SENTINEL TECHNICAL SPECIFICATION

SYNPUF TRANSLATION TO SENTINEL COMMON DATA MODEL

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The Sentinel System is sponsored by the U.S. Food and Drug Administration (FDA) to proactively monitor the safety of FDA-regulated medical products and complements other existing FDA safety surveillance capabilities. The Sentinel System is one piece of FDA's Sentinel Initiative, a long-term, multi-faceted effort to develop a national electronic system. Sentinel Collaborators include Data and Academic Partners that provide access to healthcare data and ongoing scientific, technical, methodological, and organizational expertise. The Sentinel Coordinating Center is funded by the FDA through the Department of Health and Human Services (HHS) Contract number HHSF223201400030I. This project was funded by the FDA through HHS Mini-Sentinel contract number HHSF223200910006I.

Sentinel Technical Specification

SynPUF Translation to Sentinel Common Data Model Technical Specification

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Modification History

Version	Date	Modification	By
1.0.0	04/25/2018	• Original published version	Sentinel Operations Center

I. PURPOSE

This documentation provides the specification followed to translate the Medicare Claims Synthetic Public Use Files (SynPUFs) into the **Sentinel Common Data Model (SCDM)**.[1] Included in this documentation are details regarding functionality, background, dependencies, and methodology.

II. BACKGROUND

1. What are the Sentinel Common Data Model and the Sentinel Distributed Database?

Sentinel uses a distributed data approach in which Data Partners maintain physical and operational control over electronic data in their existing environments. The distributed approach is achieved by using a standardized data structure referred to as the **SCDM**. Data Partners transform their data locally according to the Common Data Model, which enables them to execute standardized computer programs that run identically at each Data Partner site. Data Partners are able to review the results of the queries before sending them back to the **Sentinel Operations Center (SOC)**. Queries are distributed and results are returned through a secure portal in order to preserve privacy. The combined collection of datasets across all Data Partners is known as the **Sentinel Distributed Database (SDD)**.

2. What are Medicare Claims Synthetic Public Use Files?

Medicare Claims Synthetic Public Use Files (SynPUFs)[2] were created to allow interested parties to gain familiarity using Medicare claims data while protecting beneficiary privacy. These are synthetic claims datasets created by combining randomized information from various beneficiaries. Each record from the SynPUFs dataset contains extracted claims information from at least three unique beneficiaries. These records were further altered by changing variable values to provide additional deidentification from the beneficiaries.

3. What are SCDM-formatted SynPUFs?

The SOC has transformed SynPUFs into the SCDM[1] format so that users can utilize Sentinel tools with the SynPUFs dataset. The SCDM is a standardized data structure which enables the execution of the standardized Sentinel Statistical Analysis System (SAS) Cohort Identification and Descriptive Analysis (CIDA) packages. The SCDM-formatted SynPUFs contain the same information as SynPUFs, but in a standardized format that is compatible with Sentinel analytic tools.
The SCDM-formatted SynPUFs are available on the Sentinel website for public use. There are 20 subsamples of the SynPUFs dataset available for users which can be used individually or combined together to create a larger dataset. Each subsample consists of seven data tables containing information related to: health plan enrollment, member demographics, health care utilization (e.g., outpatient pharmacy dispensings and medical encounters, diagnoses, and procedures), and death. These tables are available for download via .zip files and can be found on the SynPUFs dataset website page. Note that all tables in a subsample must be downloaded in order to execute the Sentinel analytic tool on the SCDM-formatted SynPUFs. For detailed instructions, please see SynPUFs User Documentation.

4. What is the Cohort Identification and Descriptive Analysis Tool?

Sentinel routine querying tools are SAS programs designed to run against the SCDM. They allow rapid implementation of standard queries across the SDD. **Cohort Identification and Descriptive Analysis (CIDA)**[3] is a tool made up of SAS macros that allows the user to select the cohort(s) of interest. CIDA may be used to calculate background rates of health outcomes of interest (HOIs) (e.g., prevalence of acute myocardial infarction), or rates of medical product use (e.g., new warfarin use), or it may be used for more complex queries that identify the occurrence of HOIs during exposure to a medical product of interest (e.g., number of incident diagnoses of angioedema during new treatment with angiotensin-converting enzyme inhibitors (ACE inhibitors)).

The CIDA program, by default, will output summary-level counts (e.g., number of new users, number of HOIs) stratified by various parameters (e.g., age group, sex, year, year-month). CIDA will also output metrics on eligible members and eligible member-days associated with each result stratum, allowing for the calculation of proportions and rates, and an attrition table to determine the number of eligible members removed from consideration after application of various cohort selection criteria. For definitions for **eligible members** and **eligible member-days**, please refer to the glossary in **Appendix D** of the SynPUFs User Documentation.

The CIDA tool may be used alone or in conjunction with additional tools that perform more complex adjustment for confounders. For example, certain analyses may require comparing individuals who are exposed to the treatment of interest (e.g., ACE inhibitors) with individuals who are on an active comparator treatment (e.g., beta blockers). The demonstration Sentinel CIDA package includes an execution of module for the Propensity Score Analysis (PSA) tool. The CIDA tool can generate output containing information on exposures, outcomes, and covariates that are inputs to the PSA tool. The PSA tool uses the information output by the CIDA tool to estimate a propensity score based on user-defined covariates in user-defined cohorts, and/or via a high-dimensional propensity score approach. The PSA tool then uses the exposed cohort and the comparator cohort, for matching and/or stratification, based on propensity score and calculates hazard ratios, incidence rate differences and 95% confidence intervals.

A Sentinel CIDA package is a standardized system of structured files, folders, and SAS programs that are formatted for the CIDA tool to read; therefore, these items must be set up in a specific manner in order to successfully execute the program against the SCDM-formatted SynPUFs. For detailed instructions, please see section **Instructional Steps** in the SynPUFs User Documentation.
For more information about the CIDA program, please visit Sentinel Routine Query Tools.

III. DISCLAIMER FOR USING SYNPUFS

The SynPUFs is a synthetic claims dataset created by combining randomized information from beneficiaries. Each record from the SynPUFs dataset contains extracted claims information from at least three unique beneficiaries. These records were further altered by changing variable values to provide additional beneficiary deidentification. Due to the synthetic nature of the dataset, results generated by SynPUFs may not be used to make any meaningful scientific conclusion.[4]
The Sentinel Operations Center has converted SynPUFs into the SCDM format to demonstrate the functionality of the Sentinel routine query tool CIDA; results generated by the SCDM-formatted SynPUFs may not be used to make any meaningful scientific conclusion.

IV. FUNCTIONALITY

The purpose of this document is to provide users with the technical steps required to convert the CMS SynPUFs into the SCDM including instruction for the following SCDM tables:

- Enrollment
- Demographic
- Dispensing
- Encounter
- Diagnosis
- Procedure
- Death

The following SCDM tables *will not* be included:

- Cause of Death
- Laboratory Results
- Vital Signs
- Inpatient Pharmacy
- Inpatient Transfusion

Technical details are described in the **Methods** section.

Note that these datasets must pass the same quality assurance (QA) process applied to each ETL produced by the Sentinel Data Partners. We have tried to ensure adherence to applicable SCDM standards in advance through the functional requirements and technical methods listed in this document. If any discrepancies are discovered during the QA process, this document will be adjusted accordingly.

Due to file size considerations, each of the 20 SynPUFs subsamples will be translated to SCDM format and posted for download separately. End users may choose any number of subsamples, and each package will include a SAS program and instructions for preparing the files for use with the Sentinel SAS programs, along with high-level descriptive statistics about each subsample.

A. BENEFICIARY SUMMARY (BENE) FILE

The *CMS Beneficiary Summary DE-SynPUF* contains information on demographics, health plan enrollment, chronic conditions, and reimbursement based on a sample of synthetic Medicare beneficiaries. This is a beneficiary-level file (i.e., each record represents a synthetic Medicare beneficiary). [6]

BENE is partitioned into three files, one per calendar year 2008, 2009, and 2010. Each beneficiary appears in at least one and may appear in all three. Initial descriptive analysis showed that demographic information was consistent across all records for the same beneficiary, so no special rules are required to arrive at one unique SCDM Demographic record per beneficiary. In order to process enrollment information, files will be combined and a YEAR variable added to distinguish enrollment by calendar year.

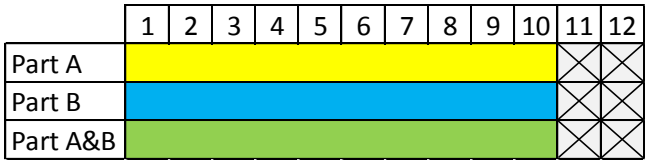
Medicare Part A is hospital insurance that covers inpatient hospital care, skilled nursing facility, hospice, lab tests, surgery, home health care. Medicare Part B is medical insurance that covers services like doctor and other health care providers' services, outpatient care, durable medical equipment, home health care, and some preventive services. Medicare HMO, also known as Part C, includes plans offered

by private companies that contract with Medicare to provide Part A and Part B benefits to people with Medicare who enroll in the plan[7]. Medicare Part D is prescription drug insurance.

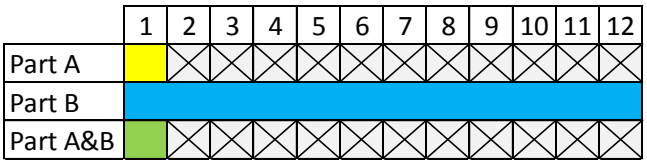
Coverage enrollment dates are not included in SynPUFs. Instead, summary counts of enrollment months per year are included for Part A, Part B, HMO, and Part D. In order to provide enrollment records in the SCDM Enrollment table format, enrollment dates must be imputed by algorithm

using the following rules and assumptions:

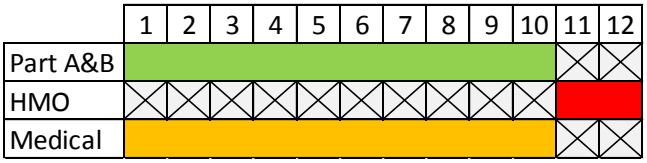
- Medical coverage is defined as concurrent Part A and Part B coverage with the absence of HMO coverage.[8]
    - The combination of Part A and Part B represents full medical coverage through Medicare. Standalone coverage with Part A or Part B alone will be excluded.
    - Because HMO is managed by an outside entity, CMS claims data in SynPUFs will likely be incomplete for beneficiaries with HMO coverage.
- Assume the maximum possible overlap of Part A and Part B coverage.
    - If a beneficiary has 10 months of Part A coverage and 10 months of Part B coverage, then calculate A&B as 10 months.



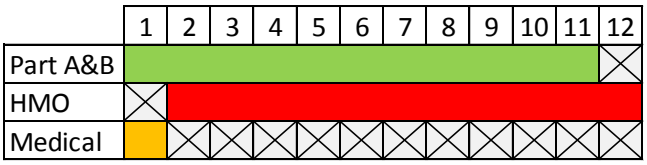
    - If a beneficiary has 1 month of Part A coverage and 12 months of Part B, then calculate A&B as 1 month.



- Assume the minimum possible overlap of HMO coverage.
    - If a beneficiary has 10 months of A&B and 2 months of HMO, then calculate medical coverage as 10 months.



    - If a beneficiary has 11 months of A&B and 11 months of HMO, then calculate medical coverage as 1 month.



- Link coverage across years to form the longest possible enrollment spans.
    - If a beneficiary has 12 months in 2008, 12 months in 2009, and 6 months in 2010, then produce one record:

	Medical months
2008	12
2009	12
2010	6

Enr_start	Enr_end	MedCov
01/01/2008	06/30/2010	Y

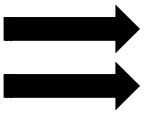
- If a beneficiary has 6 months in 2008, 12 months in 2009, and 8 months in 2010, then produce one record:

	Medical months
2008	6
2009	12
2010	8

Enr_start	Enr_end	MedCov
07/01/2008	08/31/2010	Y

- When a tiebreaker is required, link across 2008 and 2009 rather than across 2009 and 2010.
  - If a beneficiary has 12 months in 2008, 6 months in 2009, and 12 months in 2010, then produce two records:

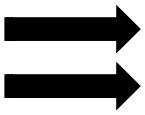
	Medical months
2008	12
2009	6
2010	12



Enr_start	Enr_end	MedCov
01/01/2008	06/30/2009	Y
01/01/2010	12/31/2010	Y

- When no link across years is possible, start enrollment on January 1 of the orphaned year.
  - If a beneficiary has 6 months in 2008, 9 months in 2009, and 6 months in 2010, then produce two records:

	Medical months
2008	6
2009	9
2010	6



Enr_start	Enr_end	MedCov
07/01/2008	09/30/2009	Y
01/01/2010	06/30/2010	Y

- Enrollment is censored at death date of beneficiary.

This process is repeated for drug coverage, which is defined simply by Part D enrollment. When finished, medical and drug coverage spans must be combined in a manner that ensures no overlapping of calendar time between records for the same patient.

At least one month of medical or drug coverage is required for inclusion in the output of this program. Beneficiaries having zero records in the final SCDM Enrollment table will be excluded from all other SCDM tables.

B. PRESCRIPTION DRUG EVENTS (PDE) FILE

The *CMS Prescription Drug Events (PDE) DE-SynPUF* contains synthetic PDE's provided for those synthetic Medicare beneficiaries in the *CMS Beneficiary Summary DE-SynPUF* in 2008, 2009, and 2010. Each record in this PDE file pertains to a synthetic drug event, but may be considered a claim. A synthetic Medicare beneficiary in the *CMS Beneficiary Summary DE-SynPUF* could have any number of drug events, including no drug events in a given year.[6]

Records showing same-day dispensing of the same drug code (NDC) will be considered part of the same dispensing event and will be combined into a single record by summarizing days supplied and amount dispensed.[8] Otherwise, no further processing is necessary.

C. OUTPATIENT CLAIMS (OP) FILE

The *CMS Outpatient Claims DE-SynPUF* contains synthetic institutional claims for outpatient services provided to the synthetic Medicare beneficiaries in the *CMS Beneficiary Summary DE-SynPUF* in 2008, 2009, and 2010. Each record in an outpatient file pertains to a synthetic outpatient claim. A synthetic Medicare beneficiary in the *CMS Beneficiary Summary DE-SynPUF* could have any number of outpatient claims, including no claims in a given year. [6]

The claims in the OP file should be separated into emergency department (ED), ambulatory visit (AV), and other ambulatory visit (OA) encounters. However, neither place of service (POS) nor revenue codes are included in the OP file to make this distinction. ED encounters will be defined as any encounter having at least one **ED-related code** listed in Appendix B. OA encounters will be defined as any encounter having at least one **OA-related code** listed in Appendix B. All other encounters will be identified as AV.

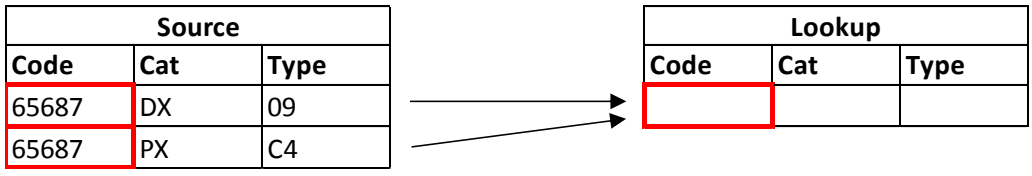
Preliminary descriptive analysis showed that diagnosis codes may appear in the procedure code variables, and procedure codes may appear in the diagnosis code variables. This may be a result of the de-identification process of imputing and coarsening used in creating the SynPUFs data. Further processing is required to determine the best code category and code type using the following assumptions and rules:

- Process each source file (OP, CAR, IP) separately to account for source-specific coding idiosyncrasies.
- Process the source file assuming source code category (diagnosis vs. procedure) is correct unless code obviously follows the format rules of another code type and category.
- Match the codes to a **code lookup file** containing all relevant codesets, and make note of how the source codes match to the lookup:
    - 1 to 0
        - The source code has only one unique combination of category and type values.
        - The source code value matches to 0 records in the Lookup.

