surgical center DME events.
- 65) Number of ambulatory surgical center DME events.
- 66) Number of beneficiaries with ambulatory surgical center other events.
- 67) Number of ambulatory surgical center other events.
- 68) Number of beneficiaries with ambulatory surgical center procedure events.
- 69) Number of ambulatory surgical center procedure events.
- 70) Number of beneficiaries with drugs administered through DME.
- 71) Number of drugs administered through DME events.
- 72) Number of beneficiaries with DME events.
- 73) Number of DME events.
- 74) Number of beneficiaries with DME orthotic device events.
- 75) Number of DME orthotic device events.
- 76) Number of beneficiaries with chemotherapy events.
- 77) Number of chemotherapy events.
- 78) Number of beneficiaries with immunization events.
- 79) Number of immunization events.
- 80) Number of beneficiaries with other drug events.
- 81) Number of other drug events.
- 82) Number of beneficiaries with parenteral and enteral nutrition events.
- 83) Number of parenteral and enteral nutritional events.

- 84) Number of beneficiaries with consultation visit events.
- 85) Number of consultation visit events.
- 86) Number of beneficiaries with emergency room visit events.
- 87) Number of emergency room visit events.
- 88) Number of beneficiaries with home and nursing home visit events.
- 89) Number of home and nursing home visit events.
- 90) Number of beneficiaries with hospital visit events.
- 91) Number of hospital visit events.
- 92) Number of beneficiaries with office visit events.
- 93) Number of office visit events.
- 94) Number of beneficiaries with specialist visit events.
- 95) Number of specialist visit events.
- 96) Number of beneficiaries with advanced imaging events.
- 97) Number of advanced imaging events.
- 98) Number of beneficiaries with echography/ultrasonography events.
- 99) Number of echography/ultrasonography events.
- 100) Number of beneficiaries with imaging procedure events.
- 101) Number of imaging procedure events.
- 102) Number of beneficiaries with standard imaging events.
- 103) Number of standard imaging events.
- 104) Number of beneficiaries with lab service events.
- 105) Number of lab service events.
- 106) Number of beneficiaries with test events.
- 107) Number of test events.
- 108) Number of beneficiaries with ambulance service events.
- 109) Number of ambulance service events.
- 110) Number of beneficiaries with chiropractic service events.
- 111) Number of chiropractic service events.
- 112) Number of beneficiaries with all other events.
- 113) Number of all other events.
- 114) Number of beneficiaries with vision, hearing and speech events.
- 115) Number of vision, hearing and speech events.
- 116) Number of beneficiaries with anesthesia procedure events.
- 117) Number of anesthesia procedure events.
- 118) Number of beneficiaries with ambulatory procedure events.
- 119) Number of ambulatory procedure events.
- 120) Number of beneficiaries with dialysis procedure events.
- 121) Number of dialysis procedure events.

- 122) Number of beneficiaries with endoscopy procedure procedure events.
- 123) Number of endoscopy procedure events.
- 124) Number of beneficiaries with eye procedure events.
- 125) Number of eye procedure events.
- 126) Number of beneficiaries with major cardiovascular procedure events.
- 127) Number of major cardiovascular procedure events.
- 128) Number of beneficiaries with major orthopedic procedure events.
- 129) Number of major orthopedic procedure events.
- 130) Number of beneficiaries with other major procedure events.
- 131) Number of other major procedure events.
- 132) Number of beneficiaries with minor procedure events.
- 133) Number of minor procedure events.
- 134) Number of beneficiaries with oncology procedure events.
- 135) Number of oncology procedure events.

See the Data Dictionary & Codebook for more information on the construction of the variables.

5. Methodology and Key Assumptions

The *CMS 2010 PSBS PUF* is an NPI-level PUF which summarizes non-institutional claims covered by Medicare Part B. The PPS file contains multiple records per NPI. Because a single rendering physician/supplier can potentially bill in multiple states, an NPI summary record exists for each unique combination of NPI, state of service and hospital referral region (HRR). This structure of the PSBS file allows flexibility in extracting various levels of physician/supplier information. Also, not all variables of the *CMS 2010 PSBS PUF* are applicable to every NPI. For example, the variable "NPPES_CREDENTIALS" is only valid for physicians/suppliers that are individuals. Users should refer to the Data Dictionary & Codebook for more details on each of the variables in the *CMS 2010 PSBS PUF*.

