Medicare Fee-For-Service Provider Utilization & Payment Data Physician and Other Supplier Public Use File: A Methodological Overview

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1. Background

As part of the Obama Administration's efforts to make our healthcare system more transparent, affordable, and accountable, the Centers for Medicare & Medicaid Services (CMS) has prepared a public data set, the Provider Utilization and Payment Data Physician and Other Supplier Public Use File (herein referred to as "Physician and Other Supplier PUF"), with information on services and procedures provided to Medicare beneficiaries by physicians and other healthcare professionals. The Physician and Other Supplier PUF contains information on utilization, payment (allowed amount and Medicare payment), and submitted charges organized by National Provider Identifier (NPI), Healthcare Common Procedure Coding System (HCPCS) code, and place of service. This PUF is based on information from CMS's National Claims History (NCH) Standard Analytic Files (SAFs). The data in the Physician and Other Supplier PUF covers calendar years 2012 and 2013 and contains 100% final-action (i.e., all claim adjustments have been resolved) physician/supplier Part B non-institutional line items for the Medicare fee-for-service (FFS) population. Claims processed by Durable Medical Equipment, Prosthetic, Orthotics and Supplies (DMEPOS) Medicare Administrative Contractor (MAC) are not included in the Physician and Other Supplier PUF.

2. Key Data Sources

The primary data source for these data is CMS's National Claims History (NCH) Standard Analytic Files (SAFs) which include claims with dates of service within the reported calendar year and accreted to the NCH as of the June following the reported calendar year. The NCH SAFs contain 100 percent of Medicare final action claims for beneficiaries who are enrolled in the FFS program. The NCH contains a SAF for each type of Medicare claim type including institutional (i.e., hospital inpatient, hospital outpatient, skilled nursing, home health and hospice) and non-institutional (i.e., Part B physician/supplier and DMEPOS). Specifically, the Part B Physician/Supplier SAF was used to create the Physician and Other Supplier PUF, which includes services from physicians, non-physician practitioners, laboratories, imaging, ambulances, etc. (does not include claims from the DMEPOS SAF). Beneficiary and service counts, provider charges, Medicare allowed amounts and payments, place of service, provider type, and Medicare participation indicator were summarized from this SAF.

Provider demographics are also incorporated in the Physician and Other Supplier PUF including name, credentials, gender, complete address and entity type from the National Plan & Provider Enumeration System (NPPES), which CMS developed to assign unique identifiers, known as National Provider Identifiers (NPIs), to health care providers. The health care provider's demographic information is collected at time of enrollment and updated periodically by CMS approved Electronic File Interchange Organizations (EFIO) that submit information on behalf of the provider. The provider must approve of the updates to NPPES. The demographics information provided in the Physician and Other Supplier PUF was extracted from NPPES at the end of calendar year 2014. For additional information on NPPES, please visit https://nppes.cms.hhs.gov/NPPES/Welcome.do.

3. Population

The Physician and Other Supplier PUF includes data for providers that had a valid NPI and submitted Medicare Part B non-institutional claims (excluding DMEPOS) during the 2012 and 2013 calendar years. To protect the privacy of Medicare beneficiaries, any aggregated records which are derived from 10 or fewer beneficiaries are excluded from the Physician and Other Supplier PUF.

4. Aggregation

The spending and utilization data in the Physician and Other Supplier PUF is aggregated to the following:

a) the NPI for the performing provider,
b) the Healthcare Common Procedure Coding System (HCPCS) code, and
c) the place of service (either facility or non-facility).

There can be multiple records for a given NPI based on the number of distinct HCPCS codes that were billed and where the services were provided. Data has been aggregated based on the place of service because separate fee schedules apply depending on whether the place of service submitted on the claim is facility or non-facility.

The provider NPI is the numeric identifier registered in NPPES. HCPCS codes are used to identify services and procedures furnished by physicians and other health care professionals and include two levels. Level I codes are the Current Procedural Terminology (CPT) codes that are maintained by the American Medical Association and Level II codes are created by CMS to identify products, supplies and services not covered by the CPT codes (such as ambulance services). CPT codes, descriptions and other data only are copyright 2012 American Medical Association. All rights reserved. CPT is a registered trademark of the American Medical Association (AMA). Please review the complete CMS AMA CPT license agreement which is presented to users when accessing the data. For additional information on HCPCS codes, visit http://www.cms.gov/Medicare/Coding/MedHCPCSGenInfo/index.html?redirect=/MedHCPCSGeninfo/.