Source		
Code	**Cat**	**Type**
X1001	PX	HC

Lookup		
Code	**Cat**	**Type**

    - Many to 0
        - The source code has more than one unique combination of category and type values.
        - The source code value matches to 0 records in the Lookup.



Source		
Code	**Cat**	**Type**
65687	DX	09
65687	PX	C4

Lookup		
Code	**Cat**	**Type**

    - 1 to 1
        - The source code has only one unique combination of category and type values.
        - The source code value matches to exactly 1 record in the Lookup.

Source		
Code	**Cat**	**Type**
G1008	PX	HC

Lookup		
Code	**Cat**	**Type**
G1008	PX	HC

- Many to 1
  - The source code has more than one unique combination of category and type values.
  - The source code value matches to exactly 1 record in the Lookup.

Source		
Code	**Cat**	**Type**
V1099	DX	09
V1099	PX	HC

Lookup		
Code	**Cat**	**Type**
V1099	DX	09

- 1 to Many
  - The source code has only one unique combination of category and type values.
  - The source code value matches to more than 1 record in the Lookup.

Source		
Code	**Cat**	**Type**
70701	DX	09

Lookup		
Code	**Cat**	**Type**
70701	DX	09
70701	PX	C4

- Many to Many
  - The source code has more than one unique combination of category and type values.
  - The source code value matches to more than 1 record in the Lookup.

Source		
Code	**Cat**	**Type**
0400	DX	09
0400	PX	09

Lookup		
Code	**Cat**	**Type**
0400	DX	09
0400	PX	09
0400	PX	RE

- Assign final disposition of code category and type as follows:
  - For 1 to 0 and Many to 0 matches, use the original source category and assign a default codetype value of "OT" (Other).
    - Note that matching to 0 codes in the lookup means the source code value is not valid in any of the standard codesets.
  - For 1 to 1 and Many to 1 matches, use the lookup category and type values.
  - For 1 to Many and Many to Many matches:
    - Select the record where category and type values match between source and lookup.
    - If none, select any record where category matches between source and lookup.
    - If none, create one record per unique combination of lookup category and type.

D. CARRIER CLAIMS (CAR) FILE

The *CMS Carrier Claims DE-SynPUF* (also known as the Physician/Supplier Part B claims file) contains synthetic non-institutional claims for physician/supplier services provided to those synthetic Medicare

beneficiaries in the *CMS Beneficiary Summary DE-SynPUF* in 2008, 2009, and 2010. Each record in a carrier file pertains to a synthetic physician/supplier claim. A synthetic Medicare beneficiary in the *CMS Beneficiary Summary DE-SynPUF* could have any number of physician/supplier claims, including no claims in a given year. [6]

The claims in the CAR file should be separated into ambulatory visit (AV) and other ambulatory visit (OA) encounters. However, neither place of service (POS) nor revenue codes are included in the OP file to make this distinction. OA encounters will be defined as any encounter having at least one **OA-related code** listed in Appendix B. All other encounters will be identified as AV.

Preliminary descriptive analysis showed that diagnosis codes may appear in the procedure code variables, and procedure codes may appear in the diagnosis code variables. This may be a result of the de-identification process or imputing and coarsening used in creating the SynPUFs data. Further processing is required to determine the best code category and code type using the same assumptions and rules listed in the **Outpatient Claims (OP) File** section.

E. INPATIENT CLAIMS (IP) FILE

The *CMS Inpatient Claims DE-SynPUF* contains synthetic institutional claims for hospital inpatient services provided to the synthetic Medicare beneficiaries in the *CMS Beneficiary Summary DE-SynPUF* in 2008, 2009, and 2010. Each record in an inpatient file pertains to a synthetic inpatient claim. [6]

The SNF file is not available in the SynPUF datasets, and the IP file does not contain place of service (POS) or revenue codes that could be used to make a distinction between inpatient (IP) non-acute institutional (IS) encounters. In order to include any IS encounters, we use the following algorithm:

- Determine if any IP claims have at least one corresponding OP or CAR claim (i.e. same beneficiary, overlapping service dates) having one or more institutional care-related codes listed in **Appendix B**.
- If so, assign encounter type IS to claims having at least two days between admission and discharge dates.
- For all others, assign encounter type IP.

Preliminary descriptive analysis showed that diagnosis codes may appear in the procedure code variables, and procedure codes may appear in the diagnosis code variables. This may be a result of the de-identification process or imputing and coarsening used in creating the SynPUFs data. Further processing is required to determine the best code category and code type using the same assumptions and rules listed under the **Outpatient Claims (OP) File** section.

V. USER PARAMETERS

Note that parameters for individual macros are listed in **Appendix A**.

A. MASTER PROGRAM PARAMETERS

Parameter	Field Name	Description
SynPUFs input file location	SYNPUF	**Details**: directory containing the SynPUFs subsample SAS input files **Defined by:** User programmer **Input type:** Required **Format:** Alphanumeric **Example**: *SYNPUF* = C:\synpufs_translation\subsamples\
SCDM output file location	SCDM	**Details**: directory containing the final SCDM table SAS output files **Defined by:** User programmer **Input type:** Required **Format:** Alphanumeric **Example**: *SCDM* = C:\synpufs_translation\scdm\
SAS lookup files location	INFOLDER	**Details:** directory that contains the SAS lookup files **Defined by:** User programmer **Input type:** Required **Format:** Alphanumeric **Example:** *INFOLDER* = C:\synpufs_translation\inputfiles\
SAS macro programs location	SASMACR	**Details**: directory that contains the SAS macro program files **Defined by:** Request programmer **Input type:** Required **Format:** Alphanumeric **Example**: *SASMACR* = C:\synpufs_translation\programs\

VI. DEPENDENCIES

A. DOWNLOAD SYNPUFS SAMPLES AND CONVERT TO SAS

https://www.cms.gov/Research-Statistics-Data-and-Systems/Downloadable-Public-Use-Files/SynPUFs/DE_Syn_PUF.html

B. CROSS-REFERENCE FILES TO CONVERT CMS STATE AND COUNTY TO ZIP CODE

The program uses two crosswalks to map CMS state and county to Federal Information Processing Standard (FIPS) county, and then from FIPS county to Postal ZIP codes by arbitrarily choosing one ZIP code per county. The crosswalks are free and publicly available.

5. CMS State and County to FIPS

https://wonder.cdc.gov/wonder/sci_data/codes/fips/type_txt/cntyxref.asp

6. FIPS to ZIP

https://www.huduser.gov/portal/datasets/usps_crosswalk.html

7. ZIP conversion file format

Variable Name	Type	Length	Format	Valid Values	Notes/Description
ZIP	Char	5		5-digit U.S. postal ZIP code	
FIPS	Char	5		5-digit FIPS county code	Federal Information Processing Standard (FIPS) county code.
SSACD	Char	5		5-digit CMS state/county code	CMS state and county code.

C. CLINICAL CODE LOOKUP FILE

In order to confirm code category (diagnosis vs. procedure) and assign code type, the program uses a comprehensive clinical code lookup table with all relevant codesets:

- ICD9 Diagnosis
- ICD9 Procedure
- HCPCS Level II Procedure
- CPT4 Procedure
- CPT3 Procedure
- CPT2 Procedure
- Revenue

ICD10 Diagnosis and Procedure codes are excluded from this file since the SynPUF datasets were developed prior to ICD10 implementation.

1. Code lookup file format

This file format is used for the Clinical Code lookup file as well as for the code lookup files described in **Appendix B**.

Variable Name	Type	Length	Format	Valid Values	Notes/Description
ClinCode	Char	18			Code value with decimal point removed
ClinCodeCat	Char	5		DX PX	Used to distinguish between diagnosis (DX) and procedure (PX) codes
ClinCodeType	Char	5		09 = ICD-9 HC = HCPCS Level II C4 = CPT4 C3 = CPT3 C2 = CPT2 RE = Revenue	The codeset to which the code belongs

VII. SECURITY

The SynPUF datasets are free and contain publicly available, synthetic, non-identifiable information. No additional security is necessary.

VIII. OUTPUT

Output of this program will be SCDM tables formatted in version 6.0.2 containing data translated from the SynPUFs. This section describes the table structures only as they pertain to data that are available from the SynPUFs, and if data to populate a particular variable or variable value are not available in the source, then this will be reflected in the valid values and descriptions. Please refer to the Sentinel website for the full set of valid values and descriptions for each table and variable.[9]

A. SCDM ENROLLMENT TABLE

The SCDM Enrollment Table has a start/stop structure that contains one record per PatID and continuous enrollment period. Beneficiaries with medical coverage, drug coverage, or both will be included. A unique combination of PatID, Enr_Start, Enr_End, MedCov, DrugCov, and Chart identifies a unique record. A break in enrollment (of at least one day) or a change in either the medical or drug coverage variables will generate a new record.

Variable Name	Type	Length	Format	Valid Values	Notes/Description
PatID	Char	16			Arbitrary person-level identifier. Used to link across tables. A new enrollment period generates a new record, but the same person should have the same PatID on subsequent records.
Enr_Start	Num	4	mmddyy10.	01/01/2008 through 12/01/2010	Date of the beginning of the enrollment period. Since the exact date is unknown, use the first day of the month.
Enr_End	Num	4	mmddyy10.	01/31/2008 through 12/31/2010	Date of the end of the enrollment period. Since the exact date is unknown, use either the last day of the month or the date of death.
MedCov	Char	1		Y = Yes N = No	Mark as "Y" if the beneficiary has concurrent Plan A and Plan B coverage without concurrent HMO coverage.
DrugCov	Char	1		Y = Yes N = No	Mark as "Y" if the beneficiary has Plan D coverage.

Variable Name	Type	Length	Format	Valid Values	Notes/Description
Chart	Char	1		N = No	SynPUF are synthetic data for instructive purposes only. The patients do not represent actual Medicare beneficiaries, and thus, chart review is not possible.

B. SCDM DEMOGRAPHIC TABLE

The SCDM Demographic Table contains one record per PatID with the most recent information on Birth_Date, Sex, Race/Ethnicity, and Zip Code.

Variable Name	Type	Length	Format	Valid Values	Notes/Description
PatID	Char	16			Arbitrary person-level identifier. Used to link across tables.
Birth_date	Num	4	mmddyy10.		Date of birth
Sex	Char	1		F = Female M = Male	The Beneficiary file contains values representing female and male only, and no missing values are allowed in the source.
Hispanic	Char	1		U = Unknown Y = Yes	Ethnicity is not available in the Beneficiary file. If beneficiary race is Hispanic, assign "Y". Otherwise, "U".
Race	Char	1		0 = Unknown 3 = Black or African American 5 = White	The Beneficiary file contains values representing White, Black, Hispanic, and "Others" (unknown, other, Asian, Hispanic, (*sic*) North American Native). Thus, assign Hispanic and "Others" to "0" (Unknown).
ZIP	Char	5		Zip code	Beneficiary ZIP is not available in the Beneficiary file. ZIP is assigned by converting CMS State and County codes into one arbitrarily chosen ZIP per county so that the ZIP value represents a county rather than a single ZIP.

Variable Name	Type	Length	Format	Valid Values	Notes/Description
ZIP_date	Num	4	mmddyy10.	SAS date	This information is not available in the Beneficiary file. Use the earliest enrollment date available in the SCDM Enrollment table.

C. SCDM DISPENSING TABLE

The SCDM Outpatient Pharmacy Dispensing Table contains one record per unique combination of PatID, NDC, and RxDate. Each record represents an outpatient pharmacy dispensing.

Variable Name	Type	Length	Format	Valid Values	Notes/Description
PatID	Char	16			Arbitrary person-level identifier. Used to link across tables.
Rxdate	Num	4	mmddyy10.	01/01/2008 through 12/31/2010	Dispensing date.
NDC	Char	11		National Drug Code	
RxSup	Num	4		Days supply	Number of days that the medication supports based on the number of doses as reported by the pharmacist. When source has multiple same-day dispensings of the same NDC for the same patient, this value is the sum of days supply across records.
RxAmt	Num	4		Amount dispensed	Number of units (pills, tablets, vials) dispensed. When source has multiple same-day dispensings of the same NDC for the same patient, this value is the sum of amount dispensed across records.

D. SCDM ENCOUNTER TABLE

The SCDM Encounter Table contains one record per PatID and EncounterID. Each encounter should have a single record in the SCDM Encounter Table. Each diagnosis and procedure recorded during the encounter should have a separate record in the Diagnosis or Procedure Tables.

Variable Name	Type	Length	Format	Valid Values	Notes/Description
PatID	Char	16			Arbitrary person-level identifier. Used to link across tables.
EncounterID	Char	15			Arbitrary encounter-level identifier. Used to link across the Encounter, Diagnosis, and Procedure tables.
ADate	Num	4	mmddyy10.	01/01/2008 through 12/31/2010	Encounter or admission date.
DDate	Num	4	mmddyy10.	01/01/2008 through 12/31/2010	Discharge date. Should be populated for all Inpatient Hospital Stay (IP) and Non-Acute Institutional Stay (IS) encounter types. Will be missing for emergency department (ED) and ambulatory visit (AV or OA) encounter types.
Provider	Char	10		Unique provider identifier	For IP, IS, and ED encounters, this will be the first non-missing identifier representing attending, operating, or "other" physician. For AV and OA encounters, this will be the NPI or tax ID number on claim line 1.
Facility_Location	Char	3		missing	This information is not available in SynPUFs.
EncType	Char	2		AV = Ambulatory Visit ED = Emergency Department IP = Inpatient Hospital Stay IS = Non-Acute Institutional Stay OA = Other Ambulatory Visit	ED includes claims from the OP file having >1 ED-related code listed in **Appendix B**. OA includes claims from the OP and CAR files having >= 1 OA-related code listed in **Appendix B**.

Variable Name	Type	Length	Format	Valid Values	Notes/Description
					AV includes claims from the OP and CAR files that are not classified as ED or OA. IS includes claims from the IP file having a corresponding claim (i.e. same beneficiary and overlapping service dates) in the OP or CAR files having >= 1 institutional care-related code listed in **Appendix B**. IP includes claims from the IP file that are not classified as IS.
Facility_Code	Char	6		Hospital identifier	Applies only to IP and IS encounters
Discharge_Disposition	Char	1		U = Unknown	This information is not available in SynPUFs.
Discharge_Status	Char	2		UN = Unknown	This information is not available in SynPUFs.
DRG	Char	3		3-digit Diagnosis Related Group	Diagnosis Related Group. Should be populated for IP and IS encounter types. Should be missing for ED, AV, and OA encounters.
DRG_Type	Char	1		2 = MS-DRG (current system)	DRG code version. MS-DRG (current system) began on 10/1/2007. Should be populated for IP and IS encounter types. Should be missing for ED, AV, and OA encounters.
Admitting_Source	Char	2		UN = Unknown	This information is not available in SynPUFs.

E. SCDM DIAGNOSIS TABLE

The SCDM Diagnosis Table contains one record per unique combination of PatID, EncounterID, DX, and DX_CodeType. This table should capture all uniquely recorded diagnoses for all encounters.

Variable Name	Type	Length	Format	Valid Values	Notes/Description
PatID	Char	16			Arbitrary person-level identifier. Used to link across tables.
EncounterID	Char	15			Arbitrary encounter-level identifier. Used to link across the Encounter, Diagnosis, and Procedure tables.
ADate	Num	4	mmddyy10.	01/01/2008 through 12/31/2010	Encounter or admission date.
Provider	Char	10		Unique provider identifier	For IP, IS, and ED encounters, this will be the first non-missing identifier representing attending, operating, or "other" physician. For AV and OA encounters, this will be the NPI or tax ID number on claim line 1.
EncType	Char	2		AV = Ambulatory Visit ED = Emergency Department IP = Inpatient Hospital Stay IS = Non-Acute Institutional Stay OA = Other Ambulatory Visit	ED includes claims from the OP file having >1 ED-related code listed in **Appendix B**. OA includes claims from the OP and CAR files having >= 1 OA-related code listed in **Appendix B**. AV includes claims from the OP and CAR files that are not classified as ED or OA. IS includes claims from the IP file having a corresponding claim (i.e. same beneficiary and overlapping service dates) in the OP or CAR files having >= 1 institutional care-related code listed in **Appendix B**.