Even though the PUF does not provide beneficiary-level information, the privacy of the beneficiaries is protected by suppressing some of the variable values (e.g., for demographic variables) unless they contain eleven (11) or more beneficiaries. The requirement for maintaining the privacy of beneficiaries is that every beneficiary count variable in the PUF contains at least 11 beneficiaries for categories of variables (e.g., race, age). Table 1 shows the effect of the suppression by comparing the values of variables before and after the suppression. The suppression rates for variables with small number of beneficiaries (e.g., Race_other) are larger than variables with millions of beneficiaries (e.g., Male). NPIs that are associated with

small beneficiary counts, as determined by the suppression rules, are removed from the *CMS 2010 PSBS PUF* completely.⁷

6. Analytic Utility of the PUF

The *CMS 2010 PSBS PUF* provides information from 911,905 unique physicians/suppliers in 306 HRRs.⁸ In terms of number of physicians/suppliers per HRR, "MT-WA – Spokane, PA-DC – Washington, WI-MI – Marquette, and WV-KY - Lexington" are the smallest HRRs with 1 physician/supplier and "MA - Boston" is the largest with 27,271 physicians/suppliers. However, in terms of the total number of beneficiaries utilizing the services of the providers, "WI-MI – Marquette" is the smallest and "CA – Los Angeles" is the largest. Table 3 provides the largest and Table 4 provides the smallest HRRs in the *CMS 2010 PSBS PUF* in terms of the number of physicians/suppliers.

Note that the demographic variables (based on age, gender, dual eligibility status, etc.) and other variables that provide beneficiary counts cannot be aggregated as that would lead to double counting of beneficiaries using services from different physicians/suppliers.

7. Support for the PUF and Further Information

The construction of the variables in the *CMS 2010 PSBS PUF* is detailed in the Data Dictionary, which users interested in the source variables and their relationships to the variables in the *CMS 2010 PSBS PUF* are encouraged to review. Further information about the source files and variables is available on the CCW website.⁹ Questions about the *CMS 2010 PSBS PUF* can be submitted to the Research Data Assistance Center (ResDAC)¹⁰ at the University of Minnesota by calling 1-888-9RESDAC or by sending an email to resdac@umn.edu.

Users can request any of the files used in the construction of the *CMS 2010 PSBS PUF* or any other CMS data files by following the instructions on the CMS website.¹¹

⁷ 438 observations are removed because of missing or invalid NPIs. An additional 188,164 observations belonging to 181,022 distinct physicians/suppliers that provided services to less than 11 beneficiaries in 2010 were removed from the *CMS 2010 PSBS PUF*.

⁸ The *CMS 2010 PSBS PUF* also contains physicians/suppliers for which the HRR is missing (XX–Unknown). Table 6 provides a list of all the HRRs.

⁹ <http://www.ccwdata.org/data-dictionaries/index.htm>
http://www.ccwdata.org/cs/groups/public/documents/document/ccw_techguideresearchers.pdf
http://www.ccwdata.org/cs/groups/public/documents/document/ccw_conditioncategories.pdf