5. Data Contents

npi – National Provider Identifier (NPI) for the performing provider on the claim.

nppes_provider_last_org_name – When the provider is registered in NPPES as an individual (entity type code='I'), this is the provider's last name. When the provider is registered as an organization (entity type code = 'O'), this is the organization name.

nppes_provider_first_name – When the provider is registered in NPPES as an individual (entity type code='I'), this is the provider's first name. When the provider is registered as an organization (entity type code = 'O'), this will be blank.

nppes_provider_mi – When the provider is registered in NPPES as an individual (entity type code='I'), this is the provider's middle initial. When the provider is registered as an organization (entity type code = 'O'), this will be blank.

nppes_credentials – When the provider is registered in NPPES as an individual (entity type code='I'), these are the provider's credentials. When the provider is registered as an organization (entity type code = 'O'), this will be blank.

nppes_provider_gender – When the provider is registered in NPPES as an individual (entity type code='I'), this is the provider's gender. When the provider is registered as an organization (entity type code = 'O'), this will be blank.

nppes_entity_code – Type of entity reported in NPPES. An entity code of 'I' identifies providers registered as individuals and an entity type code of 'O' identifies providers registered as organizations.

nppes_provider_street1 – The first line of the provider's street address, as reported in NPPES.

nppes_provider_street2 – The second line of the provider's street address, as reported in NPPES.

nppes_provider_city – The city where the provider is located, as reported in NPPES.

nppes_provider_zip – The provider's zip code, as reported in NPPES.

nppes_provider_state – The state where the provider is located, as reported in NPPES. The fifty U.S. states and the District of Columbia are reported by the state postal abbreviation. The following values are used for all other areas:

'XX' = 'Unknown'
'AA' = 'Armed Forces Central/South America'
'AE' = 'Armed Forces Europe'
'AP' = 'Armed Forces Pacific'
'AS' = 'American Samoa'
'GU' = 'Guam'
'MP' = 'North Mariana Islands'
'PR' = 'Puerto Rico'
'VI' = 'Virgin Islands'
'ZZ' = 'Foreign Country'

nppes_provider_country – The country where the provider is located, as reported in NPPES. The country code will be 'US' for any state or U.S. possession. For foreign countries (i.e., state values of 'ZZ'), the provider country values include the following:

AE=United Arab Emirates	IT=Italy
AG=Antigua	JP=Japan
AR=Argentina	KR=Korea
AU=Australia	KW=Kuwait
BO=Bolivia	KY=Cayman Islands
BR=Brazil	LB=Lebanon

CA=Canada	MX=Mexico
CH=Switzerland	NL=Netherlands
CN=China	NO=Norway
CO=Colombia	NZ=New Zealand
DE= Germany	PA=Panama
ES= Spain	PK=Pakistan
FR=France	RW=Rwanda
GB=Great Britain	SA=Saudi Arabia
HU= Hungary	SY=Syria
IL= Israel	TH=Thailand
IN=India	TR=Turkey
IS= Iceland	VE=Venezuela

provider_type – Derived from the provider specialty code reported on the claim. For providers that reported more than one specialty code on their claims, this is the specialty code associated with the largest number of services.

medicare_participation_indicator – Identifies whether the provider participates in Medicare and/or accepts assignment of Medicare allowed amounts. The value will be 'Y' for any provider that had at least one claim identifying the provider as participating in Medicare or accepting assignment of Medicare allowed amounts within HCPCS code and place of service. A non-participating provider may elect to accept Medicare allowed amounts for some services and not accept Medicare allowed amounts for other services.

place_of_service – Identifies whether the place of service submitted on the claims is a facility (value of 'F') or non-facility (value of 'O'). Non-facility is generally an office setting; however other entities are included in non-facility. See "Appendix B – Place of Service Descriptions" for the types of entities included in facility and non-facility.

hcpcs_code – HCPCS code for the specific medical service furnished by the provider.

hcpcs_description – Description of the HCPCS code for the specific medical service furnished by the provider. HCPCS descriptions associated with CPT codes are consumer friendly descriptions provided by the AMA. All other descriptions are CMS Level II descriptions provided in long form. Due to variable length restrictions, the CMS Level II descriptions have been truncated to 256 bytes. As a result, the same HCPCS description can be associated with more than one HCPCS code. For complete CMS Level II descriptions, visit http://www.cms.gov/Medicare/Coding/HCPCSReleaseCodeSets/Alpha-Numeric-HCPCS.html.