Variable Name	Type	Length	Format	Valid Values	Notes/Description
					IP includes claims from the IP file that are not classified as IS.
DX	Char	18		Diagnosis code	SynPUFs files contain no decimal points in any code variables. Diagnosis code variables in SynPUFs may have a procedure code value, and vice versa. Use algorithm to assign best value.
DX_codetype	Char	2		09 = ICD-9-CM OT = Other	Diagnosis code type is not directly available in SynPUFs, and diagnosis code variables may have a procedure code value, and vice versa. Use algorithm to assign best value.
OrigDX	Char			Same as DX	
PDX	Char	1		P = Principal S = Secondary missing = irrelevant	Principal discharge diagnosis flag. Relevant only on IP and IS encounters. Assign "P" to diagnosis code in ICD9_CD_1. Assign "S" to all others. For ED, AV, and OA encounter types, mark as missing.
PAdmit	Char	1		N = No Y = Yes U = Unknown or unable to determine X = Unreported/not used	Indicates whether the diagnosis code is indicative of a condition present at admission.

F. SCDM PROCEDURE TABLE

The SCDM Procedure Table contains one record per unique combination of PatID, EncounterID, PX, and PX_CodeType. This table should capture all uniquely recorded procedures for all encounters.

Variable Name	Type	Length	Format	Valid Values	Notes/Description
PatID	Char	16			Arbitrary person-level identifier. Used to link across tables.
EncounterID	Char	15			Arbitrary encounter-level identifier. Used to link across the Encounter, Diagnosis, and Procedure tables.
ADate	Num	4	mmddyy10.	01/01/2008 through 12/31/2010	Encounter or admission date.
Provider	Char	10		Unique provider identifier	For IP, IS, and ED encounters, this will be the first non-missing identifier representing attending, operating, or "other" physician. For AV and OA encounters, this will be the NPI or tax ID number on claim line 1.
EncType	Char	2		AV = Ambulatory Visit ED = Emergency Department IP = Inpatient Hospital Stay IS = Non-Acute Institutional Stay OA = Other Ambulatory Visit	ED includes claims from the OP file having >1 ED-related code listed in **Appendix B**. OA includes claims from the OP and CAR files having >= 1 OA-related code listed in **Appendix B**. AV includes claims from the OP and CAR files that are not classified as ED or OA. IS includes claims from the IP file having a corresponding claim (i.e. same beneficiary and overlapping service dates) in the OP or CAR files having >= 1 institutional care-related code listed in **Appendix B**.

Variable Name	Type	Length	Format	Valid Values	Notes/Description
					IP includes claims from the IP file that are not classified as IS.
PX	Char	11		Procedure code	SynPUFs files contain no decimal points in any code variables Procedure code variables in SynPUFs may have a diagnosis code value, and vice versa. Use algorithm to assign best value.
PX_codetype	Char	2		09 = ICD-9-CM C2 = CPT Category II C3 = CPT Category III C4 = CPT-4 (i.e., HCPCS Level I) HC = HCPCS (i.e., HCPCS Level II) OT = Other RE = Revenue	Procedure code type is not directly available in SynPUFs, where procedure code variables may have a diagnosis code value, and vice versa. Use algorithm to assign best value.
OrigPX	Char			Same as PX	

G. SCDM DEATH TABLE

The SCDM Death Table contains one record per PatID.

Variable Name	Type	Length	Format	Valid Values	Notes/Description
PatID	Char	16			Arbitrary person-level identifier. Used to link across tables.
DeathDt	Num	4	mmddyy10.	01/01/2008 through 12/31/2010	Date of death.
DtImpute	Char	1		D = Day imputed	Beneficiary file lists all death dates with the first day of the month.
Source	Char	1		L = Other, locally defined	Source of death information is not available in Beneficiary file.
Confidence	Char	1		E = Excellent	Confidence that the patient drawn from the Source data represents the actual patient.

IX. METHODS

This section is organized by SynPUFs source file. Each file will be processed separately, extracting and transforming records for one or more SCDM tables. Instructions on completing the Encounter, Diagnosis, and Procedure tables will be included at the end of the section.

The order of operations is important since some tables rely on information that must first be extracted and transformed from other tables. For example, Encounter table processing for Outpatient and Carrier Claims depends on procedure codes to determine encounter type, but the Diagnosis and Procedure tables also depend on information from the Encounter table. Processing order should be: code type algorithm, Diagnosis, Procedure, Encounter. Similarly, Encounter table processing for Inpatient Claims depends on encounter types from Outpatient and Carrier Claims, so Inpatient Claims must be processed last.

A. PROCESSING THE BENEFICIARY FILE

1. Pre-Processing

a. Concatenate Beneficiary files from each of 2008, 2009, and 2010, adding a YEAR variable with the four-digit year value to distinguish records by calendar year.

2. SCDM Demographics

a. Select unique combinations of:
    i. DESYNPUF_ID
    ii. BENE_BIRTH_DT
    iii. BENE_SEX_IDENT_CD
    iv. BENE_RACE_CD
    v. SP_STATE_CODE
    vi. BENE_COUNTY_CD

b. PatID
    i. Straight mapping:
        1. DESYNPUF_ID

c. Birth_Date
    i. Straight mapping:
        1. BENE_BIRTH_DT

d. Sex
    i. Transform:
        1. BENE_SEX_IDENT_CD
            a. "1" = "M" (Male)
            b. "2" = "F" (Female)

e. Hispanic
    i. Transform:
        1. BENE_RACE_CD
            a. "5" = "Y" (Hispanic)
            b. "1" = "N" (Non-Hispanic)
            c. OTHER = "U" (Unknown)

f. Race
    i. Transform:
        1. BENE_RACE_CD

a. "1" = "5" (White)
b. "2" = "3" (Black or African American)
c. OTHER = "0" (Unknown)

g. Zip
   i. Transform:
      1. Concatenate SP_STATE_CODE and BENE_COUNTY_CD.
      2. Convert to FIPS county code.
      3. Convert FIPS to ZIP by arbitrarily choosing one ZIP per FIPS value.
h. Zip_Date
   i. Duplicate:
      1. Choose patient's minimum Enr_Start value from SCDM Enrollment.
i. Ensure that the final SCDM Demographic table has one record per unique combination of:
   i. PatID

3. SCDM Death

a. Select unique combinations with non-missing values of:
   i. DESYNPUF_ID
   ii. BENE_DEATH_DT
b. PatID
   i. Straight mapping:
      1. DESYNPUF_ID
c. DeathDt
   i. Straight mapping:
      1. BENE_DEATH_DT
d. DtImpute
   i. Hardcode:
      1. "D" (Day imputed) for all records
         a. All death date values are set to the first day of the month.
         b. Use value "D" to reflect that the day of death was imputed.
e. Source
   i. Hardcode:
      1. "L" (Other, locally defined)
         a. Default value since no information is available to confirm any other source.
f. Confidence
   i. Hardcode:
      1. "E" (Excellent)
g. Ensure that the final SCDM Death table has one record per unique combination of:
   i. PatID

4. Coverage Type algorithm

a. Select:
   i. YEAR
   ii. DESYNPUF_ID
   iii. BENE_DEATH_DT
   iv. BENE_HI_CVRAGE_TOT_MONS
   v. BENE_SMI_CVRAGE_TOT_MONS
   vi. BENE_HMO_CVRAGE_TOT_MONS

vii. PLAN_CVRG_MOS_NUM

b. Create one record per unique DESYNPUF_ID with summarized variables described below for each of beneficiary years 2008, 2009, and 2010 (*YYYY* as variable name suffix). If no data are available for a beneficiary year, assign a numerical value of 0 to the corresponding summary variable.
   i. Minimum number of concurrent Part A and Part B coverage months
      1. AB_MONTHS_*YYYY* = min(BENE_HI_CVRAGE_TOT_MONS, BENE_SMI_CVRAGE_TOT_MONS)
         a. This assumes is A & B coverage is concurrent where possible.
         b. Example: 10 months Part A and 6 months Part B
            i. AB_MONTHS = 6
   ii. Number of medical coverage months
      1. MEDCOV_MONTHS_*YYYY* = min(AB_MONTHS, (12 - BENE_HMO_CVRAGE_TOT_MONS))
         a. Use a floor value of 0.
         b. This assumes A & B coverage and HMO coverage are nonconcurrent where possible.
         c. Example: 6 months A&B and 8 months HMO
            i. MEDCOV_MONTHS = 4
         d. Example: 1 month A&B coverage and 12 months HMO
            i. MEDCOV_MONTHS = 0
   iii. Number of drug coverage months
      1. DRUGCOV_MONTHS_*YYYY* = PLAN_CVRG_MOS_NUM

c. Create Temp MedCov table with medical coverage records for each DESYNPUF_ID using the following hierarchy:
   i. Exclude records having 0 in each of MEDCOV_MONTHS_*YYYY*.
   ii. For all other records, assign MedCov = "Y" and DrugCov = "N", and then assign enrollment dates.
   iii. For records having 12 in each of MEDCOV_MONTHS_*YYYY*:
      1. Enr_Start = 01/01/2008
      2. Enr_End = min(12/31/2010, BENE_DEATH_DT)
   iv. For records having *N* > 0 in one year and 0 in the other two:
      1. Enr_Start = 01/01/YYYY
      2. Enr_End = min(last day of the *Nth* month of the year, BENE_DEATH_DT)
   v. For the remaining records, assign using the following rules:
      1. Link together months between years to create continuous coverage where possible.
         a. Example: 10 months in 2008, 12 months in 2009, and 10 months in 2010
            i. Enr_Start = 03/01/2008.
            ii. Enr_End = min(10/31/2010, BENE_DEATH_DT)
      2. Where necessary, create more than one record.
         a. Example: 12 months in 2008, 0 months in 2009, 8 months in 2010
            i. Record 1:
               1. Enr_Start = 01/01/2008
               2. Enr_End = 12/31/2008
            ii. Record 2:
               1. Enr_Start = 01/01/2010

2. Enr_End = min(12/31/2010, BENE_DEATH_DT)

3. Favor linking between a year with 12 months and a preceding or following partial year.
    a. Example: 6 months in 2008, 6 months in 2009, 12 months in 2010
        i. Record 1:
            1. Enr_Start = 01/01/2008
            2. Enr_End = 06/30/2008
        ii. Record 2:
            1. Enr_Start = 07/01/2009
            2. Enr_End = min(12/31/2010, BENE_DEATH_DT)

4. Favor linking between 2008 and 2009 over linking between 2009 and 2010 to break any ties.
    a. Example: 6 months in 2008, 6 months in 2009, 6 months in 2010
        i. Record 1:
            1. Enr_Start = 07/01/2008.
            2. Enr_End = 06/30/2009.
        ii. Record 2:
            1. Enr_Start = 01/01/2010.
            2. Enr_End = min(06/30/2010, BENE_DEATH_DT)

vi. Be sure to create coverage records for all eligible months for all beneficiaries.

d. Using same methods used to create Temp MedCov, create Temp DrugCov table with drug coverage records for each DESYNPUF_ID, with the following changes:
    i. Assign DrugCov = "Y" and MedCov = "N".
    ii. Use DRUGCOV_MONTHS_*YYYY* to determine enrollment.

e. Create Temp ENR table by combining records where dates overlap for the same DESYNPUF_ID.
    i. This final step must ensure that no two records for the same beneficiary cover the same calendar time.
    ii. Example:
        1. Enr_Start = 01/01/2008 Enr_End = 12/31/2010 MedCov = "Y" DrugCov = "N"
        2. Enr_Start = 01/01/2009 Enr_End = 12/31/2010 MedCov = "N" DrugCov = "Y"
        3. Create two records:
            a. Enr_Start = 01/01/2008 Enr_End = 12/31/2009 MedCov = "Y" DrugCov = "N"
            b. Enr_Start = 01/01/2009 Enr_End = 12/31/2010 MedCov = "Y" DrugCov = "Y"

5. SCDM Enrollment

a. Use Temp ENR table resulting from the Coverage Type algorithm
b. PatID
    i. Straight mapping:
        1. DESYNPUF_ID
c. Enr_Start
    i. Straight mapping:
        1. Enr_Start
            a. Assigned using the Coverage Type algorithm
d. Enr_End
    i. Straight mapping:

1. Enr_End
    a. Assigned using the Coverage Type algorithm

e. MedCov
    i. Straight mapping:
        1. MedCov
            a. Assigned using the Coverage Type algorithm

f. DrugCov
    i. Straight mapping:
        1. DrugCov
            a. Assigned using the Coverage Type algorithm

g. Chart
    i. Hardcode:
        1. "N" (No)
            a. SynPUF are synthetic data for instructive purposes only. The patients do not represent actual Medicare beneficiaries.

h. Ensure that the final SCDM Enrollment table has one record per unique combination of:
    i. PatID
    ii. Enr_Start

B. PROCESSING THE PRESCRIPTION DRUG EVENTS FILE

1. SCDM Dispensing

a. Select:
    i. DESYNPUF_ID
    ii. SRVC_DT
    iii. PROD_SRVC_ID
    iv. QTY_DSPNSD_NUM
    v. DAYS_SUPLY_NUM

b. PatID
    i. Straight mapping:
        1. DESYNPUF_ID

c. RxDate
    i. Straight mapping:
        1. SRVC_DT

d. NDC
    i. Straight mapping:
        1. PROD_SRVC_ID

e. RxSup
    i. Transform:
        1. sum non-missing values of DAYS_SUPLY_NUM across all records having same PatID, RxDate, and NDC

f. RxAmt
    i. Transform:
        1. sum non-missing values of QTY_DSPNSD_NUM across all records having same PatID, RxDate, and NDC

g. Ensure that the final SCDM Dispensing table has one record per unique combination of:
    i. PatID
    ii. RxDate

iii. NDC

C. PROCESSING THE OUTPATIENT (OP) CLAIMS FILE

1. Code Type algorithm

a. Create OP Temp Table 1 with one record for each unique combination of DESYNPUF_ID, CLM_ID, and diagnosis code or procedure code:
   i. ICD9_DGNS_CD_*N*
      1. Assign SourceCode with the value of ICD9_DGNS_CD_*N*.
         a. Replace the alpha "O" with the digit "0".
      2. Assign SourceCat with the value "DX".
      3. Assign SourceType with the value "09".
      4. Output one record for each non-missing value of ICD9_DGNS_CD_*N*.
   ii. ICD9_PRCDR_CD_*N*
      1. Assign SourceCode with the value of ICD9_PRCDR_CD_*N*.
         a. Replace the alpha "O" with the digit "0".
      2. Assign SourceCat with the value "PX".
      3. Assign SourceType:
         a. If the first position is any alpha, then "HC"
         b. Else if length < 5, then "09"
         c. Else if the last position is "F", then "C2"
         d. Else if the last position is "T", then "C3"
         e. Else "C4"
      4. Output one record for each non-missing value of ICD9_PRCDR_CD_*N*.
   iii. HCPCS_CD_*N*
      1. Assign SourceCode with the value of HCPCS_CD_*N*.
         a. Replace the alpha "O" with the digit "0".
      2. Assign SourceCat with the value "PX".
      3. Assign SourceType:
         a. If the first position is any alpha, then "HC"
         b. Else if length < 5, then "09"
         c. Else if the last position is "F", then "C2"
         d. Else if the last position is "T", then "C3"
         e. Else "C4"
      4. Output one record for each non-missing value of HCPCS_CD_*N*.