¹⁰ <http://www.resdac.org/>

¹¹ <http://www.cms.gov/FilesForOrderGenInfo/>

Table 1. Suppression in the CMS 2010 PSBS PUF

Variable	Initial File	CMS 2010 PSBS PUF	Suppression Rate
Bene_Cnt	356,943,000	356,143,602	0.22%
Total_Events	1,285,062,846	1,280,831,402	0.33%
Total_Srvc	1,598,288,722	1,593,455,380	0.30%
Death_Bene_Cnt	28,457,106	26,795,651	5.84%
Age_65_69	63,285,250	61,437,248	2.92%
Age_70_74	64,775,699	63,153,187	2.50%
Age_75_79	58,569,513	56,812,026	3.00%
Age_80_84	52,229,304	50,080,374	4.11%
Age_Over_84	57,053,988	55,054,022	3.51%
Male	146,965,798	145,549,172	0.96%
Female	209,977,202	203,877,165	2.91%
Race_White	289,549,618	284,166,344	1.86%
Race_Black	36,216,870	34,276,608	5.36%
Race_Hispn	20,014,372	17,904,676	10.54%
Race_Api	6,763,951	5,127,933	24.19%
Race_Natind	1,616,711	1,055,873	34.69%
Race_Other	2,781,478	819,037	70.55%
Dual	93023233	90,147,260	3.09%
Non_Dual	263919767	248,269,092	5.93%
Afib_Bene_Cnt	51,556,502	49,850,712	3.31%
Alz_Bene_Cnt	25,155,295	23,253,520	7.56%
Alzrdsd_Bene_Cnt	57,131,791	55,417,439	3.00%
Ami_Bene_Cnt	8,644,054	6,863,235	20.60%
Anemia_Bene_Cnt	146,273,189	145,000,271	0.87%
Asthma_Bene_Cnt	31,024,267	28,970,464	6.62%
Brc_Bene_Cnt	15,467,045	13,182,635	14.77%
Cat_Bene_Cnt	83,008,016	81,569,366	1.73%
Chf_Bene_Cnt	102,386,499	100,926,876	1.43%
Ckd_Bene_Cnt	96,804,918	95,316,154	1.54%
Copd_Bene_Cnt	75,652,279	74,075,942	2.08%
Crc_Bene_Cnt	8,112,026	6,035,496	25.60%
Depr_Bene_Cnt	83,132,881	81,627,144	1.81%
Diab_Bene_Cnt	133,722,391	132,536,314	0.89%
Endc_Bene_Cnt	1,541,582	523,471	66.04%
Glcm_Bene_Cnt	43,061,361	41,214,062	4.29%
Hfrac_Bene_Cnt	7,555,924	5,787,545	23.40%
Hyperl_Bene_Cnt	201,663,409	200,660,191	0.50%

Variable	Initial File	CMS 2010 PSBS PUF	Suppression Rate
Hyperp_Bene_Cnt	30,541,524	28,678,320	6.10%
Hypert_Bene_Cnt	263,676,726	262,755,805	0.35%
Hypoth_Bene_Cnt	48,948,187	47,204,784	3.56%
Ihd_Bene_Cnt	163,873,156	162,694,545	0.72%
Lngc_Bene_Cnt	8,204,195	6,287,888	23.36%
Ost_Bene_Cnt	37,187,179	35,328,697	5.00%
Prc_Bene_Cnt	15,404,635	13,293,476	13.70%
Raoa_Bene_Cnt	146,591,940	145,437,078	0.79%
Strk_Bene_Cnt	30,524,391	28,566,847	6.41%
Asc_Dmeasc_Bene_Cnt	692,575	692,081	0.07%
Asc_Othasc_Bene_Cnt	147,050	142,689	2.97%
Asc_Prcasc_Bene_Cnt	3,509,752	3,508,768	0.03%
Dme_Dmedg_Bene_Cnt	1,156,507	986,583	14.69%
Dme_Dmes_Bene_Cnt	12,588,143	12,450,304	1.09%
Dme_Po_Bene_Cnt	3,662,324	3,552,872	2.99%
Drug_Chemo_Bene_Cnt	588,176	544,772	7.38%
Drug_Imm_Bene_Cnt	15,686,399	15,401,811	1.81%
Drug_Othdg_Bene_Cnt	11,031,165	10,418,541	5.55%
Drug_Pen_Bene_Cnt	195,242	169,003	13.44%
Em_Consul_Bene_Cnt	2,920	2,342	19.79%
Em_Er_Bene_Cnt	17,741,923	17,583,481	0.89%
Em_Hnh_Bene_Cnt	7,173,509	7,017,591	2.17%
Em_Hosp_Bene_Cnt	36,061,350	35,603,026	1.27%
Em_Off_Bene_Cnt	103,515,773	103,119,941	0.38%
Em_Spec_Bene_Cnt	22,547,819	22,123,354	1.88%
Img_Adv_Bene_Cnt	19,936,817	19,866,403	0.35%
Img_Echo_Bene_Cnt	22,109,378	21,847,712	1.18%
Img_Prc_Bene_Cnt	4,098,115	3,934,968	3.98%
Img_Std_Bene_Cnt	57,794,151	57,513,788	0.49%
Lab_Bene_Cnt	61,291,743	60,983,302	0.50%
Test_Bene_Cnt	36,022,569	35,550,284	1.31%
Other_Amb_Bene_Cnt	6,656,631	6,651,629	0.08%
Other_Chir_Bene_Cnt	2,357,730	2,311,304	1.97%
Other_Oth_Bene_Cnt	3,160,439	2,921,466	7.56%
Other_Vhs_Bene_Cnt	1,846	949	48.59%
Proc_Anes_Bene_Cnt	12,762,488	12,725,327	0.29%
Proc_Ambly_Bene_Cnt	10,922,724	10,218,040	6.45%
Proc_Dialys_Bene_Cnt	1,096,995	1,076,498	1.87%