hcpcs_drug_indicator –Identifies whether the HCPCS code for the specific service furnished by the provider is a HCPCS listed on the Medicare Part B Drug Average Sales Price (ASP) File. For additional information on the ASP drug pricing, visit http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Part-B-Drugs/McrPartBDrugAvgSalesPrice/index.html.

line_srvc_cnt – Number of services provided; note that the metrics used to count the number provided can vary from service to service.

bene_unique_cnt – Number of distinct Medicare beneficiaries receiving the service.

bene_day_srvc_cnt – Number of distinct Medicare beneficiary/per day services. Since a given beneficiary may receive multiple services of the same type (e.g., single vs. multiple cardiac stents) on a single day, this metric removes double-counting from the line service count to identify whether a unique service occurred.

average_Medicare_allowed_amt – Average of the Medicare allowed amount for the service; this figure is the sum of the amount Medicare pays, the deductible and coinsurance amounts that the beneficiary is responsible for paying, and any amounts that a third party is responsible for paying.

stdev_Medicare_allowed_amt – Standard deviation of the Medicare allowed amounts. The standard deviation indicates the amount of variation from the average Medicare allowed amount that exists within a single provider, HCPCS service, and place of service.

average_submitted_chrg_amt – Average of the charges that the provider submitted for the service.

stdev_submitted_chrg_amt – Standard deviation of the charge amounts submitted by the provider. The standard deviation indicates the amount of variation from the average submitted charge amount that exists within a single provider, HCPCS service, and place of service.

average_Medicare_payment_amt – Average amount that Medicare paid after deductible and coinsurance amounts have been deducted for the line item service. **Note:** In general, Medicare FFS claims with dates-of-service or dates-of-discharge on or after April 1, 2013, incurred a 2 percent reduction in Medicare payment. This is in response to mandatory across-the-board reductions in Federal spending, also known as sequestration. For additional information, visit http://www.cms.gov/Outreach-and-Education/Outreach/FFSProvPartProg/Downloads/2013-03-08-standalone.pdf

stdev_Medicare_payment_amt – Standard deviation of the Medicare payment amount. The standard deviation indicates the amount of variation from the average Medicare payment amount that exists within a single provider, HCPCS service, and place of service.

6. Supplemental Summary Data

Two summary type tables have been created to supplement the information reported in the Physician and Other Supplier PUF: 1) aggregated information by physician or other supplier (NPI) and 2) aggregated information by State/National and HCPCS code. The aggregated reports are not restricted to the redacted data reported in the Physician and Other Supplier PUF but are aggregated based on all Medicare Part B non-institutional claims (excluding DMEPOS).

Medicare Physician and Other Supplier Aggregate Table

The "Medicare Physician and Other Supplier Aggregate Table" contains information on utilization, payment (allowed amount and Medicare payment), and submitted charges organized by NPI. Sub totals for medical type services and drug type services are included as well as overall utilization, payment and

charges. In addition, a number of beneficiary demographic and health characteristics are provided which include age, sex, race, Medicare and Medicaid entitlement, chronic conditions and risk scores.

Medicare State/National HCPCS Aggregate Tables

The "Medicare State/National Aggregate Tables" contains information on utilization, payment (allowed amount and Medicare payment), and submitted charges organized by HCPCS and place of service in the national table and organized by provider state, HCPCS and place of service in the state table. The national and state tables also include a HCPCS drug indicator to identify whether the HCPCS product/service is a drug as defined from the Medicare Part B Drug ASP list.

More detailed information on the Medicare Physician and Other Supplier Aggregate Table and the Medicare State/National Aggregate tables are provided in the Methodology and Documentation tabs of each data file.

7. Data Limitations:

Although the Physician and Other Supplier PUF has a wealth of payment and utilization information about many Medicare Part B services, the dataset also has a number of limitations that are worth noting.

First, the data in the Physician and Other Supplier PUF may not be representative of a physician's entire practice. The data in the file only has information for Medicare beneficiaries with Part B FFS coverage, but physicians typically treat many other patients who do not have that form of coverage. The Physician and Other Supplier PUF does not have any information on patients who are not covered by Medicare, such as those with coverage from other federal programs (like the Federal Employees Health Benefits Program or Tricare), those with private health insurance (such as an individual policy or employer-sponsored coverage), or those who are uninsured. Even within Medicare, the Physician and Other Supplier PUF does not include information for patients who are enrolled in any form of Medicare Advantage plan.

The information presented in this file also does not indicate the quality of care provided by individual physicians. The file only contains cost and utilization information, and for the reasons described in the preceding paragraph, the volume of procedures presented may not be fully inclusive of all procedures performed by the provider.