b. The final processed OP Temp Table 1 should have one record per unique, non-missing combination of:
   i. DESYNPUF_ID
   ii. CLM_ID
   iii. SourceCode
   iv. SourceCat
   v. SourceType

c. Create OP Temp Table 2 with one record for each unique combination of:
   i. SourceCode
   ii. SourceCat
   iii. SourceType

d. Link OP Temp Table 2 to a master clinical code lookup file by code regardless of category or type.

e. Determine the type of match:
    i. 1 to 0
        1. The SourceCode has only one unique combination of SourceCat and SourceType values.
        2. The SourceCode value matches to 0 records in the Lookup.
    ii. Many to 0
        1. The SourceCode has more than one unique combination of SourceCat and SourceType values.
        2. The SourceCode value matches to 0 records in the Lookup.
    iii. 1 to 1
        1. The SourceCode has only one unique combination of SourceCat and SourceType values.
        2. The SourceCode value matches to exactly 1 record in the Lookup.
    iv. Many to 1
        1. The SourceCode has more than one unique combination of SourceCat and SourceType values.
        2. The SourceCode value matches to exactly 1 record in the Lookup.
    v. 1 to Many
        1. The SourceCode has only one unique combination of SourceCat and SourceType values.
        2. The SourceCode value matches to more than 1 record in the Lookup.
    vi. Many to Many
        1. The SourceCode has more than one unique combination of SourceCat and SourceType values.
        2. The SourceCode value matches to more than 1 record in the Lookup.
f. Assign additional Cat and Type variables according to each type of match:
    i. 1 to 0
        1. Cat = SourceCat
        2. Type = "OT"
    ii. Many to 0
        1. Cat = SourceCat
        2. Type = "OT"
    iii. 1 to 1
        1. Cat = Lookup.CodeCat
        2. Type = Lookup.CodeType
    iv. Many to 1
        1. Cat = Lookup.CodeCat
        2. Type = Lookup.CodeType
    v. 1 to Many
        1. Cat = SourceCat
        2. Type = SourceType
    vi. Many to Many
        1. Cat = SourceCat
        2. Type = SourceType
g. Link the enhanced OP Temp Table 2 to OP Temp Table 1 by SourceCat, SourceType, and SourceCode.
h. Assign new variables:
    i. If Cat = "PX":

1. PX = SourceCode
2. PX_codetype = Type
3. OrigPX = SourceCode

ii. If Cat = "DX":

1. DX = SourceCode
2. DX_codetype = Type
3. OrigDX = SourceCode

i. Output to two temp tables:

i. OP Temp PX, with one record per unique, non-missing combination of:

1. DESYNPUF_ID
2. CLM_ID
3. PX
4. PX_codetype
5. OrigPX

ii. OP Temp DX, with one record per unique, non-missing combination of:

1. DESYNPUF_ID
2. CLM_ID
3. DX
4. DX_codetype
5. OrigDX

2. SCDM Encounter

a. Restrict to records having Segment = 1, and select unique combinations of:

i. DESYNPUF_ID
ii. CLM_ID
iii. PRVDR_NUM
iv. AT_PHYSN_NPI
v. OP_PHYSN_NPI
vi. OT_PHYSN_NPI
vii. CLM_FROM_DT

b. PatID

i. Straight mapping:

1. DESYNPUF_ID

c. EncounterID

i. Straight mapping:

1. CLM_ID

d. ADate

i. Straight mapping:

1. CLM_ FROM _DT

e. DDate

i. Hardcode:

1. . (missing)

a. Default value since information is irrelevant.

f. Provider

i. Transform:

1. Assign with the first non-missing value, in order:

a. AT_PHYSN_NPI
b. OP_PHYSN_NPI

c. OT_PHYSN_NPI
d. PRVDR_NUM
e. "UNKNOWN"
i. Default value if all other values are missing.

g. Facility_Location
i. Hardcode:
1. " " (missing)
a. Default value since information is unavailable.

h. EncType
i. Transform:
1. "ED" (Emergency department) if the claim has at least 1 code related to emergency department listed in **Appendix B**
a. Use OP Temp PX as source for the codes.
2. "OA" (Other ambulatory visit)
a. Claims having at least 1 code for institutional care or home health care visits as listed in **Appendix B**
i. Use OP Temp PX as source of the codes.
3. "AV" (Ambulatory visit) for all others

i. Facility_Code
i. Straight mapping:
1. PRVDR_NUM

j. Discharge_ Disposition
i. Hardcode:
1. If EncType = "ED", then assign "U" (unknown).
a. Default value since information is unavailable.
2. If EncType = "AV", then assign " " (missing).
a. Default value since information is unavailable and irrelevant.

k. Discharge_Status
i. Hardcode:
1. If EncType = "ED", then assign "UN" (unknown)
a. Default value since information is unavailable.
2. If EncType = "AV", then assign " " (missing).
a. Default value since information is unavailable and irrelevant.

l. DRG
i. Hardcode:
1. " " (missing)
a. Default value since information is unavailable and irrelevant.

m. DRG_Type
i. Hardcode:
1. " " (missing)
a. Default value since information is unavailable and irrelevant.

n. Admitting_Source
i. Hardcode
1. If EncType = "ED", then assign "UN" (Unknown).
a. Default value since information is unavailable.
2. If EncType = "AV", then assign " " (missing).
a. Default value since information is unavailable and irrelevant.

o. Ensure that the final OP Temp Encounter table has one record per unique combination of:

i. EncounterID

p. This table will be combined with Temp Encounter tables processed from the Carrier Claims and Inpatient Claims files to form the SCDM Encounter table.

3. SCDM Diagnosis

a. Use OP Temp DX table resulting from **Code Type algorithm**
b. PatID
    i. Straight mapping:
        1. DESYNPUF_ID
c. EncounterID
    i. Straight mapping:
        1. CLM_ID
d. ADate
    i. Duplicate:
        1. ADate value for same EncounterID in Temp OP Encounter
e. Provider
    i. Duplicate:
        1. Provider value for same EncounterID in Temp OP Encounter
f. EncType
    i. Duplicate:
        1. EncType value for same EncounterID in Temp OP Encounter
g. DX
    i. Straight mapping:
        1. DX
            a. Assigned using the **Code Type algorithm**
h. DX_Codetype
    i. Straight mapping:
        1. DX_Codetype
            a. Assigned using the **Code Type algorithm**
i. OrigDX
    i. Straight mapping:
        1. OrigDX
            a. Assigned using the **Code Type algorithm**
j. PDX
    i. Hardcode:
        1. " " (missing)
            a. Default value since information is irrelevant.
k. PAdmit
    i. Hard code:
        1. "U" (unknown)
            a. Default value since no information is available
l. Ensure that the final OP Temp Diagnosis table has one record per unique combination of:
    i. EncounterID
    ii. DX
    iii. DX_codetype
m. This table will be combined with Temp Diagnosis tables processed from the Carrier Claims and Inpatient Claims files to form the SCDM Diagnosis table.

4. SCDM Procedure

a. Use OP Temp PX table resulting from **Code Type algorithm**
b. PatID
    i. Straight mapping:
        1. DESYNPUF_ID
c. EncounterID
    i. Straight mapping:
        1. CLM_ID
d. ADate
    i. Duplicate:
        1. ADate value for same EncounterID in Temp OP Encounter
e. Provider
    i. Duplicate:
        1. Provider value for same EncounterID in Temp OP Encounter
f. EncType
    i. Duplicate:
        1. EncType value for same EncounterID in Temp OP Encounter
g. PX
    i. Straight mapping:
        1. PX
            a. Assigned using the **Code Type algorithm**
h. PX_Codetype
    i. Straight mapping:
        1. PX_Codetype
            a. Assigned using the **Code Type algorithm**
i. OrigPX
    i. Straight mapping:
        1. OrigPX
            a. Assigned using the **Code Type algorithm**
j. Ensure that the final OP Temp Procedure table has one record per unique combination of:
    i. EncounterID
    ii. PX
    iii. PX_codetype
k. This table will be combined with Temp Procedure tables processed from the Carrier Claims and Inpatient Claims files to form the SCDM Procedure table.

D. PROCESSING THE CARRIER CLAIMS (CAR) FILE

1. Code Type algorithm

a. Create CAR Temp Table 1 with one record for each unique combination of DESYNPUF_ID, CLM_ID, and diagnosis code or procedure code:
    i. ICD9_DGNS_CD_*N*
        1. Assign SourceCode with the value of ICD9_DGNS_CD_*N*.
            a. Replace the alpha "O" with the digit "0".
        2. Assign SourceCat with the value "DX".
        3. Assign SourceType with the value "09".
        4. Output one record for each non-missing value of ICD9_DGNS_CD_*N*.
    ii. ICD9_PRCDR_CD_*N*

1. Assign SourceCode with the value of ICD9_PRCDR_CD_*N*.
    a. Replace the alpha "O" with the digit "0".
2. Assign SourceCat with the value "PX".
3. Assign SourceType:
    a. If length < 5, then "09"
    b. Else if the first position is any alpha, then "HC"
    c. Else if the last position is "F", then "C2"
    d. Else if the last position is "T", then "C3"
    e. Else "C4"
4. Output one record for each non-missing value of ICD9_PRCDR_CD_*N*.

iii. HCPCS_CD_*N*

1. Assign SourceCode with the value of HCPCS_CD_*N*.
    a. Replace the alpha "O" with the digit "0".
2. Assign SourceCat with the value "PX".
3. Assign SourceType:
    a. If length < 5, then "09"
    b. Else if the first position is any alpha, then "HC"
    c. Else if the last position is "F", then "C2"
    d. Else if the last position is "T", then "C3"
    e. Else "C4"
4. Output one record for each non-missing value of HCPCS_CD_*N*.

b. The final processed CAR Temp Table 1 should have one record per unique, non-missing combination of:
    i. DESYNPUF_ID
    ii. CLM_ID
    iii. SourceCode
    iv. SourceCat
    v. SourceType
c. Create CAR Temp Table 2 with one record for each unique combination of:
    i. SourceCode
    ii. SourceCat
    iii. SourceType
d. Link CAR Temp Table 2 to a master clinical code lookup file by code regardless of category or type.
e. Determine the type of match:
    i. 1 to 0
        1. The SourceCode has only one unique combination of SourceCat and SourceType values.
        2. The SourceCode value matches to 0 records in the Lookup.
    ii. Many to 0
        1. The SourceCode has more than one unique combination of SourceCat and SourceType values.
        2. The SourceCode value matches to 0 records in the Lookup.
    iii. 1 to 1
        1. The SourceCode has only one unique combination of SourceCat and SourceType values.
        2. The SourceCode value matches to exactly 1 record in the Lookup.
    iv. Many to 1

1. The SourceCode has more than one unique combination of SourceCat and SourceType values.
2. The SourceCode value matches to exactly 1 record in the Lookup.

v. 1 to Many
1. The SourceCode has only one unique combination of SourceCat and SourceType values.
2. The SourceCode value matches to more than 1 record in the Lookup.

vi. Many to Many
1. The SourceCode has more than one unique combination of SourceCat and SourceType values.
2. The SourceCode value matches to more than 1 record in the Lookup.

f. Assign additional Cat and Type variables according to each type of match:
i. 1 to 0
1. Cat = SourceCat
2. Type = "OT"

ii. Many to 0
1. Cat = SourceCat
2. Type = "OT"

iii. 1 to 1
1. Cat = Lookup.CodeCat
2. Type = Lookup.CodeType

iv. Many to 1
1. Cat = Lookup.CodeCat
2. Type = Lookup.CodeType

v. 1 to Many
1. Cat = SourceCat
2. Type = SourceType

vi. Many to Many
1. Cat = SourceCat
2. Type = SourceType

g. Link the enhanced CAR Temp Table 2 to Temp Table 1 by SourceCat, SourceType, and SourceCode.

h. Assign new variables:
i. If Cat = "PX":
1. PX = SourceCode
2. PX_codetype = Type
3. OrigPX = SourceCode

ii. If Cat = "DX":
1. DX = SourceCode
2. DX_codetype = Type
3. OrigDX = SourceCode

i. Output to two temp tables:
i. CAR Temp PX, with one record per unique, non-missing combination of:
1. DESYNPUF_ID
2. CLM_ID
3. PX
4. PX_codetype
5. OrigPX

ii. CAR Temp DX, with one record per unique, non-missing combination of:
    1. DESYNPUF_ID
    2. CLM_ID
    3. DX
    4. DX_codetype
    5. OrigDX

2. SCDM Encounter

a. Select unique combinations of:
    i. DESYNPUF_ID
    ii. CLM_ID
    iii. CLM_FROM_DT
    iv. PRF_PHYSN_NPI_1
    v. TAX_NUM_1
    vi. NCH_BENE_DSCHRG_DT
b. PatID
    i. Straight mapping:
        1. DESYNPUF_ID
c. EncounterID
    i. Straight mapping:
        1. CLM_ID
d. ADate
    i. Straight mapping:
        1. CLM_ADMSN_DT
e. DDate
    i. Hardcode:
        1. . (missing)
            a. Default value since information is irrelevant.
f. Provider
    i. Transform:
        1. Assign with the first non-missing value, in order:
            a. PRF_PHYSN_NPI_1
            b. TAX_NUM_1
            c. "UNKNOWN"
                i. Default value if all other values are missing.
g. Facility_Location
    i. Hardcode:
        1. " " (missing)
            a. Default value since information is unavailable.
h. EncType
    i. Transform:
        1. "OA" (Other ambulatory visit)
            a. Claims having at least 1 code for institutional care or home health care visits as listed in **Appendix B**
                i. Use CAR Temp PX as source of the codes.
        2. "AV" (Ambulatory visit)
            a. All other claims
i. Facility_Code

i. Hardcode:
1. " " (missing)
a. Default value since information is unavailable.

j. Discharge_ Disposition
i. Hardcode:
1. " " (missing).
a. Default value since information is unavailable and irrelevant.

k. Discharge_Status
i. Hardcode:
1. " " (missing).
a. Default value since information is unavailable and irrelevant.

l. DRG
i. Hardcode:
1. " " (missing)
a. Default value since information is unavailable and irrelevant.

m. DRG_Type
i. Hardcode:
1. " " (missing)
a. Default value since information is unavailable and irrelevant.

n. Admitting_Source
i. Hardcode:
1. " " (missing)
a. Default value since information is unavailable and irrelevant.

o. Ensure that the final CAR Temp Encounter table has one record per unique combination of:
i. EncounterID

p. This table will be combined with Temp Encounter tables processed from the Outpatient Claims and Inpatient Claims files to form the SCDM Encounter table.

3. SCDM Diagnosis

a. Use CAR Temp DX table resulting from **Code Type algorithm**

b. PatID
i. Straight mapping:
1. DESYNPUF_ID

c. EncounterID
i. Straight mapping:
1. CLM_ID

d. ADate
i. Duplicate:
1. ADate value for same EncounterID in SCDM Encounter

e. Provider
i. Duplicate:
1. Provider value for same EncounterID in SCDM Encounter

f. EncType
i. Duplicate:
1. EncType value for same EncounterID in SCDM Encounter

g. DX
i. Straight mapping:
1. DX

a. Assigned using the **Code Type algorithm**

h. DX_Codetype
   i. Straight mapping:
      1. DX_Codetype
         a. Assigned using the **Code Type algorithm**

i. OrigDX
   i. Straight mapping:
      1. OrigDX
         a. Assigned using the **Code Type algorithm**

j. PDX
   i. Hardcode:
      1. " " (missing)
         a. Default value since information is irrelevant.

k. PAdmit
   i. Hard code:
      1. "U" (unknown)
         a. Default value since no information is available

l. Ensure that the final CAR Temp Diagnosis table has one record per unique combination of:
   i. EncounterID
   ii. DX
   iii. DX_codetype

m. This table will be combined with OP and IP Temp Diagnosis tables to form the SCDM Diagnosis table.