Variable	Initial File	CMS 2010 PSBS PUF	Suppression Rate
Proc_Endo_Bene_Cnt	6,770,498	6,554,087	3.20%
Proc_Eye_Bene_Cnt	3,013,660	2,951,035	2.08%
Proc_Majcar_Bene_Cnt	3,114,963	2,894,200	7.09%
Proc_Majort_Bene_Cnt	1,634,574	1,494,665	8.56%
Proc_Majoth_Bene_Cnt	2,627,586	2,175,162	17.22%
Proc_Minor_Bene_Cnt	30,731,471	29,722,887	3.28%
Proc_Oncol_Bene_Cnt	1,288,335	1,238,821	3.84%

Table 2. Total Physicians and Beneficiaries by Specialty in the CMS 2010 PSBS PUF

Specialty	Number of Physicians	Number of Beneficiaries	Number of Events	Number of Service Line Items
1	9,349	1,940,897	9,949,430	11,111,704
2	21,123	4,687,743	12,426,586	13,139,294
3	3,319	487,111	3,537,856	3,848,553
4	9,005	3,382,057	9,933,002	10,738,399
5	37,424	8,233,010	13,678,981	14,708,989
6	25,895	26,041,676	83,471,659	93,878,191
7	10,960	7,091,922	23,569,939	29,342,851
8	81,366	20,056,073	106,974,768	118,678,502
9	2,010	620,285	4,136,752	5,053,448
10	12384	5,531,362	13,988,025	14,756,419
11	96,459	32,211,676	169,424,409	186,974,439
12	709	118,199	708,206	821,970
13	13,045	4,543,610	12,450,276	14,012,550
14	4,573	902,615	2,120,524	2,569,182
15	247	10,888	94,956	104,082
16	27,719	2,673,660	7,061,293	7,580,643
17	143	21,365	58,746	60,878
18	21,242	13,237,273	35,118,608	48,288,535
19	1,804	91,309	166,401	181,616
20	24,168	7,078,253	28,024,057	32,330,498
21	1	11	13	13
22	12,015	8,467,228	12,034,579	18,774,096
24	4,554	514,215	1,537,817	1,803,339
25	7,610	2,093,140	11,145,424	13,255,560
26	24,451	3,340,441	15,524,628	15,599,188
27	28	7,094	25,873	25,958
28	1,197	306,544	753,001	779,421
29	9,239	4,641,817	18,554,685	21,357,276
30	35,748	56,353,067	93,188,030	106,302,016
32	926	117,518	122,045	122,226
33	2,166	428,281	1,105,221	1,235,771
34	9,919	5,216,722	26,684,492	28,373,354
35	37,720	2,314,909	22,521,265	22,530,218
36	654	499,441	746,119	854,975
37	2,101	276,455	1,087,240	1,232,594
38	1,716	556,248	2,689,625	2,832,193
39	7,831	3,425,407	17,625,090	18,472,477

Specialty	Number of Physicians	Number of Beneficiaries	Number of Events	Number of Service Line Items
40	1,069	275,220	1,024,172	1,151,054
41	31,700	5,940,815	9,528,619	12,428,445
42	540	15,471	30,989	32,650
43	37,001	5,447,707	5,899,084	5,910,130
44	4,813	1,490,083	7,364,747	7,836,991
45	20	20,834	38,600	42,193
46	4,622	1,598,307	7,284,709	8,991,391
47	3,938	2,721,371	4,743,484	5,648,699
48	21,574	7,713,979	31,491,232	35,038,361
49	4,878	3,577,721	6,376,018	7,536,851
50	46,350	6,830,872	20,768,541	22,235,003
51	385	274,408	547,500	827,636
52	297	78,174	157,709	271,563
53	680	214,063	430,812	771,123
54	8,596	5,635,428	27,896,119	42,545,960
55	1,153	274,684	493,591	1,013,689
56	1,199	196,396	261,401	646,862
57	94	31,517	49,035	100,897
58	30	22,728	83,008	151,998
59	10,036	6,652,621	14,169,437	29,223,106
60	1,047	340,894	414,463	672,541
62	163	12,239	99,671	100,242
63	454	1,233,292	4,220,140	6,383,805
64	5,308	733,993	819,146	1,575,505
65	32,932	2,342,304	29,441,290	52,482,570
66	4,078	1,462,371	9,529,376	11,962,417
67	3,516	183,437	1,755,175	3,485,396
68	13,232	778,214	5,375,745	5,431,229
69	2,898	25,937,093	168,175,965	266,483,663
70	850	117,365	336,812	417,781
71	1,467	77,614	128,438	129,629
72	758	217,597	1,308,903	1,585,593
73	28,067	5,827,297	6,299,063	11,859,510
74	51	15,978	264,258	333,969
75	25	105,185	153,494	164,688
76	84	58,431	162,900	179,332
77	2,724	1,670,767	4,154,742	4,667,444
78	1,763	407,941	1,083,367	1,249,486