Medicare allowed amounts and Medicare payments for a given HCPCS code/place of service can vary based on a number of factors, including modifiers, geography, and other services performed during the same day/visit. For example, modifiers (which are two-character designators that signal a change in how the HCPCS code for the procedure or service should be applied) may be included on the claim line when the service intensity was increased or decreased, when an additional physician administered services, or when the service provided differs from the procedure definition. In some cases, modifiers impact allowed amounts and payments. In addition, allowed amounts and payments vary geographically because Medicare makes adjustments for most services based on an area's cost of living. Allowed

amounts and payments can also be adjusted when a physician renders multiple services to a beneficiary on the same day, which is referred to as a multiple procedure payment reduction. For standard payment and allowed amount rates by CPT/HCPCS code, please go to http://www.cms.gov/apps/physician-fee-schedule/overview.aspx.

In general, when a provider administers drugs to a patient, the provider purchases the drug and Medicare pays the provider 106% of the average sales price (ASP) for the drug. For more information on payments for drugs under Part B, please visit http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Part-B-Drugs/McrPartBDrugAvgSalesPrice/index.html. Although the ASP list was used in these datasets to define drug services, the drugs listed on the ASP fee schedule are not a complete listing of drugs paid under part B, but the ASP fee schedule represents the majority of drugs that are used in the office.

Additionally, the data are not risk adjusted and thus do not account for difference in the underlying severity of disease of patient populations treated by providers. Also, since the data presented are summarized from actual claims received from providers and no attempts were made to modify any data (i.e., no statistical outliers were removed or truncated), in rare instances the average submitted charge amount may reflect errors included on claims submitted by providers.

As noted earlier, the file does not include data for services that were performed on 10 or fewer beneficiaries, so users should be aware that summing the data in the file may underestimate the true Part B FFS totals. In addition, some providers bill under both an individual NPI and an organizational NPI. In this case, users cannot determine a provider's actual total because there is no way to identify the individual's portion when billed under their organization.

Medicare pays differently when services are provided in a facility setting versus a freestanding physicians' office (or other non-facility setting). When services are delivered in a facility setting, Medicare makes two payments, one for the physician's professional fee and one for the facility. For services delivered in a facility (place_of_Service ="F"), the data in the Physician and Other Supplier PUF only represents the physician's professional fee and does not include the facility payment. On the other hand, for services delivered in a non-facility setting, such as a physician's office (place_of_Service ="O"), the Physician and Other Supplier PUF represents the complete payment for the service.

If users try to link data from this file to other public datasets, please be aware of the particular Medicare populations included and timeframes used in each file that will be merged. For example, efforts to link the Physician and Other Supplier PUF data to Part D prescription drug data would need to account for the fact that some beneficiaries who have FFS Part B coverage (and are thus included in the Physician and Other Supplier PUF) do not have Part D drug coverage (and thus not represented in Part D data files). At the same time, some beneficiaries that have Part D coverage (and are thus included in the Part D data) do not have FFS Part B coverage (and thus not included in the Physician and Other Supplier PUF). Another example would be linking to data constructed from different or non-aligning time periods, such as publically available data on physician referral patterns, which is based on an 18-month period.

Finally, users should be aware that payments from some CMS demonstration programs are included in the Physician and Other Supplier PUF. Since some CMS demonstration programs utilize the Medicare

claims submission process, payments for services under these demonstrations are included in the data file and may be grouped under specific demonstration HCPCS codes or aggregated under non-demonstration specific HCPCS codes. Demonstration programs that are paid outside of the Medicare claims submission process are not included in the Physician and Other Supplier PUF.

8. Updates:

June 2015 Updates

We have updated the Physician and Other Supplier PUF to include a new variable (*hcpcs_drug_indicator*) to identify whether the HCPCS product/service is a drug as defined from the Medicare Part B Drug ASP list. In addition, HCPCS descriptions have been expanded to include consumer friendly descriptions provided by the AMA for CPT codes (numeric HCPCS codes) and long form descriptions for the CMS Level II codes (alpha-numeric HCPCS codes).

The two types of summary files, the "Medicare Physician and Other Supplier Aggregate Table" (i.e., one record per NPI) and the Medicare State/National HCPCS Aggregate Tables have also been updated. These summary files are now individually summarized from the Medicare Part B non-institutional claims (excluding DMEPOS) and are no longer based on redacted data from the Physician and Other Supplier PUF. Also, the distinction between drug and medical services is incorporated in the two types of summary files. The "Medicare Physician and Other Supplier Aggregate Table" includes separate totals for medical services and drug services as well as the totals for all services. The "Medicare State/National HCPCS Aggregate Tables" include the new variable (*HCPCS Drug Indicator*) to identify whether the HCPCS product/service is a drug as defined from the Medicare Part B Drug ASP list.