4. SCDM Procedure

a. Use CAR Temp PX table resulting from **Code Type algorithm**

b. PatID
   i. Straight mapping:
      1. DESYNPUF_ID

c. EncounterID
   i. Straight mapping:
      1. CLM_ID

d. ADate
   i. Duplicate:
      1. ADate value for same EncounterID in CAR Encounter

e. Provider
   i. Duplicate:
      1. Provider value for same EncounterID in CAR Encounter

f. EncType
   i. Duplicate:
      1. EncType value for same EncounterID in CAR Encounter

g. PX
   i. Straight mapping:
      1. PX
         a. Assigned using the **Code Type algorithm**

h. PX_Codetype
   i. Straight mapping:
      1. PX_Codetype

a. Assigned using the **Code Type algorithm**

i. OrigPX
   i. Straight mapping:
      1. OrigPX
         a. Assigned using the **Code Type algorithm**

j. Ensure that the final CAR Temp Procedure table has one record per unique combination of:
   i. EncounterID
   ii. PX
   iii. PX_codetype

k. This table will be combined with OP and IP Temp Procedure tables to form the SCDM Procedure table.

E. PROCESSING THE INPATIENT (IP) CLAIMS FILE

1. Code Type algorithm

a. Create IP Temp Table 1 with one record for each unique combination of DESYNPUF_ID, CLM_ID, and diagnosis code or procedure code:
   i. ICD9_DGNS_CD_*N*
      1. Assign SourceCode with the value of ICD9_DGNS_CD_*N*.
         a. Replace the alpha "O" with the digit "0".
      2. Assign SourceCat with the value "DX".
      3. Assign SourceType with the value "09".
      4. Assign SourceNum with the minimum value of *N* from ICD9_DGNS_CD_*N*.
      5. Output one record per CLM_ID for each non-missing value of ICD9_DGNS_CD_*N*.
   ii. ICD9_PRCDR_CD_*N*
      1. Assign SourceCode with the value of ICD9_PRCDR_CD_*N*.
         a. Replace the alpha "O" with the digit "0".
      2. Assign SourceCat with the value "PX".
      3. Assign SourceType:
         a. If length < 5, then "09"
         b. Else if the first position is any alpha, then "HC"
         c. Else if the last position is "F", then "C2"
         d. Else if the last position is "T", then "C3"
         e. Else "C4"
      4. Output one record per CLM_ID for each non-missing value of ICD9_PRCDR_CD_*N*.

b. The final processed IP Temp Table 1 should have one record per unique combination of:
   i. DESYNPUF_ID
   ii. CLM_ID
   iii. SourceCode
   iv. SourceCat
   v. SourceType
   vi. SourceNum

c. Create IP Temp Table 2 with one record for each unique combination of:
   i. SourceCode
   ii. SourceCat
   iii. SourceType

d. Link IP Temp Table 2 to a master clinical code lookup file by code regardless of category or type.
e. Determine the type of match:
    i. 1 to 0
        1. The SourceCode has only one unique combination of SourceCat and SourceType values.
        2. The SourceCode value matches to 0 records in the Lookup.
    ii. Many to 0
        1. The SourceCode has more than one unique combination of SourceCat and SourceType values.
        2. The SourceCode value matches to 0 records in the Lookup.
    iii. 1 to 1
        1. The SourceCode has only one unique combination of SourceCat and SourceType values.
        2. The SourceCode value matches to exactly 1 record in the Lookup.
    iv. Many to 1
        1. The SourceCode has more than one unique combination of SourceCat and SourceType values.
        2. The SourceCode value matches to exactly 1 record in the Lookup.
    v. 1 to Many
        1. The SourceCode has only one unique combination of SourceCat and SourceType values.
        2. The SourceCode value matches to more than 1 record in the Lookup.
    vi. Many to Many
        1. The SourceCode has more than one unique combination of SourceCat and SourceType values.
        2. The SourceCode value matches to more than 1 record in the Lookup.
f. Assign additional Cat and Type variables according to each type of match:
    i. 1 to 0
        1. Cat = SourceCat
        2. Type = "OT"
    ii. Many to 0
        1. Cat = SourceCat
        2. Type = "OT"
    iii. 1 to 1
        1. Cat = Lookup.CodeCat
        2. Type = Lookup.CodeType
    iv. Many to 1
        1. Cat = Lookup.CodeCat
        2. Type = Lookup.CodeType
    v. 1 to Many
        1. Cat = SourceCat
        2. Type = SourceType
    vi. Many to Many
        1. Cat = SourceCat
        2. Type = SourceType
g. Link the enhanced IP Temp Table 2 to IP Temp Table 1 by SourceCat, SourceType, and SourceCode.

h. Assign new variables:
    i. If Cat = "PX":
        1. PX = SourceCode
        2. PX_codetype = Type
        3. OrigPX = SourceCode
    ii. If Cat = "DX":
        1. DX = SourceCode
        2. DX_codetype = Type
        3. OrigDX = SourceCode
        4. PDX = "P" if SourceNum = 1, "S" for all others
i. Output to two temp tables:
    i. IP Temp DX, with one record per unique, non-missing combination of:
        1. DESYNPUF_ID
        2. CLM_ID
        3. DX
        4. DX_codetype
        5. PDX
        6. OrigDX
    ii. IP Temp PX, with one record per unique, non-missing combination of:
        1. DESYNPUF_ID
        2. CLM_ID
        3. PX
        4. PX_codetype
        5. OrigPX

2. SCDM Encounter

a. Restrict to records having Segment = 1, and select unique combinations of:
    i. DESYNPUF_ID
    ii. CLM_ID
    iii. PRVDR_NUM
    iv. AT_PHYSN_NPI
    v. OP_PHYSN_NPI
    vi. OT_PHYSN_NPI
    vii. CLM_ADMSN_DT
    viii. NCH_BENE_DSCHRG_DT
    ix. CLM_DRG_CD
b. PatID
    i. Straight mapping:
        1. DESYNPUF_ID
c. EncounterID
    i. Straight mapping:
        1. CLM_ID
d. ADate
    i. Straight mapping:
        1. CLM_ADMSN_DT
e. DDate
    i. Straight mapping:
        1. NCH_BENE_DSCHRG_DT

f. Provider
    i. Transform:
        1. Assign with the first non-missing value, in order:
            a. AT_PHYSN_NPI
            b. OP_PHYSN_NPI
            c. OT_PHYSN_NPI
            d. PRVDR_NUM
            e. "UNKNOWN"
                i. Default value if all other values are missing.

g. Facility_Location
    i. Hardcode:
        1. " " (missing)
            a. Default value since information is unavailable.

h. EncType
    i. Transform:
        1. "IS" (Non-acute institutional stay)
            a. Create a subset of claims from the OP and CAR files having one or more institutional care-related codes as listed in **Appendix B**.
            b. Link by DESYNPUF_ID where the OP CLM_ADMSN_DT or CAR CLM_FROM_DT value is between the IP claim CLM_ADMSN_DT and NCH_BENE_DSCHRG_DT values, inclusive.
            c. If NCH_BENE_DSCHRG_DT – CLM_ADMSN_DT > 2, assign "IS".
        2. "IP" (Inpatient hospital stay) for all others

i. Facility_Code
    i. Straight mapping:
        1. PRVDR_NUM

j. Discharge_ Disposition
    i. Hardcode:
        1. "U" (unknown)
            a. Default value since information is unavailable.

k. Discharge_Status
    i. Hardcode:
        1. "UN" (unknown)
            a. Default value since information is unavailable.

l. DRG
    i. Straight mapping:
        1. CLM_DRG_CD

m. DRG_Type
    i. Hardcode:
        1. "2" (MS-DRG)
            a. MS-DRG (current system) began on 10/1/2007.

n. Admitting_Source
    i. Hardcode
        1. "UN" (Unknown)
        2. Default value since information is unavailable.

o. The final IP Temp Encounter table has one record per unique combination of:
    i. EncounterID

p. This table will be combined with CAR and OP Temp Encounter tables to form the SCDM Encounter table.

3. SCDM Diagnosis

a. Use IP Temp DX table resulting from **Code Type algorithm**
b. PatID
    i. Straight mapping:
        1. DESYNPUF_ID
c. EncounterID
    i. Straight mapping:
        1. CLM_ID
d. ADate
    i. Duplicate:
        1. ADate value for same EncounterID in SCDM Encounter
e. Provider
    i. Duplicate:
        1. Provider value for same EncounterID in SCDM Encounter
f. EncType
    i. Duplicate:
        1. EncType value for same EncounterID in SCDM Encounter
g. DX
    i. Straight mapping:
        1. DX
            a. Assign using the **Code Type algorithm**
h. DX_Codetype
    i. Straight mapping:
        1. DX_Codetype
            a. Assign using the **Code Type algorithm**
i. OrigDX
    i. Straight mapping:
        1. OrigDX
            a. Assign using the **Code Type algorithm**
j. PDX
    i. Straight mapping:
        1. PDX
            a. Assign using the **Code Type algorithm**
k. PAdmit
    i. Hard code:
        1. "U" (unknown)
            a. Default value since information is unavailable
l. The final IP Temp Diagnosis table has one record per unique combination of:
    i. EncounterID
    ii. DX
    iii. DX_codetype
m. This table will be combined with OP and CAR Temp Diagnosis tables to form the SCDM Diagnosis table.

4. SCDM Procedure

a. Use IP Temp PX table resulting from **Code Type algorithm**
b. PatID
    i. Straight mapping:
        1. DESYNPUF_ID
c. EncounterID
    i. Straight mapping:
        1. CLM_ID
d. ADate
    i. Duplicate:
        1. ADate value for same EncounterID in SCDM Encounter
e. Provider
    i. Duplicate:
        1. Provider value for same EncounterID in SCDM Encounter
f. EncType
    i. Duplicate:
        1. EncType value for same EncounterID in SCDM Encounter
g. PX
    i. Straight mapping:
        1. PX
            a. Assigned using the **Code Type algorithm**
h. PX_Codetype
    i. Straight mapping:
        1. PX_Codetype
            a. Assigned using the **Code Type algorithm**
i. OrigPX
    i. Straight mapping:
        1. OrigPX
            a. Assign using the **Code Type algorithm**
j. The final IP Temp Procedure table has one record per unique combination of:
    i. EncounterID
    ii. PX
    iii. PX_codetype
k. This table will be combined with OP and CAR Temp Procedure tables to form the SCDM Procedure table.

F. COMPLETING THE SCDM TABLES

1. SCDM Demographic

a. Assign ZIP_date for each PatID with the minimum corresponding value of Enr_Start from the SCDM Enrollment table.
    i. Assign value as missing if ZIP is missing.
b. Exclude any records:
    i. where the PatID has 0 records in the SCDM Enrollment table

2. SCDM Dispensing

a. Exclude any records:
    i. where the PatID has 0 records in the SCDM Enrollment table

3. **SCDM Encounter**
    a. Concatenate the final results of SCDM Encounter processing:
        i. OP Temp Encounter
        ii. CAR Temp Encounter
        iii. IP Temp Encounter
    b. Exclude records:
        i. having ADate < 1/1/2008 or > 12/31/2010
        ii. where the PatID has 0 records in the SCDM Enrollment table
    c. Ensure that the final dataset matches the **SCDM Encounter table structure**.
4. **SCDM Diagnosis**
    a. Concatenate the final results of SCDM Diagnosis processing:
        i. OP Temp Diagnosis
        ii. CAR Temp Diagnosis
        iii. IP Temp Diagnosis
    b. Exclude records:
        i. having ADate < 1/1/2008 or > 12/31/2010
        ii. where the PatID has 0 records in the SCDM Enrollment table
    c. Ensure that the final dataset matches the **SCDM Diagnosis table structure**.
5. **SCDM Procedure**
    a. Concatenate the final results of SCDM Procedure processing:
        i. OP Temp Procedure
        ii. CAR Temp Procedure
        iii. IP Temp Procedure
    b. Exclude records:
        i. having ADate < 1/1/2008 or > 12/31/2010
        ii. where the PatID has 0 records in the SCDM Enrollment table
    c. Ensure that the final dataset matches the **SCDM Procedure table structure**.
6. **SCDM Death**
    a. Exclude records:
        i. where the PatID has 0 records in the SCDM Enrollment table

X. APPENDIX

A. MACRO PARAMETERS

1. Step A Macro Parameters

Parameter	Field Name	Description
2008 Beneficiary input file	INDS_bene_file_2008	**Details**: Enter the two-level name of the SynPUFs 2008 Beneficiary input file **Defined by:** User programmer **Input type:** Required **Format:** two-level SAS dataset name, i.e. *library.dataset* **Example**: *INDS_bene_file_2008* = synpuf.bene_2008_1
2009 Beneficiary input file	INDS_bene_file_2009	**Details**: Enter the two-level name of the SynPUFs 2009 Beneficiary input file **Defined by:** User programmer **Input type:** Required **Format:** two-level SAS dataset name, i.e. *library.dataset* **Example**: *INDS_bene_file_2009* = synpuf.bene_2009_1
2010 Beneficiary input file	INDS_bene_file_2010	**Details**: Enter the two-level name of the SynPUFs 2010 Beneficiary input file **Defined by:** User programmer **Input type:** Required **Format:** two-level SAS dataset name, i.e. *library.dataset* **Example**: *INDS_bene_file_2010* = synpuf.bene_2010_1
CMS State/County to ZIP conversion table	LKDS_zip	**Details**: Enter the two-level name of the ZIP-code conversion lookup table **Defined by:** User programmer **Input type:** Required **Format:** two-level SAS dataset name, i.e. *library.dataset* **Example**: *LKDS_zip* = infolder.zip_fips_cms
Temporary Demographic table output dataset	OUTDS_temp_dem	**Details**: Enter the two-level name of the Temp Demographic output table **Defined by:** User programmer **Input type:** Required **Format:** two-level SAS dataset name, i.e. *library.dataset* **Example**: *OUTDS_temp_dem* = _temp_dem_1
Temporary Death table output dataset	OUTDS_temp_death	**Details**: Enter the two-level name of the Temp Death output table **Defined by:** User programmer **Input type:** Required **Format:** two-level SAS dataset name, i.e. *library.dataset* **Example**: *OUTDS_temp_death* = _temp_death_1

Parameter	Field Name	Description
Final SCDM Enrollment table output dataset	OUTDS_scdm_enr	**Details**: Enter the two-level name of the SCDM Enrollment output table **Defined by:** User programmer **Input type:** Required **Format:** two-level SAS dataset name, i.e. *library.dataset* **Example**: *OUTDS_scdm_enr* = scdm.enrollment_1

2. Step B Macro Parameters

Parameter	Field Name	Description
Prescription Drug Events input file	INDS_pde_file	**Details**: Enter the two-level name of the SynPUFs Prescription Drug Events input file **Defined by:** User programmer **Input type:** Required **Format:** two-level SAS dataset name, i.e. *library.dataset* **Example**: *INDS_pde_file* = synpuf.pde_1
Temporary Dispensing table output dataset	OUTDS_temp_dis	**Details**: Enter the two-level name of the Temp Dispensing output table **Defined by:** User programmer **Input type:** Required **Format:** two-level SAS dataset name, i.e. *library.dataset* **Example**: *OUTDS_temp_death* = _temp_dis_1

3. Codetype Algorithm Macro Parameters

Parameter	Field Name	Description
SynPUFs input file abbreviation	fileabbrev	**Details**: Enter one of the following abbreviations to process one file at a time **Valid values:** • OP = Outpatient Claims • CAR = Carrier Claims • IP = Inpatient Claims **Defined by:** User programmer **Input type:** Required **Format:** valid value only **Example**: *fileabbrev* = OP