Specialty	Number of Physicians	Number of Beneficiaries	Number of Events	Number of Service Line Items
79	96	12,653	54,522	57,793
80	13,082	416,257	3,854,187	3,918,871
81	2,023	591,710	2,067,312	2,261,684
82	719	166,106	1,587,238	1,960,241
83	7,865	2,683,951	32,316,238	41,071,417
84	297	53,156	191,481	227,872
85	1,022	46,781	89,899	96,539
86	117	21,824	86,892	91,145
87	511	84,312	112,688	193,248
88	15	7,396	12,275	17,794
89	1,945	230,556	817,933	832,454
90	2,765	885,667	9,997,086	12,636,958
91	646	113,692	278,382	303,771
92	4,449	989,276	8,113,197	10,367,718
93	43,001	16,264,943	25,657,559	26,343,826
94	1,142	1,397,469	2,586,744	3,013,102
95	1	13	18	32
96	1,920	83,153	87,740	209,381
97	39,187	5,723,420	13,480,165	14,720,849
98	876	145,393	659,358	843,633
99	2,221	255,931	1,085,559	1,440,620
A0	99	17,907	63,976	92,065
A1	138	3,832	43,704	67,016
A2	5	190	2,655	4,424
A3	33	1,038	10,897	17,285
A4	27	12,627	60,655	86,210
A5	42,794	6,555,252	35,414,654	48,478,151
A6	1,972	1,287,791	7,373,573	10,584,966
A7	51	4,752	5,496	11,868
B1	36	12,960	68,275	103,500
B2	26	2,320	3,530	6,829
B3	36	17,341	46,138	93,298
Total	1,008,329	356,143,602	1,280,831,402	1,593,455,380

Note: Each count is the sum over all observations in the PUF which includes potentially duplicated beneficiaries (and associated events and service line items) different providers across states and hospital referral regions.

Table 3. Largest HRRs in the CMS 2010 PSBS PUF

HRR	Number of Physicians	Number of Beneficiaries	Number of Events
MA - Boston	22,163	7,196,047	21,868,868
NY - Manhattan	19,419	5,253,932	22,256,151
CA - Los Angeles	19,243	7,218,511	34,269,025
PA - Philadelphia	15,839	5,438,200	18,516,102
OH - Cleveland	15,425	5,064,046	11,090,486
NY - East Long Island	15,370	5,609,319	25,811,981
GA - Atlanta	14,833	5,672,949	19,796,566
TX - Houston	14,479	5,265,319	20,622,052
MN - Minneapolis	12,060	2,280,322	6,649,730
TX - Dallas	11,367	5,109,909	18,821,535
PA - Pittsburgh	10,999	2,746,460	8,713,138
MO - St. Louis	10,692	4,102,236	13,627,344
WI - Milwaukee	10,499	2,903,752	9,626,762
MD - Baltimore	10,483	4,204,873	13,079,415
WA - Seattle	10,300	2,658,477	8,380,755
AZ - Phoenix	10,077	3,782,442	10,887,661
NJ - Camden	9,957	4,478,553	14,769,633
FL - Orlando	9,164	4,865,388	19,889,705
OH - Columbus	8,783	3,442,850	11,778,127
DC - Washington	8,622	2,704,044	9,020,221

