Medicaid/CHIP Data Transformation to the Sentinel Common Data Model Version 8.2.0

Technical Specifications

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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 75F40119D10037.

History of Modifications

Version	Date	Modification	Author
1.0.0	06/10/2022	Original Version	Duke University Department of Population Health Sciences
1.1.0	12/16/2022	Addition of mother-infant linkage information	Duke University Department of Population Health Sciences
2.0.0	10/11/2023	Version for ETL2 and SCDM 8.1.0	Duke University Department of Population Health Science
2.1.0	11/05/2023	Removed linkages when infants matched to more than one delivery in the MIL table	Duke University Department of Population Health Science
3.0.0	08/22/2024	Version for ETL3 and SCDM 8.2.0	Duke University Department of Population Health Science

Note: All URLs in this document were last accessed as of the publication date listed on the title page.

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Abbreviations

Abbreviation	Description
ACA	Patient Protection and Affordable Care Act
APR	Annual Provider File
CAH	Critical Access Hospital
CHIP	Children's Health Insurance Program
CCW	Chronic Conditions Warehouse
CDC	Centers for Disease Control and Prevention
CMC	Comprehensive Managed Care
CMHC	Community Mental Health Center
CMS	Centers for Medicare and Medicaid Services
CY	Calendar Year
DE	Demographic and eligibility
DPHS	Duke University Department of Population Health Sciences
DQ	Data Quality (in the context of the DQ Atlas)
DUA	Data Use Agreement
ETL	Extract, transform, and load
FDA	Food and Drug Administration
FFS	Fee-for-service
HCUP	Healthcare Cost and Utilization Project
ICF	Intermediate Care Facility
ID	Identifier
IRF	Inpatient Rehabilitation Facility
IV	Intravenous
IP	Inpatient
LT	Long-term care
LTCH	Long-term Care Hospital
M-CHIP	Medicaid Expansion CHIP
MACBIS	Medicaid and CHIP Business Information Solution
MAX	Medicaid Analytic eXtract
MEC	Minimum Essential Coverage
MESF	Medicaid Enrollee Supplemental File
MIL	Mother-infant Linkage
MSIS	Medicaid Statistical Information System
MTF	Military Treatment Facility
N/A	Not applicable
NCHS	National Center for Health Statistics
NDI	National Death Index
NPI	National Provider Identifier
NPPES	National Plan and Provider Enumeration System
OT	Other services
RIF	Research Identifiable File
RX	Pharmacy
QA	Quality Assurance (in the context of the QA package)
S-CHIP	Separate CHIP
SCDM	Sentinel Common Data Model
SNF	Skilled Nursing Facility
SOC	Sentinel Operations Center
TAF	T-MSIS Analytic Files
USPHS	United States Public Health Service
USTF	Uniformed Service Treatment Facilities

Abbreviation	Description
T-MSIS	Transformed Medicaid Statistical Information System
VRDC	Virtual Research Data Center

This document uses the two-letter jurisdiction abbreviations recognized by the United States government. See https://secure.ssa.gov/poms.nsf/lnx/0901501010 for a complete list.

1. Background

1.1. Introduction

This document describes the specifications for implementing the Sentinel Common Data Model (SCDM) version 8.2.0 within the 100% Medicaid and Children's Health Insurance Program (CHIP) data housed in the Center for Medicare and Medicaid Services' (CMS) Virtual Research Data Center (VRDC). It describes the required extraction, transformation, and loading (ETL) processes and table and variable mappings specific to these data in this computing environment. It is applicable to Transformed Medicaid Statistical Information System (T-MSIS) Analytic Files Research Identifiable File (TAF RIF) source data from 2014 through 2021.

Based on existing Sentinel workflows, we describe this work in two phases. The Phase A ETL process involves the transformation of source data into the core tables of the Sentinel Common Data Model and the Phase B ETL process involves the linking of live deliveries to infants in the data, to create the Mother-Infant-Linkage (MIL) table.