4. Step C Macro Parameters

Parameter	Field Name	Description
Outpatient Claims input file	INDS_op_file	**Details**: Enter the two-level name of the SynPUFs Outpatient Claims input file **Defined by:** User programmer **Input type:** Required **Format:** two-level SAS dataset name, i.e. *library.dataset* **Example**: *INDS_op_file* = synpuf.op_1
Clinical codes master table	LKDS_codes	**Details**: Enter the two-level name of the master clinical code lookup table **Defined by:** User programmer **Input type:** Required **Format:** two-level SAS dataset name, i.e. *library.dataset* **Example**: *LKDS_codes* = infolder.clinical_codes
Home health care code table	LKDS_home_codes	**Details**: Enter the two-level name of the home care code lookup table **Defined by:** User programmer **Input type:** Required **Format:** two-level SAS dataset name, i.e. *library.dataset* **Example**: *LKDS_home_codes* = infolder.home_codes
Institutional stay code table	LKDS_is_codes	**Details**: Enter the two-level name of the institutional stay code lookup table **Defined by:** User programmer **Input type:** Required **Format:** two-level SAS dataset name, i.e. *library.dataset* **Example**: *LKDS_is_codes* = infolder.is_codes
Emergency department code table	LKDS_ed_codes	**Details**: Enter the two-level name of the emergency department code lookup table **Defined by:** User programmer **Input type:** Required **Format:** two-level SAS dataset name, i.e. *library.dataset* **Example**: *LKDS_ed_codes* = infolder.ed_codes
Outpatient Temporary Encounter table output dataset	OUTDS_op_temp_enc	**Details**: Enter the two-level name of the OP Temp Encounter output table **Defined by:** User programmer **Input type:** Required **Format:** two-level SAS dataset name, i.e. *library.dataset* **Example**: *OUTDS_op_temp_enc* = _op_temp_enc_1
Outpatient Temporary	OUTDS_op_temp_dia	**Details**: Enter the two-level name of the OP Temp Diagnosis output table

Parameter	Field Name	Description
Diagnosis table output dataset		**Defined by:** User programmer **Input type:** Required **Format:** two-level SAS dataset name, i.e. *library.dataset* **Example**: *OUTDS_op_temp_dia* = _op_temp_dia_1
Outpatient Temporary Procedure table output dataset	OUTDS_op_temp_pro	**Details**: Enter the two-level name of the OP Temp Procedure output table **Defined by:** User programmer **Input type:** Required **Format:** two-level SAS dataset name, i.e. *library.dataset* **Example**: *OUTDS_op_temp_pro* = _op_temp_pro_1

5. Step D Macro Parameters

Parameter	Field Name	Description
Carrier Claims input file	INDS_car_file	**Details**: Enter the two-level name of the SynPUFs Carrier Claims input file **Defined by:** User programmer **Input type:** Required **Format:** two-level SAS dataset name, i.e. *library.dataset* **Example**: *INDS_car_file* = synpuf.car_1
Clinical codes master table	LKDS_codes	**Details**: Enter the two-level name of the master clinical code lookup table **Defined by:** User programmer **Input type:** Required **Format:** two-level SAS dataset name, i.e. *library.dataset* **Example**: *LKDS_codes* = infolder.clinical_codes
Home health care code table	LKDS_home_codes	**Details**: Enter the two-level name of the home care code lookup table **Defined by:** User programmer **Input type:** Required **Format:** two-level SAS dataset name, i.e. *library.dataset* **Example**: *LKDS_home_codes* = infolder.home_codes
Institutional stay code table	LKDS_is_codes	**Details**: Enter the two-level name of the institutional stay code lookup table **Defined by:** User programmer **Input type:** Required **Format:** two-level SAS dataset name, i.e. *library.dataset* **Example**: *LKDS_is_codes* = infolder.is_codes
Emergency department code table	LKDS_ed_codes	**Details**: Enter the two-level name of the emergency department code lookup table **Defined by:** User programmer

Parameter	Field Name	Description
		Input type: Required **Format:** two-level SAS dataset name, i.e. *library.dataset* **Example**: *LKDS_ed_codes* = infolder.ed_codes
Carrier Temporary Encounter output table	OUTDS_car_temp_enc	**Details**: Enter the two-level name of the CAR Temp Encounter output table **Defined by:** User programmer **Input type:** Required **Format:** two-level SAS dataset name, i.e. *library.dataset* **Example**: *OUTDS_car_temp_enc* = _car_temp_enc_1
Carrier Temporary Diagnosis table output dataset	OUTDS_car_temp_dia	**Details**: Enter the two-level name of the CAR Temp Diagnosis output table **Defined by:** User programmer **Input type:** Required **Format:** two-level SAS dataset name, i.e. *library.dataset* **Example**: *OUTDS_car_temp_dia* = _car_temp_dia_1
Carrier Temporary Procedure table output dataset	OUTDS_car_temp_pro	**Details**: Enter the two-level name of the CAR Temp Procedure output table **Defined by:** User programmer **Input type:** Required **Format:** two-level SAS dataset name, i.e. *library.dataset* **Example**: *OUTDS_car_temp_pro* = _car_temp_pro_1

6. Step E Macro Parameters

Parameter	Field Name	Description
Inpatient Claims input file	INDS_ip_file	**Details**: Enter the two-level name of the SynPUFs Inpatient Claims input file **Defined by:** User programmer **Input type:** Required **Format:** two-level SAS dataset name, i.e. *library.dataset* **Example**: *INDS_ip_file* = synpuf.ip_1
Clinical codes master table	LKDS_codes	**Details**: Enter the two-level name of the master clinical code lookup table **Defined by:** User programmer **Input type:** Required **Format:** two-level SAS dataset name, i.e. *library.dataset* **Example**: *LKDS_codes* = infolder.clinical_codes
Outpatient Temporary Encounter input table	INDS_op_temp_enc	**Details**: Enter the two-level name of the OP Temp Encounter input table **Defined by:** User programmer **Input type:** Required

Parameter	Field Name	Description
		Format: two-level SAS dataset name, i.e. *library.dataset* **Example**: *INDS_op_temp_enc* = _op_temp_enc_1
Carrier Temporary Encounter input table	INDS_car_temp_enc	**Details**: Enter the two-level name of the CAR Temp Encounter input table **Defined by:** User programmer **Input type:** Required **Format:** two-level SAS dataset name, i.e. *library.dataset* **Example**: *INDS_car_temp_enc* = _car_temp_enc_1
Inpatient Temporary Encounter table output dataset	OUTDS_ip_temp_enc	**Details**: Enter the two-level name of the IP Temp Encounter output table **Defined by:** User programmer **Input type:** Required **Format:** two-level SAS dataset name, i.e. *library.dataset* **Example**: *OUTDS_car_temp_enc* = _ip_temp_enc_1
Inpatient Temporary Diagnosis table output dataset	OUTDS_ip_temp_dia	**Details**: Enter the two-level name of the IP Temp Diagnosis output table **Defined by:** User programmer **Input type:** Required **Format:** two-level SAS dataset name, i.e. *library.dataset* **Example**: *OUTDS_car_temp_dia* = _ip_temp_dia_1
Inpatient Temporary Procedure table output dataset	OUTDS_ip_temp_pro	**Details**: Enter the two-level name of the IP Temp Procedure output table **Defined by:** User programmer **Input type:** Required **Format:** two-level SAS dataset name, i.e. *library.dataset* **Example**: *OUTDS_car_temp_pro* = _ip_temp_pro_1

7. Step F macro parameters

Parameter	Field Name	Description
SCDM Enrollment input table	INDS_scdm_enr	**Details**: Enter the two-level name of the SCDM Enrollment input table **Defined by:** User programmer **Input type:** Required **Format:** two-level SAS dataset name, i.e. *library.dataset* **Example**: *INDS_scdm_enr* = scdm.enrollment_1
Temporary Demographic input table	INDS_temp_dem	**Details**: Enter the two-level name of the Temp Demographic input table **Defined by:** User programmer **Input type:** Required **Format:** two-level SAS dataset name, i.e. *library.dataset* **Example**: *INDS_temp_dem* = _temp_dem_1
Temporary Death input table	INDS_temp_death	**Details**: Enter the two-level name of the Temp Death input table **Defined by:** User programmer **Input type:** Required **Format:** two-level SAS dataset name, i.e. *library.dataset* **Example**: *INDS_temp_death* = _temp_death _1
Temporary Dispensing input table	INDS_temp_dis	**Details**: Enter the two-level name of the Temp Dispensing input table **Defined by:** User programmer **Input type:** Required **Format:** two-level SAS dataset name, i.e. *library.dataset* **Example**: *INDS_temp_dis* = _temp_dis_1
Temporary Outpatient Encounter input table	INDS_op_temp_enc	**Details**: Enter the two-level name of the OP Temp Encounter input table **Defined by:** User programmer **Input type:** Required **Format:** two-level SAS dataset name, i.e. *library.dataset* **Example**: *INDS_op_temp_enc* = _op_temp_enc_1
Temporary Outpatient Diagnosis input table	INDS_op_temp_dia	**Details**: Enter the two-level name of the OP Temp Diagnosis input table **Defined by:** User programmer **Input type:** Required **Format:** two-level SAS dataset name, i.e. *library.dataset* **Example**: *INDS_op_temp_dia* = _op_temp_dia_1
Temporary Outpatient Procedure input table	INDS_op_temp_pro	**Details**: Enter the two-level name of the OP Temp Procedure input table **Defined by:** User programmer

Parameter	Field Name	Description
		Input type: Required **Format:** two-level SAS dataset name, i.e. *library.dataset* **Example**: *INDS_op_temp_pro* = _op_temp_pro_1
Temporary Carrier Encounter input table	INDS_car_temp_enc	**Details**: Enter the two-level name of the CAR Temp Encounter input table **Defined by:** User programmer **Input type:** Required **Format:** two-level SAS dataset name, i.e. *library.dataset* **Example**: *INDS_car_temp_enc* = _car_temp_enc_1
Temporary Carrier Diagnosis input table	INDS_car_temp_dia	**Details**: Enter the two-level name of the CAR Temp Diagnosis input table **Defined by:** User programmer **Input type:** Required **Format:** two-level SAS dataset name, i.e. *library.dataset* **Example**: *INDS_car_temp_dia* = _car_temp_dia_1
Temporary Carrier Procedure input table	INDS_car_temp_pro	**Details**: Enter the two-level name of the CAR Temp Procedure input table **Defined by:** User programmer **Input type:** Required **Format:** two-level SAS dataset name, i.e. *library.dataset* **Example**: *INDS_car_temp_pro* = _car_temp_pro_1
Temporary Inpatient Encounter input table	INDS_ip_temp_enc	**Details**: Enter the two-level name of the IP Temp Encounter input table **Defined by:** User programmer **Input type:** Required **Format:** two-level SAS dataset name, i.e. *library.dataset* **Example**: *INDS_ip_temp_enc* = _ip_temp_enc_1
Temporary Inpatient Diagnosis input table	INDS_ip_temp_dia	**Details**: Enter the two-level name of the IP Temp Diagnosis input table **Defined by:** User programmer **Input type:** Required **Format:** two-level SAS dataset name, i.e. *library.dataset* **Example**: *INDS_ip_temp_dia* = _ip_temp_dia_1
Temporary Inpatient Procedure input table	INDS_ip_temp_pro	**Details**: Enter the two-level name of the IP Temp Procedure input table **Defined by:** User programmer **Input type:** Required **Format:** two-level SAS dataset name, i.e. *library.dataset* **Example**: *INDS_ip_temp_pro* = _ip_temp_pro_1

Parameter	Field Name	Description
Final SCDM Demographic table output dataset	OUTDS_scdm_dem	**Details**: Enter the two-level name of the SCDM Demographic output table **Defined by:** User programmer **Input type:** Required **Format:** two-level SAS dataset name, i.e. *library.dataset* **Example**: *OUTDS_scdm_dem* = scdm.demographic_1
Final SCDM Dispensing table output dataset	OUTDS_scdm_dis	**Details**: Enter the two-level name of the SCDM Dispensing output table **Defined by:** User programmer **Input type:** Required **Format:** two-level SAS dataset name, i.e. *library.dataset* **Example**: *OUTDS_scdm_dis* = scdm.dispensing_1
Final SCDM Encounter table output dataset	OUTDS_scdm_enc	**Details**: Enter the two-level name of the SCDM Encounter output table **Defined by:** User programmer **Input type:** Required **Format:** two-level SAS dataset name, i.e. *library.dataset* **Example**: *OUTDS_scdm_enc* = scdm.encounter_1
Final SCDM Diagnosis table output dataset	OUTDS_scdm_dia	**Details**: Enter the two-level name of the SCDM Diagnosis output table **Defined by:** User programmer **Input type:** Required **Format:** two-level SAS dataset name, i.e. *library.dataset* **Example**: *OUTDS_scdm_dia* = scdm.diagnosis_1
Final SCDM Procedure table output dataset	OUTDS_scdm_pro	**Details**: Enter the two-level name of the SCDM Procedure output table **Defined by:** User programmer **Input type:** Required **Format:** two-level SAS dataset name, i.e. *library.dataset* **Example**: *OUTDS_scdm_pro* = scdm.procedure_1
Final SCDM Death table output dataset	OUTDS_scdm_death	**Details**: Enter the two-level name of the SCDM Death output table **Defined by:** User programmer **Input type:** Required **Format:** two-level SAS dataset name, i.e. *library.dataset* **Example**: *OUTDS_scdm_death* = scdm.death_1

8. Run Everything Macro Parameters

The run_everything macro is used to automate processing of any number of the 20 SynPUFs subsamples.

Parameter	Field Name	Description
First SynPUFs subsample number	startnum	**Details**: Enter a number 1 through 20 for the first SynPUFs subsample to process **Defined by:** User programmer **Input type:** Required **Format:** numeric valid value only **Example**: *startnum* = 1
Last SynPUFs subsample number	endnum	**Details**: Enter a number 1 through 20 for the last SynPUFs subsample to process **Defined by:** User programmer **Input type:** Required **Format:** numeric value only **Example**: *endnum* = 20
Delete temporary datasets?	YN_DeleteTempDS	**Details**: Enter Y to delete temporary datasets after processing is complete **Defined by:** User programmer **Input type:** Optional **Format:** alpha valid value only **Example**: *YN_DeleteTempDS* = _temp_dis_1

B. CLINICAL CODES USED AS PROXY TO IDENTIFY ADDITIONAL ENCOUNTER TYPES

1. Emergency Department (ED)

CodeCat	CodeType	Code	Description
PX	C4	99281	EMERGENCY DEPARTMENT VISIT LIMITED/MINOR PROB
PX	C4	99282	EMERGENCY DEPARTMENT VISIT LOW/MODER SEVERITY
PX	C4	99283	EMERGENCY DEPARTMENT VISIT MODERATE SEVERITY
PX	C4	99284	EMERGENCY DEPARTMENT VISIT HIGH/URGENT SEVERITY
PX	C4	99285	EMERGENCY DEPT VISIT HIGH SEVERITY&THREAT FUNCJ
PX	HC	G0380	LEVEL 1 HOSPITAL EMERGENCY DEPT VISIT TYPE B ED;
PX	HC	G0381	LEVEL 2 HOSPITAL EMERGENCY DEPT VISIT TYPE B ED;
PX	HC	G0382	LEVEL 3 HOSPITAL EMERGENCY DEPT VISIT TYPE B ED;
PX	HC	G0383	LEVEL 4 HOSPITAL EMERGENCY DEPT VISIT TYPE B ED;
PX	HC	G0384	LEVEL 5 HOSPITAL EMERGENCY DEPT VISIT TYPE B ED;
PX	RE	0450	Emergency Room-General
PX	RE	0451	Emergency Room-EMTALA Emergency Medical Screening Services
PX	RE	0452	Emergency Room-ER Beyond EMTALA
PX	RE	0453	Reserved
PX	RE	0454	Reserved

CodeCat	CodeType	Code	Description
PX	RE	0455	Reserved
PX	RE	0456	Emergency Room-Urgent Care
PX	RE	0457	Reserved
PX	RE	0458	Reserved
PX	RE	0459	Emergency Room-Other Emergency Room

2. Other Ambulatory Visit (OA)

a. Institutional Care

This codeset includes provider visits to skilled nursing facility (SNF), rehabilitation, boarding home, rest home, and other domiciliary facilities. These codes will also be used to distinguish Non-Acute Institutional Stay (IS) encounters from IP.