The 2012 data are re-published to reflect all updates.

September 2015 Updates

We have updated the summary file, "Medicare Physician and Other Supplier Aggregate Table", to include demographic and health information associated with the provider's beneficiary panel. This provider-level summary (i.e., one record per NPI) now includes aggregated information on beneficiary age, sex, race, Medicare and Medicaid entitlement, sixteen (16) chronic conditions and risk scores. More detailed information on each variable added to this summary file is provided in the Documentation tab of the data file.

The 2012 and 2013 data are re-published to reflect all updates.

APPENDIX A – File Attributes

Variable	Format	Length	Label
npi	Char	10	National Provider Identifier
nppes_provider_last_org_name	Char	70	Last Name/Organization Name
nppes_provider_first_name	Char	20	First Name
nppes_provider_mi	Char	1	Middle Initial
nppes_credentials	Char	20	Credentials
nppes_provider_gender	Char	1	Gender
nppes_entity_code	Char	1	Entity Code
nppes_provider_street1	Char	55	Street Address 1
nppes_provider_street2	Char	55	Street Address 2
nppes_provider_city	Char	40	City
nppes_provider_zip	Char	20	Zip Code
nppes_provider_state	Char	2	State Code
nppes_provider_country	Char	2	Country Code
provider_type	Char	43	Provider Type
medicare_participation_indicator	Char	1	Medicare Participation Indicator
place_of_Service	Char	1	Place of Service
hcpcs_code	Char	5	HCPCS Code
hcpcs_description	Char	256	HCPCS Description
hcpcs_drug_indicator	Char	1	HCPCS Drug Indicator
line_srvc_cnt	Num	8	Number of Services
bene_unique_cnt	Num	8	Number of Medicare Beneficiaries
bene_day_srvc_cnt	Num	8	Number of Medicare Beneficiary/Day Services
average_Medicare_allowed_amt	Num	8	Average Medicare Allowed Amount
stdev_Medicare_allowed_amt	Num	8	Standard Deviation Medicare Allowed Amount
average_submitted_chrg_amt	Num	8	Average Submitted Charge
stdev_submitted_chrg_amt	Num	8	Standard Deviation Submitted Charge Amount
average_Medicare_payment_amt	Num	8	Average Medicare Payment Amount
stdev_Medicare_payment_amt	Num	8	Standard Deviation Medicare Payment Amount

APPENDIX B – Place of Service Descriptions

Table B-1. Non-Facility Based Place of Service (place_of_Service ="O")

Place of Service Code	Place of Service Description
01	Pharmacy
03	School
04	Homeless Shelter
05	Indian Health Service Free-standing Facility
06	Indian Health Service Provider-based Facility
07	Tribal 638 Free-standing Facility
08	Tribal 638 Provider-based Facility
09	Prison/ Correctional Facility
11	Office
12	Home
13	Assisted Living Facility
14	Group Home
15	Mobile Unit
16	Temporary Lodging
17	Walk-in Retail Health Clinic
20	Urgent Care Facility
25	Birthing Center
32	Nursing Facility
33	Custodial Care Facility
49	Independent Clinic
50	Federally Qualified Health Center
54	Intermediate Care Facility/Mentally Retarded
55	Residential Substance Abuse Treatment Facility
60	Mass Immunization Center
57	Non-residential Substance Abuse Treatment Facility
62	Comprehensive Outpatient Rehabilitation Facility
65	End-Stage Renal Disease Treatment Facility
71	Public Health Clinic
72	Rural Health Clinic
81	Independent Laboratory
99	Other Place of Service

Table B-2. Facility Based Place of Service (place_of_Service ="F")

Place of Service Code	Place of Service Description
21	Inpatient Hospital
22	Outpatient Hospital
23	Emergency Room – Hospital
24	Ambulatory Surgical Center
26	Military Treatment Facility
31	Skilled Nursing Facility
34	Hospice
41	Ambulance - Land
42	Ambulance – Air or Water
51	Inpatient Psychiatric Facility
52	Psychiatric Facility-Partial Hospitalization
53	Community Mental Health Center
56	Psychiatric Residential Treatment Center
61	Comprehensive Inpatient Rehabilitation Facility