This document consists of the following sections:

- **Overview**
  - **Medicaid/CHIP Source Data:** This section describes the content, structure, and update schedule of the TAF RIF data stored within the VRDC.
  - **VRDC Environment:** This section describes the VRDC computing environment as it relates to this ETL.
  - **Phase A ETL Specifications:** This section describes the types of information required before starting a new Phase A ETL and the supported programming models.
  - **Phase B ETL Specifications:** This section describes the types of information required before starting a new Phase B ETL process.

- **Mapping**
  - **Phase A ETL Workflow:** This section describes the steps involved in how Medicaid/CHIP source data are transformed into final SCDM production tables.
  - **Phase A ETL Source to Intermediate Tables:** This section describes the table-specific and field-specific mappings necessary to transform the Medicaid/CHIP data into intermediate tables.
  - **Phase A ETL Combined/Reconciled Tables:** This section describes combining and interleaving of yearly and claim-specific intermediate files into pre-finalized SCDM tables
  - **Phase A ETL Crosswalk Files:** This section describes the creation of source-to-numeric ID crosswalks used to finalize IDs in the SCDM tables.
  - **Phase A ETL Final Production Tables:** This section describes the process of combining intermediate tables to create the SCDM-compliant final tables that are used in production.
  - **Phase B ETL Workflow:** This section describes how live deliveries and children are linked in the mother-infant linkage (MIL) process.
  - **Phase B ETL Source to Final Table Mapping**: This section describes the field-specific mappings in the MIL table.
  - **Phase B ETL Final Production Table**: This section describes the process of finalizing the SCDM-compliant MIL table that is used in production.

Except as related to implementation within the Medicaid/CHIP data, this document does not otherwise discuss the rationale or content of the Sentinel Common Data Model, the latest

version of which is at https://www.sentinelinitiative.org/sentinel/data/distributed-database-common-data-model.

As guiding principles, the processes and programs created to accomplish the ETL should be flexible, extensible, and efficient. This includes attributes such as the ability to support different programming models (see Section 3.1.1), the ability to create intermediate tables that can be reused easily in a subsequent ETL, and the ability to easily add new Medicaid/CHIP file types into the process. Efficiency is achieved by using high-performance SAS® programming techniques such as leveraging existing variable sorts, generating multiple output tables from single passes through source data, using hash tables, and utilizing SAS® Grid parallel processing.

The target audience for this document is users who wish to create a SCDM v8.2.0-compliant database using Medicaid/CHIP data. While the resulting programs are specific to the processing of the Medicaid/CHIP data within the VRDC, we anticipate that the mapping information, specifically, will be of use to all users.

1.2. CMS Source Data

1.2.1. Medicaid/CHIP Source Data

1.2.1.1. Utilized Files

The Sentinel Medicaid/CHIP DataMart currently utilizes several Medicaid/CHIP data file types. The Demographic and Eligibility (DE) files contain beneficiary information—enrollment windows, demographics, and death information, where applicable. The Pharmacy (RX) files contain drug utilization information based on outpatient pharmacy drug dispensing events. Medical utilization information based on fee-for-service payment claims or managed care encounters for healthcare services delivered is contained in Inpatient (IP), Long-Term Care (LT), and Other Services (OT) claims files. There are other data sources available—including the Annual Provider (APR) and Annual Plan (APL) files—that may eventually be incorporated into the Medicaid/CHIP DataMart. Only Medicaid/CHIP program insurance claims for full-scope and comprehensive plan beneficiaries are currently included in the ETL. Additionally, data quality in the Medicaid/CHIP data differs by submitting jurisdiction, by year, and by plan, so a method for excluding jurisdiction/year/plans with problematic data is necessary.