CodeCat	CodeType	Code	Description
PX	C4	90300	Initial Care, Skilled Nursing Facility, Intermediate Care Fa
PX	C4	90315	Initial Care, Skilled Nursing Facility, Intermediate Care Fa
PX	C4	90320	Initial Care, Skilled Nursing Facility, Intermediate Care Fa
PX	C4	90340	Subsequent Care, Skilled Nursing Facility, Intermediate Care
PX	C4	90350	Subsequent Care, Skilled Nursing Facility, Intermediate Care
PX	C4	90360	Subsequent Care, Skilled Nursing Facility, Intermediate Care
PX	C4	90370	Subsequent Care, Skilled Nursing Facility, Intermediate Care
PX	C4	99301	E&M N/E ANNUAL NURS FACIL ASSESS STABLE 30 MIN
PX	C4	99302	E&M NEW/ESTAB NURS FACIL SIGNIF COMPLIC 40 MIN
PX	C4	99303	E&M NEW/ESTAB NURS FACIL ADMIT/READMIT 50 MIN
PX	C4	99304	INITIAL NURSING FACILITY CARE/DAY 25 MINUTES
PX	C4	99305	INITIAL NURSING FACILITY CARE/DAY 35 MINUTES
PX	C4	99306	INITIAL NURSING FACILITY CARE/DAY 45 MINUTES
PX	C4	99307	SBSQ NURSING FACILITY CARE/DAY E/M STABLE 10 MIN
PX	C4	99308	SBSQ NURSING FACIL CARE/DAY MINOR COMPLJ 15 MIN
PX	C4	99309	SBSQ NURSING FACIL CARE/DAY NEW PROBLEM 25 MIN
PX	C4	99310	SBSQ NURS FACIL CARE/DAY UNSTABL/NEW PROB 35 MIN
PX	C4	99311	SUBSQT NRS FACL CARE DAY E&M STABLE 15 MIN
PX	C4	99312	SUBSQT NRS FACL CARE DAY E&M MINOR CMPL 25 MIN
PX	C4	99313	SUBSQT NRS FACL CARE DAY E&M SIG CMPL 35 MIN
PX	C4	99315	NURSING FACILITY DISCHARGE MANAGEMENT 30 MINUTES
PX	C4	99316	NURSING FACILITY DISCHARGE MANAGEMENT 30 MINUTES
PX	C4	99318	E/M ANNUAL NURSING FACILITY ASSESS STABLE 30 MIN
PX	C4	99379	SUPERVISION NURS FACILITY PATIENT MO 15-29 MIN
PX	C4	99380	SUPERVISION NURS FACILITY PATIENT MONTH 30 MIN/>
PX	HC	G0471	COLL V BLD VP/URN SMP CATH IND SNF/LAB BHALF HHA
PX	HC	P9610	CATH COLLECT SPEC 1 (NURSING)HOME SNF PT
PX	HC	Q5004	HOSPICE CARE PROVIDED SKILLED NURSING FACILITY
PX	HC	S3601	EMERG STAT LAB CHARGE PT HOMBOUND/RESID NRS FACL
PX	HC	S9529	HOME OR SKILLED NURSING FACILITY PATIENT
PX	RE	0022	Skilled nursing facility prospective payment system (RUG)
PX	RE	0550	Skilled Nursing-General

CodeCat	CodeType	Code	Description
PX	RE	0551	Skilled Nursing-Visit Charge
PX	RE	0552	Skilled Nursing-Hourly Charge
PX	RE	0559	Skilled Nursing-Other Skilled Nursing
PX	RE	0658	Hospice Service-Hospice Room & Board-Nursing Facility
DX	09	V66	CONVALESCENCE AND PALLIATIVE CARE
DX	09	V660	CONVALESCENCE FOLLOWING SURGERY
DX	09	V661	CONVALESCENCE FOLLOWING RADIOTHERAPY
DX	09	V662	CONVALESCENCE FOLLOWING CHEMOTHERAPY
DX	09	V663	CONVALESCENCE FLW PSYCHOTHAPY&OTH TX MENTL D/O
DX	09	V664	CONVALESCENCE FOLLOWING TREATMENT OF FRACTURE
DX	09	V665	CONVALESCENCE FOLLOWING OTHER TREATMENT
DX	09	V666	CONVALESCENCE FOLLOWING COMBINED TREATMENT
DX	09	V669	UNSPECIFIED CONVALESCENCE
PX	C4	90400	Rest Home (eg, Boarding Home), Domiciliary, Or Custodial Car
PX	C4	90410	Rest Home (eg, Boarding Home), Domiciliary, Or Custodial Car
PX	C4	90415	Rest Home (eg, Boarding Home), Domiciliary, Or Custodial Car
PX	C4	90420	Rest Home (eg, Boarding Home), Domiciliary, Or Custodial Car
PX	C4	90430	Rest Home (eg, Boarding Home), Domiciliary, Or Custodial Car
PX	C4	90440	Rest Home (eg, Boarding Home), Domiciliary, Or Custodial Car
PX	C4	90450	Rest Home (eg, Boarding Home), Domiciliary, Or Custodial Car
PX	C4	99321	DOMICIL/REST HOME VISIT E&M NEW PT LOW SEVERITY
PX	C4	99322	DOMICIL/REST HOME VISIT E&M NEW PT MOD SEVERITY
PX	C4	99323	DOMICIL/REST HOME VISIT E&M NEW PT HI COMPLX
PX	C4	99324	DOMICIL/REST HOME NEW PT VISIT LOW SEVER 20 MIN
PX	C4	99325	DOMICIL/REST HOME NEW PT VISIT MOD SEVER 30 MIN
PX	C4	99326	DOMICIL/REST HOME NEW PT HI-MOD SEVER 45 MINUTES
PX	C4	99327	DOMICIL/REST HOME NEW PT VISIT HI SEVER 60 MIN
PX	C4	99328	DOM/R-HOME E/M NEW PT SIGNIF NEW PROB 75 MINUTES
PX	C4	99331	DOMICIL/REST HOME VISIT E&M EST PT STABLE/RECOVR
PX	C4	99332	DOMICIL/REST HOME VISIT E&M EST PT MINOR CMPL
PX	C4	99333	DOMICIL/REST HOME VISIT E&M EST PT SIG CMPL
PX	C4	99334	DOM/R-HOME E/M EST PT SELF-LMTD/MINOR 15 MINUTES
PX	C4	99335	DOM/R-HOME E/M EST PT LW MOD SEVERITY 25 MINUTES
PX	C4	99336	DOM/R-HOME E/M EST PT MOD HI SEVERITY 40 MINUTES
PX	C4	99337	DOM/R-HOME E/M EST PT SIGNIF NEW PROB 60 MINUTES
PX	C4	99339	INDIV PHYS SUPVJ HOME/DOM/R-HOME MO 15-29 MIN
PX	C4	99340	INDIV PHYS SUPVJ HOME/DOM/R-HOME MO 30 MIN/>
PX	RE	1005	Behavioral Health Accommodations-Group Home

b. Home Health Care

This codeset includes provider visits for home health care, home infusion, and palliative care (hospice).

CodeCat	CodeType	Code	Description
DX	09	V667	ENCOUNTER FOR PALLIATIVE CARE
PX	C4	90100	HOME MEDICAL SERVICE, NEW PATIENT; BRIEF SERVICE
PX	C4	90110	Home Medical Service, New Patient; Limited Service
PX	C4	90115	Home Medical Service, New Patient; Intermediate Service
PX	C4	90117	Home Medical Service, New Patient; Extended Service
PX	C4	90130	Home Medical Service, Established Patient; Minimal Service
PX	C4	90140	Home Medical Service, Established Patient; Brief Service
PX	C4	90150	Home Medical Service, Established Patient; Limited Service
PX	C4	90160	Home Medical Service, Established Patient; Intermediate Serv
PX	C4	90170	Home Medical Service, Established Patient; Extended Service
PX	C4	90963	ESRD SVC HOME DIALYSIS FULL MONTH <2YR OLD
PX	C4	90964	ESRD SVC HOME DIALYSIS FULL MONTH 2-11 YR OLD
PX	C4	90965	ESRD SVC HOME DIALYSIS FULL MONTH 12-19 YR OLD
PX	C4	90966	ESRD SVC HOME DIALYSIS FULL MONTH 20 YR OLD
PX	C4	90967	ESRD RELATED SVC <FULL MONTH <2 YR OLD
PX	C4	90968	ESRD RELATED SVC <FULL MONTH 2-11 YR OLD
PX	C4	90969	ESRD RELATED SVC <FULL MONTH 12-19 YR OLD
PX	C4	90970	ESRD RELATED SVC <FULL MONTH 20/>YR OLD
PX	C4	90991	Home Hemodialysis Care, Outpatient, For Those Services Eithe
PX	C4	99341	HOME VISIT NEW PATIENT LOW SEVERITY 20 MINUTES
PX	C4	99342	HOME VISIT NEW PATIENT MOD SEVERITY 30 MINUTES
PX	C4	99343	HOME VST NEW PATIENT MOD-HI SEVERITY 45 MINUTES
PX	C4	99344	HOME VISIT NEW PATIENT HI SEVERITY 60 MINUTES
PX	C4	99345	HOME VISIT NEW PT UNSTABL/SIGNIF NEW PROB 75 MIN
PX	C4	99347	HOME VISIT EST PT SELF LIMITED/MINOR 15 MINUTES
PX	C4	99348	HOME VISIT EST PT LOW-MOD SEVERITY 25 MINUTES
PX	C4	99349	HOME VISIT EST PT MOD-HI SEVERITY 40 MINUTES
PX	C4	99350	HOME VST EST PT UNSTABLE/SIGNIF NEW PROB 60 MINS
PX	C4	99351	HOME VISIT E&M ESTAB PT STABLE/RECOVERING
PX	C4	99352	HOME VISIT E&M ESTAB PT MINOR COMPLIC
PX	C4	99353	HOME VISIT E&M ESTAB PT UNSTABLE/SIGNIF COMPLIC
PX	C4	99374	SUPVJ PT HOME HEALTH AGENCY MO 15-29 MINUTES
PX	C4	99375	SUPERVISION PT HOME HEALTH AGENCY MONTH 30 MIN/>
PX	C4	99376	PHYS SUPERVS PT-HOME HEALTH/HOSPICE; > 60 MIN
PX	C4	99500	HOME VISIT PRENATAL MONITORING & ASSESSMENT
PX	C4	99501	HOME VISIT POSTNATAL ASSMT&F-UP CARE
PX	C4	99502	HOME VISIT NEWBORN CARE & ASSESSMENT
PX	C4	99503	HOME VISIT RESPIRATORY THERAPY CARE
PX	C4	99504	HOME VISIT MECHANICAL VENTILATION CARE
PX	C4	99505	HOME VISIT STOMA CARE&MAINT CLST&CSTOST
PX	C4	99506	HOME VISIT INTRAMUSCULAR INJECTIONS
PX	C4	99507	HOME VISIT CARE&MAINT CATH

CodeCat	CodeType	Code	Description
PX	C4	99508	HOME VISIT FOR POLYSOMNOGRAPHY AND SLEEP STUDIES
PX	C4	99509	HOME VISIT ASSISTANCE DAILY LIV&PRSONAL CARE
PX	C4	99510	HOME VISIT INDIV FAM/MARRIAGE COUNSELING
PX	C4	99511	HOME VISIT FECAL IMPACTION MGMT&ENEMA ADMN
PX	C4	99512	HOME VISIT HEMODIALYSIS
PX	C4	99539	UNLISTED HOME VISIT SERVICE OR PROCEDURE
PX	C4	99551	HOME INFUSION PAIN MGMT IV/SUBQ PER VISIT
PX	C4	99552	HOME INFUSION PAIN MGMT EPIDURL/INTRATHEC VISIT
PX	C4	99553	HOME INFUSION FOR TOCOLYTIC THERAPY PER VISIT
PX	C4	99554	HOME INFUS HEMATOPOIETIC HORMONES/PLATLTS VISIT
PX	C4	99555	HOME INFUSION FOR CHEMOTHERAPY PER VISIT
PX	C4	99556	HOME INFUS ABXS/ANTIFUNGALS/ANTIVIRALS PER VISIT
PX	C4	99557	HOME INFUSION CONT ANTICOAGULANT TX PER VISIT
PX	C4	99558	HOME INFUSION OF IMMUNOTHERAPY PER VISIT
PX	C4	99559	HOME INFUSION OF PERITONEAL DIALYSIS PER VISIT
PX	C4	99560	HOME INFUSION OF ENTERAL NUTRITION PER VISIT
PX	C4	99561	HOME INFUSION OF HYDRATION THERAPY PER VISIT
PX	C4	99562	HOME INFUSION OF TPN PER VISIT
PX	C4	99563	HOME ADMIN AEROSOLIZED PENTAMIDINE PER VISIT
PX	C4	99564	HOME INFUSION ANTI-HEMOPHILIC AGENTS VISIT
PX	C4	99566	HOME INFUS UNINTRPED LONG-TERM IV TREATMNT VISIT
PX	C4	99567	HOME INFUSION SYMPATHOMIMETIC AGENTS PER VISIT
PX	C4	99568	HOME INFUSION OF MISCELLANEOUS DRUGS PER VISIT
PX	C4	99569	HOME INFUS EA ADD TX GIVEN SAME DAY PER VISIT
PX	C4	99600	UNLISTED HOME VISIT SERVICE/PROCEDURE
PX	C4	99601	HOME NFS/SPECTY DRUG ADMN PR VST </2 HR
PX	C4	99602	HOME NFS/SPECTY DRUG ADMN PR VST </2 HR EA HR
PX	HC	A4253	BLD GLU TEST/REAGT STRIPS HOME BLD GLU MON-50
PX	HC	A4870	PLUMBING &OR ELEC WORK HOME HEMODIAL EQUIPMENT
PX	HC	D9110	PALLIATIVE EMERGENCY TX DENTAL PAIN MINOR PROC
PX	HC	E0433	PORTABL LIQUID OXYGEN SYS RENTAL; HOME LIQUEFIER
PX	HC	G0151	SERVICE PHYS THERAP HOME HLTH/HOSPICE EA 15 MIN
PX	HC	G0152	SERVICE OCCUP THERAP HOME HLTH/HOSPICE EA 15 MIN
PX	HC	G0153	SRVC SPCH&LANG PATH HOME HLTH/HOSPICE EA 15 MIN
PX	HC	G0157	SERVICES PT ASSIST HOME HEALTH/HOSPICE EA 15 MIN
PX	HC	G0158	SERVICE OT ASSIST HOME HEALTH/HOSPICE EA 15 MIN
PX	HC	G0159	SERVICES PT HOME HEALTH EST/DEL PT MP EA 15 MINS
PX	HC	G0160	SERVICES OT HOME HEALTH EST/DEL OT MP EA 15 MINS
PX	HC	G0162	SKILLED SERVICE RN M&E PLAN OF CARE; EA 15 MINS
PX	HC	G0163	SKILLED SERVICE LPN/RN OBS & ASSESS PT EA 15 MIN
PX	HC	G0248	DEMO HOME INR MON PT W/MECH HT VALVE CAF/VTE
PX	HC	G0249	PRVS TEST MATL & EQUIP HOME INR MON; ONCE A WEEK
PX	HC	G0250	PHYS REV INTEPR & PT MGMT HOME INR MON; 1 A WEEK
PX	HC	G0299	DIRECT SNS RN HOME HEALTH/HOSPICE SET EA 15 MIN
PX	HC	G0300	DIRECT SNS LPN HOME HLTH/HOSPICE SET EA 15 MIN