Table 4. Smallest HRRs in the CMS 2010 PSBS PUF

HRR	Number of Physicians	Number of Beneficiaries	Number of Events
LA - Slidell	470	129,978	470,954
TX - Longview	468	261,449	960,805
KY - Owensboro	459	230,623	986,844
ND - Minot	459	130,997	332,749
IA - Mason City	446	203,873	510,552
TX - Wichita Falls	436	241,404	877,847
TX - San Angelo	398	195,568	785,390
MI - St. Joseph	390	175,355	573,395
TX - Victoria	355	193,766	824,388
MS - Oxford	310	164,899	626,618

Table 5. Description of Provider Specialty

Value	Description	Value	Description
1	General Practice	56	Individual Certified Prosthetist
2	General Surgery	57	Individual Certified Prosthetist-Orthotist
3	Allergy/Immunology	58	Medical Supply Company W/Pharmacist
4	Otolaryngology	59	Ambulance Service Supplier
5	Anesthesiology	60	Public Health Welfare Agency
6	Cardiology	62	Psychologist (billing independently)
7	Dermatology	63	Portable X-ray
8	Family Practice	64	Audiologist (billing independently)
9	Interventional Pain Management	65	Physical Therapist
10	Gastroenterology	66	Rheumatology
11	Internal Medicine	67	Occupational therapist
12	Osteopathic Manipulative Therapy	68	Clinical Psychologist
13	Neurology	69	Clinical Laboratory
14	Neurosurgery	70	Multispecialty Clinic/Group Practice
15	Speech Language Pathologist	71	Registered Dietician/Nutrition Professional
16	Obstetrics/Gynecology	72	Pain Management
17	Hospice & Palliative Care	73	Mass Immunization Roster Biller
18	Ophthalmology	74	Radiation Therapy
19	Oral Surgery	75	Slide Preparation Facility
20	Orthopedic Surgery	76	Peripheral/Vascular Disease
21	Cardiac Electrophysiology	77	Vascular Surgery
22	Pathology	78	Cardiac Surgery
23	Sports Medicine	79	Addiction Medicine
24	Plastic/Reconstructive Surgery	80	Licensed Clinical Social Worker
25	Physical Medicine/Rehabilitation	81	Critical Care (Intensivists)
26	Psychiatry	82	Hematology
27	Geriatric Psychiatry	83	Hematology/Oncology
28	Colorectal Surgery	84	Preventive Medicine
29	Pulmonary Disease	85	Maxillofacial Surgery
30	Diagnostic Radiology	86	Neuropsychiatry
32	Anesthesiologist Assistants	87	All Other Suppliers
33	Thoracic Surgery	88	Unknown Supplier/Provider
34	Urology	89	Certified Clinical Nurse Specialist

Value	Description	Value	Description
35	Chiropractic	90	Medical Oncology
36	Nuclear Medicine	91	Surgical Oncology
37	Pediatric Medicine	92	Radiation Oncology
38	Geriatric Medicine	93	Emergency Medicine
39	Nephrology	94	Interventional Radiology
40	Hand Surgery	95	Advanced Diagnostic Imaging
41	Optometry	96	Optician
42	Certified Nurse Midwife	97	Physician Assistant
43	CRNA	98	Gynecologist/Oncologist
44	Infectious Disease	99	Unknown Physician
45	Mammographic Screening Center	A0	Hospital
46	Endocrinology	A1	Skilled Nursing Facility
47	Independent Diagnostic Testing Facility	A2	Intermediate Care Nursing Facility
48	Podiatry	A3	Nursing Facility, Other
49	Ambulatory Surgical Center	A4	Home Health Agency
50	Nurse Practitioner	A5	Pharmacy
51	Medical Supply Company W/Cert Orthotist	A6	Medical Supply Company W/Respir. Therapist
52	Medical Supply Company W/Prosthetist	A7	Department Store
53	Medical Supply Company W/Cert Prost/Orthotist	B1	Unknown
54	Medical Supply Not Pros/Orth Personnel	B2	Pedorthic Personnel
55	Individual Certified Orthotist	B3	Medical Supply Company W/Pedorthic