Data documentation for the Medicaid/CHIP data housed within the VRDC is maintained by the Chronic Conditions Warehouse (CCW) at https://www.ccwdata.org/web/guest/data-dictionaries. The "Record Layout" spreadsheets available at this link list which variables appear in each dataset; and the PDF "Codebook" documents describe each field in detail, including valid value sets, when appropriate. For DE documentation, see the "T-MSIS Analytic File (TAF) Demographic and Eligibility" files. For RX and medical utilization claims documentation (IP, OT, & LT), see the "T-MSIS Analytic File (TAF) Claims" files.

1.2.1.2. File Maturity and Formats

CMS does not follow a consistent release schedule for the TAF RIFs, but has generally committed to the following plan: They will release a preliminary version of the TAF RIFs for each service year based on information submitted to CMS through June 30 of the following year, for a minimum data maturity of six months. Preliminary TAF RIFs are not considered fully mature for research purposes, since jurisdictions are still submitting T-MSIS data from that calendar year during the files' creation. Once the TAF RIF data for a service year are fully mature and include at least 12 months of runout, CMS will make an initial release of the TAF RIF data (Release 1). CMS may periodically release updates as the quality of submitted enrollment and claims data improves. For example, the 2014–2018 TAF RIF data currently

available in the VRDC have all been updated (as Release 2) from their initial release. The timing of prior and current TAF RIF releases is shown in the table below.

Table 1. Release schedule of the currently available 2014-2021 TAF RIF data

TAF RIF Year	Preliminary Release	Release 1	Release 2
2014	--	Nov-2019	Nov-2020
2015	--	Nov-2019	Nov-2020
2016	--	Nov-2019	Nov-2020
2017	--	Sep-2020	Sep-2021
2018	--	Sep-2020	Sep-2021
2019	Dec-2020	Sep-2021	--
2020	Nov-2021	Oct-2022	--
2021	Dec-2022	Dec-2023	

This ETL utilizes the Release 2 file versions for 2014 - 2018 and Release 1 file versions for 2019 - 2021.

The new data replace the old data in the VRDC once a new release of TAF RIF data is available. Currently the prior release is retained in a separate SAS® library for several months after it is replaced in the main SAS® library.

1.2.1.3. Known Data Issues

The 2021 TAF RIF data show a sharp increase in the number of BENE_IDs associated with three or more records in a yearly DEMOG_ELIG_BASE file among beneficiaries with a birth date in the last four months of 2021. According to CCW, this increase is "a known issue in the TAF RIF data due to an issue upstream of CCW, as the BENE_ID assignment algorithm utilizes multiple criteria from source data in order to determine whether a record is the same or a different person."

1.2.2. National Plan and Provider Enumeration System (NPPES) Data

Provider information included in the Sentinel Medicaid/CHIP DataMart will be derived from the NPPES data files. NPPES is the system that assigns and manages National Provider Identifiers (NPIs), which are unique 10-digit identification numbers issued to all Medicare and Medicaid/CHIP health care providers by CMS. The NPPES data file contains provider information disclosed by CMS including demographic, specialty, geographic, and organizational information for each provider. Providers' primary and secondary specialties are recorded in NPPES using Healthcare Provider Taxonomy Group codes. These taxonomy codes are structured, standardized 10-character alphanumeric codes for grouping and classifying various medical specialties. The code set is maintained and documented by the National Uniform Claim Committee. Only a subset of these taxonomy codes are included in the SCDM provider specialty reference tables.

The NPPES data are released as full replacement files monthly. They are available within the VRDC to those with permission to link the files to CMS data and are organized by month-year. For the Medicaid/CHIP DataMart, we will use the version released for the month corresponding to the last month of an ETL's date range.