CodeCat	CodeType	Code	Description
PX	HC	G0324	ESRD REL SERVICE HOME DIALYSIS PER DAY; PT <2 YR
PX	HC	G0325	ESRD REL SERV HOME DIALYSIS PER DAY; PT 2-11 YRS
PX	HC	G0326	ERSD REL SERV HOME DIALYSIS PER DAY; PT 12-19 YR
PX	HC	G0327	ESRD REL SERV HOME DIALYSIS PER DAY; PT 20 YR >
PX	HC	G0493	SKILLED SERVICES RN OBV & ASMT PT COND EA 15 MIN
PX	HC	G0494	SKILLED SRVC LPN OBS & ASMT PT COND EA 15 MIN
PX	HC	G9006	COORDINATED CARE FEE HOME MONITORING
PX	HC	G9054	ONC; PRIM FOCUS; SUP PT TERM CA; PALLIATIVE TX
PX	HC	G9187	BPCI HOME VISIT PT ASSESSMENT PRFRM QUAL HC PROF
PX	HC	G9481	REMOTE IN-HOME VISIT E/M NEW PATIENT 10 MINUTES
PX	HC	G9482	REMOTE IN-HOME VISIT E/M NEW PATIENT 20 MINUTES
PX	HC	G9483	REMOTE IN-HOME VISIT E/M NEW PATIENT 30 MINUTES
PX	HC	G9484	REMOTE IN-HOME VISIT E/M NEW PATIENT 45 MINUTES
PX	HC	G9485	REMOTE IN-HOME VISIT E/M NEW PATIENT 60 MINUTES
PX	HC	G9486	REMOTE IN-HOME VISIT E/M ESTABLISHED PT 10 MINS
PX	HC	G9487	REMOTE IN-HOME VISIT E/M ESTABLISHED PT 15 MINS
PX	HC	G9488	REMOTE IN-HOME VISIT E/M ESTABLISHED PT 25 MINS
PX	HC	G9489	REMOTE IN-HOME VISIT E/M ESTABLISHED PT 40 MINS
PX	HC	G9490	COMPREHENSIVE CARE JT REPL MODEL HOME VISIT;
PX	HC	G9747	PATIENT IS UNDERGOING PALLIATIVE DIALYSIS W/CATH
PX	HC	G9749	PATIENT IS UNDERGOING PALLIATIVE DIALYSIS W/CATH
PX	HC	H0045	RESPITE CARE SERVICES NOT IN THE HOME PER DIEM
PX	HC	K0738	PORTABLE GASEOUS O2 SYS RENTAL; HOME COMPRESSOR
PX	HC	Q2052	SERVICES SUPPLIES IN HOME MEDICARE IVIG DEM
PX	HC	Q5010	HOSPICE HOME CARE PROVIDED IN A HOSPICE FACILITY
PX	HC	S0270	PHYSICIAN MGT PT HOME CARE STD MONTHLY CASE RATE
PX	HC	S0271	PHYS MGT PT HOME CARE HOSPICE MONTHLY CASE RATE
PX	HC	S0272	PHYS MGT PT HOME CARE EPISODIC CARE MO CASE RATE
PX	HC	S0273	PHYS VST MEMBER HOME OUTSIDE CAPITATION ARRNGMNT
PX	HC	S0274	NP VST MEMBER HOME OUTSIDE CAPITATION ARRANGMENT
PX	HC	S0345	ECG MON HOME W/REC ANALY&PHYS REV&INTERP; 24 HR
PX	HC	S0346	ECG MON HOME W/REC TRANSMISSION & ANALY; 24 HR
PX	HC	S0347	ECG MON HOME W/PHYS REVIEW AND INTERP; 24-HOUR
PX	HC	S5035	HOME INFUS THERAPY ROUTINE SERVICE INFUS DEVICE
PX	HC	S5036	HOME INFUSION THERAPY REPAIR OF INFUSION DEVICE
PX	HC	S5108	HOME CARE TRAINING HOME CARE CLIENT PER 15 MIN
PX	HC	S5109	HOME CARE TRAINING HOME CARE CLIENT PER SESSION
PX	HC	S5110	HOME CARE TRAINING FAMILY; PER 15 MINUTES
PX	HC	S5111	HOME CARE TRAINING FAMILY; PER SESSION
PX	HC	S5115	HOME CARE TRAINING NON-FAMILY; PER 15 MINUTES
PX	HC	S5116	HOME CARE TRAINING NON-FAMILY; PER SESSION
PX	HC	S5165	HOME MODIFICATIONS; PER SERVICE
PX	HC	S5170	HOME DELIV MEALS INCLUDING PREPARATION; PER MEAL
PX	HC	S5180	HOME HEALTH RESPIRATORY THERAPY INIT EVALUATION
PX	HC	S5181	HOME HEALTH RESPIRATORY THERAPY NOS PER DIEM

CodeCat	CodeType	Code	Description
PX	HC	S5497	HOME INFUS TX CATH CARE/MAINT NOC; PER DIEM
PX	HC	S5498	HOME INFUS TX CATH CARE/MAINT SIMPLE PER DIEM
PX	HC	S5501	HOME INFUS TX CATH CARE/MAINT COMPLEX PER DIEM
PX	HC	S5502	HOME INFUS TX CATH CARE IMPL ACCESS DEVC DIEM
PX	HC	S5518	HOME INFUSION THERAPY ALL SPL NECES CATH REPAIR
PX	HC	S5520	HOME INFUSION TX ALL SPL NECES PICC LINE INSERT
PX	HC	S5521	HOME INFUS TX ALL SPL NECES MIDLINE CATH INSERT
PX	HC	S5522	HOME INFUS TX INSERT PICC NRS SRVC ONLY
PX	HC	S5523	HOME INFUS TX INSERT MIDLINE CVC NRS SRVC ONLY
PX	HC	S8415	SUPPLIES FOR HOME DELIVERY OF INFANT
PX	HC	S9001	HOME UTERINE MONITOR W/WO ASSOC NURSING SERVICES
PX	HC	S9061	HOME ADMIN AEROSOLIZED DRUG THERAPY PER DIEM
PX	HC	S9097	HOME VISIT FOR WOUND CARE
PX	HC	S9098	HOME VISIT PHOTOTHERAPY SERVICES PER DIEM
PX	HC	S9110	TELEMONITORING PT HOME ALL NEC EQUIP; PER MONTH
PX	HC	S9125	RESPITE CARE IN THE HOME PER DIEM
PX	HC	S9126	HOSPICE CARE IN THE HOME PER DIEM
PX	HC	S9127	SOCIAL WORK VISIT IN THE HOME PER DIEM
PX	HC	S9128	SPEECH THERAPY IN THE HOME PER DIEM
PX	HC	S9129	OCCUPATIONAL THERAPY IN THE HOME PER DIEM
PX	HC	S9131	PHYSICAL THERAPY; IN THE HOME PER DIEM
PX	HC	S9208	HOME MANAGEMENT OF PRETERM LABOR PER DIEM
PX	HC	S9209	HOME MGMT PRETERM PRMAT RUPTURE MEMBRANES DIEM
PX	HC	S9211	HOME MGMT GESTATIONAL HYPERTENSION; PER DIEM
PX	HC	S9212	HOME MANAGEMENT POSTPARTUM HYPERTENSION PER DIEM
PX	HC	S9213	HOME MANAGEMENT OF PREECLAMPSIA; PER DIEM
PX	HC	S9214	HOME MANAGEMENT OF GESTATIONAL DIABETES; DIEM
PX	HC	S9300	NRS SRV-HM ENTERAL FEEDING GRAVITY
PX	HC	S9329	HOME INFUSION TX CHEMOTHERAPY INFUSION; PER DIEM
PX	HC	S9336	HOME INFUS TX CONT ANTICOAGULANT INFUS TX DIEM
PX	HC	S9338	HIT IMMUOTHAPY; CARE COORDINATION PER DIEM
PX	HC	S9339	HOME THERAPY; PERITONEAL DIALYSIS PER DIEM
PX	HC	S9340	HOME THERAPY; ENTERAL NUTRITION; PER DIEM
PX	HC	S9341	HOME TX; ENTERAL NUTRITION VIA GRAVITY; PER DIEM
PX	HC	S9342	HOME TX; ENTERAL NUTRITION VIA PUMP; PER DIEM
PX	HC	S9343	HOME TX; ENTERAL NUTRITION VIA BOLUS; PER DIEM
PX	HC	S9345	HOME INFUSION TX ANTI-HEMOPHILIC AGENT; PER DIEM
PX	HC	S9346	HOME INFUS TX ALPHA-1-PROTEINASE INHIBITOR; DIEM
PX	HC	S9349	HOME INFUSION THERAPY TOCOLYTIC; PER DIEM
PX	HC	S9351	HOME INFUSION THERAPY CONT ANTI-EMETIC; PER DIEM
PX	HC	S9353	HOME INFUSION THERAPY CONT INSULIN; PER DIEM
PX	HC	S9355	HOME INFUSION THERAPY CHELATION; PER DIEM
PX	HC	S9357	HOME INFUSION TX ENZYME REPL IV TX; PER DIEM
PX	HC	S9361	HOME INFUSION THERAPY DIURETIC IV TX; PER DIEM
PX	HC	S9370	HOME THERAPY INTERMITTENT ANTI-EMETIC INJ TX;

CodeCat	CodeType	Code	Description
PX	HC	S9372	HOME THERAPY; INTERMITTENT ANTICOAGULANT INJ TX;
PX	HC	S9373	HOME INFUSION THERAPY HYDRATION TX; PER DIEM
PX	HC	S9374	HOME INFUSION THERAPY HYDRATION TX; 1 LITER DAY
PX	HC	S9377	HOME INFUS THERAPY HYDRATION TX; >3 LITERS DAY
PX	HC	S9379	HOME INFUSION THERAPY INFUSION THERAPY NOC; DIEM
PX	HC	S9524	NURSING SRVC RELATED HOME IV THERAPY PER DIEM
PX	HC	S9537	HOME TX HEMATOPOIETIC HORMONE INJ TX;PER DIEM
PX	HC	S9542	HOME INJ TX NOC W/CARE COORDINATION PER DIEM
PX	HC	S9543	ADMIN MED IM EPID/SUBQ HOME ALL NRS; PER DIEM
PX	HC	S9558	HIT GROWTH HORMONE W/CARE COORDINATION PER DIEM
PX	HC	S9559	HIT INTERFERON W/CARE COORDINATION PER DIEM
PX	HC	S9560	HOME INJECTABLE THERAPY; HORMONAL THERAPY DIEM
PX	HC	S9800	HOME THERAPY; PRVS INFUS HIGHLY TECH RN HOUR
PX	HC	S9802	HOME INFUS/SPCLTY RX ADMIN NRS; VISIT UP TO 2 HR
PX	HC	S9803	HOME INFUS/SPCLTY RX ADMIN NRS; EA ADD HOUR
PX	HC	S9810	HOME THERAPY; NOT OTHERWISE CLASSIFIED PER HOUR
PX	HC	T1021	HOME HEALTH AIDE/CERTIFIED NURSE ASST PER VISIT
PX	HC	T1022	CONTRACT HOME HEALTH SRVC UNDER CONTRACT DAY
PX	HC	T1028	ASSESSMENT HOME PHYSICAL & FAMILY ENVIRONMENT
PX	HC	T1030	NURSING CARE THE HOME REGISTERED NURSE PER DIEM
PX	HC	T1031	NURSING CARE IN THE HOME BY LPN PER DIEM
PX	HC	T2042	HOSPICE ROUTINE HOME CARE; PER DIEM
PX	HC	T2043	HOSPICE CONTINUOUS HOME CARE; PER HOUR
PX	RE	0023	Home health prospective payment system (HRG)
PX	RE	0185	Leave of Absence-Nursing Home (for Hospitalization)
PX	RE	0522	Freestanding Clinic-Home visit by RHC/FQHC Practitioner
PX	RE	0560	Home Health (HH)-Medical Social Services-General
PX	RE	0561	Home Health (HH)-Medical Social Services-Visit Charge
PX	RE	0562	Home Health (HH)-Medical Social Services-Hourly Charge
PX	RE	0569	Home Health (HH)-Medical Social Services-Other Medical Socia
PX	RE	056X	Category title: Home Health (HH)-Medical Social Services
PX	RE	0570	Home Health (HH) Aide-General
PX	RE	0571	Home Health (HH) Aide-Visit Charge
PX	RE	0572	Home Health (HH) Aide-Hourly Charge
PX	RE	0579	Home Health (HH) Aide-Other Home Health Aide
PX	RE	057X	Category title: Home Health (HH) Aide
PX	RE	0580	Home Health (HH)-Other Visits-General
PX	RE	0581	Home Health (HH)-Other Visits-Visit Charge
PX	RE	0582	Home Health (HH)-Other Visits-Hourly Charge
PX	RE	0583	Home Health (HH)-Other Visits-Assessment
PX	RE	0589	Home Health (HH)-Other Visits-Other Home Health Visits
PX	RE	058X	Category title: Home Health (HH)-Other Visits
PX	RE	0590	Home Health (HH) Units of Service-General
PX	RE	0600	Home Health (HH)-Oxygen-General
PX	RE	0601	Home Health (HH)-Oxygen-Stat Equip/Supply/Contents

CodeCat	CodeType	Code	Description
PX	RE	0602	Home Health (HH)-Oxygen-Stat Equip/Supply<1 LPM
PX	RE	0603	Home Health (HH)-Oxygen-Stat Equip/Supply>4 LPM
PX	RE	0604	Home Health (HH)-Oxygen-Oxygen Port Add-On
PX	RE	0609	Home Health (HH)-Oxygen-Oxygen-Other
PX	RE	0640	Home IV Therapy Services-General
PX	RE	0641	Home IV Therapy Services-Nonroutine Nursing, Central Line
PX	RE	0642	Home IV Therapy Services-IV Site Care, Central Line
PX	RE	0643	Home IV Therapy Services-IV Start/Change, Peripheral Line
PX	RE	0644	Home IV Therapy Services-Nonroutine Nursing, Peripheral Line
PX	RE	0645	Home IV Therapy Services-Training Patient/Caregiver, Central
PX	RE	0646	Home IV Therapy Services-Training, Disabled Patient, Central
PX	RE	0647	Home IV Therapy Services-Training, Patient/Caregiver, Periph
PX	RE	0648	Home IV Therapy Services-Training, Disabled Patient, Periphe
PX	RE	0649	Home IV Therapy Services-Other IV Therapy Services
PX	RE	064X	Category title: Home IV Therapy Services
PX	RE	0651	Hospice Service-Routine Home Care
PX	RE	0652	Hospice Service-Continuous Home Care
PX	RE	0820	Hemodialysis-Outpatient or Home-General
PX	RE	0821	Hemodialysis-Outpatient or Home-Hemodialysis Composite or Ot
PX	RE	0822	Hemodialysis-Outpatient or Home-Home Supplies
PX	RE	0823	Hemodialysis-Outpatient or Home-Home Equipment
PX	RE	0824	Hemodialysis-Outpatient or Home-Maintenance-100%
PX	RE	0825	Hemodialysis-Outpatient or Home-Support Services
PX	RE	0829	Hemodialysis-Outpatient or Home-Other OP Hemodialysis
PX	RE	082X	Category Title: Hemodialysis-Outpatient or Home
PX	RE	0830	Peritoneal Dialysis-Outpatient or Home-General
PX	RE	0831	Peritoneal Dialysis-Outpatient or Home-Peritoneal/Composite
PX	RE	0832	Peritoneal Dialysis-Outpatient or Home-Home Supplies
PX	RE	0833	Peritoneal Dialysis-Outpatient or Home-Home Equipment
PX	RE	0834	Peritoneal Dialysis-Outpatient or Home-Maintenance-100%
PX	RE	0835	Peritoneal Dialysis-Outpatient or Home-Support Services
PX	RE	0839	Peritoneal Dialysis-Outpatient or Home-Other Outpatient Peri
PX	RE	083X	Category Title: Peritoneal Dialysis-Outpatient or Home
PX	RE	0882	Miscellaneous Dialysis-Home Dialysis Aid Visit

XI. REFERENCES

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