Table 6. Hospital Referral Regions

State - City	State - City	State - City
AK - Anchorage	CO - Boulder	IA - Des Moines
AL - Birmingham	CO - Colorado Springs	IA - Dubuque
AL - Dothan	CO - Denver	IA - Iowa City
AL - Huntsville	CO - Fort Collins	IA - Mason City
AL - Mobile	CO - Grand Junction	IA - Sioux City
AL - Montgomery	CO - Greeley	IA - Waterloo
AL - Tuscaloosa	CO - Pueblo	ID - Boise
AR - Fort Smith	CT - Bridgeport	ID - Idaho Falls
AR - Jonesboro	CT - Hartford	IL - Aurora
AR - Little Rock	CT - New Haven	IL - Bloomington
AR - Springdale	DC - Washington	IL - Blue Island
AR - Texarkana	DE - Wilmington	IL - Chicago
AZ - Mesa	FL - Bradenton	IL - Elgin
AZ - Phoenix	FL - Clearwater	IL - Evanston
AZ - Sun City	FL - Fort Lauderdale	IL - Hinsdale
AZ - Tucson	FL - Fort Myers	IL - Joliet
CA - Alameda County	FL - Gainesville	IL - Melrose Park
CA - Bakersfield	FL - Hudson	IL - Peoria
CA - Chico	FL - Jacksonville	IL - Rockford
CA - Contra Costa County	FL - Lakeland	IL - Springfield
CA - Fresno	FL - Miami	IL - Urbana
CA - Los Angeles	FL - Ocala	IN - Evansville
CA - Modesto	FL - Orlando	IN - Fort Wayne
CA - Napa	FL - Ormond Beach	IN - Gary
CA - Orange County	FL - Panama City	IN - Indianapolis
CA - Palm Springs/Rancho Mirage	FL - Pensacola	IN - Lafayette
CA - Redding	FL - Sarasota	IN - Muncie
CA - Sacramento	FL - St. Petersburg	IN - Munster
CA - Salinas	FL - Tallahassee	IN - South Bend
CA - San Bernardino	FL - Tampa	IN - Terre Haute
CA - San Diego	GA - Albany	KS - Topeka
CA - San Francisco	GA - Atlanta	KS - Wichita
CA - San Jose	GA - Augusta	KY - Covington
CA - San Luis Obispo	GA - Columbus	KY - Lexington
CA - San Mateo County	GA - Macon	KY - Louisville
CA - Santa Barbara	GA - Rome	KY - Owensboro
CA - Santa Cruz	GA - Savannah	KY - Paducah
CA - Santa Rosa	HI - Honolulu	LA - Alexandria
CA - Stockton	IA - Cedar Rapids	LA - Baton Rouge
CA - Ventura	IA - Davenport	LA - Houma

State - City	State - City	State - City
LA - Lafayette	NJ - Paterson	PA - Reading
LA - Lake Charles	NJ - Ridgewood	PA - Sayre
LA - Metairie	NM - Albuquerque	PA - Scranton
LA - Monroe	NV - Las Vegas	PA - Wilkes-Barre
LA - New Orleans	NV - Reno	PA - York
LA - Shreveport	NY - Albany	RI - Providence
LA - Slidell	NY - Binghamton	SC - Charleston
MA - Boston	NY - Bronx	SC - Columbia
MA - Springfield	NY - Buffalo	SC - Florence
MA - Worcester	NY - East Long Island	SC - Greenville
MD - Baltimore	NY - Elmira	SC - Spartanburg
MD - Salisbury	NY - Manhattan	SD - Rapid City
MD - Takoma Park	NY - Rochester	SD - Sioux Falls
ME - Bangor	NY - Syracuse	TN - Chattanooga
ME - Portland	NY - White Plains	TN - Jackson
MI - Ann Arbor	OH - Akron	TN - Johnson City
MI - Dearborn	OH - Canton	TN - Kingsport
MI - Detroit	OH - Cincinnati	TN - Knoxville
MT - Great Falls	OH - Cleveland	TN - Memphis
MT - Missoula	OH - Columbus	TN - Nashville
NC - Asheville	OH - Dayton	TX - Abilene
NC - Charlotte	OH - Elyria	TX - Amarillo
NC - Durham	OH - Kettering	TX - Austin
NC - Greensboro	OH - Toledo	TX - Beaumont
NC - Greenville	OH - Youngstown	TX - Bryan
NC - Hickory	OK - Lawton	TX - Corpus Christi
NC - Raleigh	OK - Oklahoma City	TX - Dallas
NC - Wilmington	OK - Tulsa	TX - El Paso
NC - Winston-Salem	OR - Bend	TX - Fort Worth
ND - Bismarck	OR - Eugene	TX - Harlingen
ND - Fargo/Moorhead MN	OR - Medford	TX - Houston
ND - Grand Forks	OR - Portland	TX - Longview
ND - Minot	OR - Salem	TX - Lubbock
NE - Lincoln	PA - Allentown	TX - McAllen
NE - Omaha	PA - Altoona	TX - Odessa
NH - Lebanon	PA - Danville	TX - San Angelo
NH - Manchester	PA - Erie	TX - San Antonio
NJ - Camden	PA - Harrisburg	TX - Temple
NJ - Hackensack	PA - Johnstown	TX - Tyler
NJ - Morristown	PA - Lancaster	TX - Victoria
NJ - New Brunswick	PA - Philadelphia	TX - Waco