For additional information about the NPPES data, see the following resources:

- NPPES: https://nppes.cms.hhs.gov
- NPI Registry: https://npiregistry.cms.hhs.gov
- Overview of the NPPES Downloadable File: https://resdac.org/articles/overview-nppesnpi-downloadable-file

- NPPES Data Dissemination: https://www.cms.gov/medicare/regulations-guidance/administrative-simplification/data-dissemination
- NPI/NPPES File Download: https://download.cms.gov/nppes/NPI_Files.html

1.2.3. 2020 T-MSIS BENE_ID Bridge File

Prior to the creation of the 2020 Release 1 (R1) TAF RIFs, updates were made to the Medicaid/CHIP beneficiary identifier logic. These updates impacted the BENE_ID assignment for the 2020 R1 TAF RIFs, resulting in the assignment of a new BENE_ID to some Medicaid/CHIP beneficiaries. This means that a beneficiary in the 2020 R1 TAFs may have a different CCW BENE_ID compared to their ID in prior versions of the TAF RIFs. As such, a 2020 T-MSIS BENE_ID bridge file must be applied in order to map 2020 R1 BENE_IDs to BENE_IDs in earlier years of TAF data.

The bridge file is an old-to-new BENE_ID crosswalk that contains almost five million records, which merges to about 5% of the records with a non-missing BENE_ID in the 2020 DEMOG_ELIG_BASE file. The file contains three variables: BENE_ID_2020 (BENE_ID as it appears in 2020 R1 TAF), BENE_ID_PRIOR (BENE_ID as it appeared in previous TAF releases), and STATE_CD (informational only, not necessary for merging).

No information is currently available regarding how or why the 2020 beneficiary identifier logic changed from previous years or whether this or additional BENE_ID bridge files will be necessary for future TAF releases. A T-MSIS BENE_ID Bridge File Fact Sheet is available to VRDC users on the CCW website at https://www2.ccwdata.org/documents/10280/19017693/t-msis-bridge-file-read-me-fact-sheet.pdf.

1.2.4. Unencrypted T-MSIS case number (MSIS_CASE_NUM) crosswalk

The MSIS_CASE_NUM crosswalk file is a point-in-time crosswalk that contains YEAR, STATE_CD, and encrypted and unencrypted T-MSIS case number variables. Specific to New Jersey, the original, unencrypted Medicaid case number submitted by the jurisdiction had an embedded logic, such that the last two digits of the number indicated a single person within a case/family. The actual case number for New Jersey families can thus be determined by removing these digits from the original value. Since the encrypted MSIS_CASE_NUM does not preserve this logic, deliveries are unable to be linked to infants for New Jersey without this crosswalk file.

1.2.5. Medicaid Enrollee Supplemental File (MESF): National Death Index (NDI) Segment

Death information included in the Sentinel Medicaid/CHIP DataMart is derived from the National Death Index (NDI)—a database of all U.S. deaths maintained by the National Center for Health Statistics (NCHS) in the Centers for Disease Control and Prevention (CDC), based on death certificates submitted by U.S. states and territories. The NDI is produced annually, 11 months following the end of the calendar year, and is then linked to the Medicaid Enrollee Supplemental File (MESF) to identify death records for Medicaid beneficiaries. The MESF NDI data are based on the NDI Final File, which is released only after the CDC and NCHS have collected and processed all death records from all US vital statistics offices for a given calendar year. MESF NDI data availability lags behind other CMS source data by 1-2 years.

The MESF NDI files include the date of death recorded on the death certificate. They also contain information about the underlying cause of death and also capture the cause(s) of death on the death certificate. Multiple causes of death are organized in two ways - “Entity Axis” and “Record Axis”. Entity Axis codes are prefixed with information about the placement

(line/position) of the ICD-10 code on the death certificate itself. Record Axis codes are produced by NCHS by processing the Entity Axis codes through a computer system that deletes duplication, links conditions, and adjudicates contradictions.