State - City	State - City	State - City
NJ - Newark	PA - Pittsburgh	TX - Wichita Falls
UT - Ogden	VT - Burlington	WI - Marshfield
UT - Provo	WA - Everett	WI - Milwaukee
UT - Salt Lake City	WA - Olympia	WI - Neenah
VA - Arlington	WA - Seattle	WI - Wausau
VA - Charlottesville	WA - Spokane	WV - Charleston
VA - Lynchburg	WA - Tacoma	WV - Huntington
VA - Newport News	WA - Yakima	WV - Morgantown
VA - Norfolk	WI - Appleton	WY - Casper
VA - Richmond	WI - Green Bay	XX - Unknown
VA - Roanoke	WI - La Crosse	
VA - Winchester	WI - Madison	

Table 7. BETOS Classifications

PSBS VARIABLE QUALIFIER	BETOS CODE ¹	BETOS DESCRIPTION
Ambulatory Surgical Center² ASC_DMEASC ASC_OTHASC_ ASC_PRCASC_	D1A-D1F * P1*-P9*	Durable Medical Equipment All other Betos Codes All Procedures
Durable Medical Equipment DME_DMES_ DME_DMES_ DME_DMES_ DME_DMES_ DME_DMES_ DME_PO_ DME_DMEDG_	D1A D1B D1C D1D D1E D1F D1G	Medical/surgical supplies Hospital beds Oxygen and supplies Wheelchairs Other DME Prosthetic/Orthotic devices Drugs Administered through DME
Drugs DRUG_PEN_ DRUG_CHEMO_ DRUG_OTHDG_ DRUG_IMM_	O1C O1D O1E O1G	Enteral and parenteral Chemotherapy Other drugs Immunizations/Vaccinations

PSBS VARIABLE QUALIFIER	BETOS CODE ¹	BETOS DESCRIPTION
Evaluation & Management EM_OFF_ EM_HOSP_ EM_ER_ EM_HNH_ EM_SPEC_ EM_CONSUL_	M1* M2* M3 M4* M5* M6*	Office Visits Hospital Visits Emergency Visits Home/Nursing Home Visits Specialist Visits Consultation Visits
Imaging IMG_STD_ IMG_ADV_ IMG_ECHO_ IMG_PRC_	I1* I2* I3* I4*	Standard imaging Advanced imaging Echography/ultrasonography Imaging/procedure
Tests LAB_ TESTS_	T1* T2*	Lab tests Other tests
Other OTHER_AMB_ OTHER_CHIRO_ OTHER_VHS_ OTHER_OTH_ OTHER_OTH_ OTHER_OTH_ OTHER_OTH_	O1A O1B O1F Y1 Y2 Z1	Ambulance Chiropractic Hearing and speech services Other - Medicare fee schedule Other - non-Medicare fee schedule Local codes Undefined codes
Procedures PROC_ANES_ PROC_MAJOTH_ PROC_MAJCAR_ PROC_MAJORT_ PROC_EYE_ PROC_AMBLTY_ PROC_MINOR_ PROC_ONCOL_ PROC_ENDO_ PROC_DIALYS_	P0 P1* P2* P3* P4* P5* P6* P7* P8* P9*	Anesthesia Major procedure - Other Major procedure, cardiovascular Major procedure, orthopedic Eye procedure Ambulatory procedures Minor procedures Oncology Endoscopy Dialysis services

¹Berenson-Eggers Type of Service Code was developed primarily for analyzing the growth in Medicare expenditures.

The Betos coding system assigns HCPCS codes to a single Betos code and consists of readily understood clinical categories that permit objective assignment.

²Includes line items with line_cms_type_srv_cd=F. These line items are excluded from all other event variables.