For additional information about the MESF NDI data, see the following links:

- NDI Overview: https://www.cdc.gov/nchs/ndi
- MESF NDI Data Documentation: https://resdac.org/cms-data/files/mesf-ndi/data-documentation
- NDI User Guide: https://www.cdc.gov/nchs/data/ndi/NDI_Users_Guide.pdf

1.3. VRDC Environment

The VRDC is a virtual computing environment that provides direct and secure access to Medicaid/CHIP program data. It is overseen by CMS and is currently administered by General Dynamics Information Technology (GDIT). The VRDC is an alternative to receiving Medicaid/CHIP data shipped via physical media and establishing a technical infrastructure for processing and analysis on-site. A basic overview of the VRDC and an FAQ are available from ResDAC here:

- VRDC Overview: https://www.resdac.org/cms-virtual-research-data-center-vrdc
- VRDC FAQ: https://resdac.org/virtual-research-data-center-vrdc-faqs
- VRDC Cloud FAQ: https://www2.ccwdata.org/web/guest/faq#cloud_environment

All TAF RIF source data files within the VRDC are stored as SAS® datasets, and our analysis of these data in the VRDC is done entirely using the SAS® Enterprise Guide® (EG) application. As part of the management of SAS EG by CMS, data libraries holding source data are already defined for users, and do not need to be re-defined within the ETL programs. The naming conventions for the relevant source data libraries are shown in Table 2.

Table 2. Naming conventions for pre-defined SAS® library names in the VRDC

SAS® LIBNAME*	Contents
TAFRyy	All TAF RIF files (DE, IP, LT, OT, RX) for calendar year
NPPESyy	NPPES files
MES	MESF files

**yy* indicates a year-specific library (e.g., 18 for 2018)

Table 3. Naming conventions for TAF RIF source files in the VRDC

Source File Category	Source File Type	Filename*
Demographic & eligibility (DE) files	Base	DEMOG_ELIG_BASE
Demographic & eligibility (DE) files	Enrollment dates	DEMOG_ELIG_DATES
Pharmacy (RX) claims	Header records	RX_HEADER_mm
Pharmacy (RX) claims	Line records	RX_LINE_mm
Inpatient (IP) claims	Header records	INPATIENT_HEADER_mm
Inpatient (IP) claims	Line records	INPATIENT_LINE_mm
Long-term care (LT) claims	Header records	LONG_TERM_HEADER_mm
Long-term care (LT) claims	Line records	LONG_TERM_LINE_mm
Other services (OT) claims	Header records	OTHER_SERVICES_HEADER_mm
Other services (OT) claims	Line records	OTHER_SERVICES_LINE_mm
T-MSIS BENE_ID Bridge File	Bridge files	TAFRIF_BENE_ID_BRIDGE_FILE

Source File Category	Source File Type	Filename*
National Plan and Provider Enumeration System files	NPPES files	NPPES_monyyyy
MESF National Death Index	NDI files	MES_NDI_yyyy

* *mm* indicates a month-specific file (e.g., 01 for January)

Drug and medical service utilization data are stored in the TAF RIFs as header and line files. Header records contain summary information related to a single claim. Line records include additional details related to specific, individual services billed for a claim. Header and line files are stored in monthly files within the yearly SAS® libraries and contain data for all jurisdictions that contributed T-MSIS data in that year.

All month numbers in file names are represented with 2 digits, using leading zeros, as needed. Putting the library name (Table 2) and file name information (Table 3) together is straightforward. As an example, the fully specified SAS® dataset name for IP header claim records from January 2016 is TAFR16.INPATIENT_HEADER_01.

CMS has provisioned the Sentinel program's VRDC user accounts with extra resources and privileges that are helpful for ETL programming. (These additional resources may not be available to other VRDC users.) Specifically:

- Sentinel users have extra random-access memory, which is useful for implementing hash objects to enable faster data merging on large datasets.
- Sentinel users may submit programs to run as batch jobs.
- Sentinel users have access to additional paid storage disk space, which provides sufficient overhead to store large ETL files. (All users may purchase additional disk space.)

In addition, the back-end computing infrastructure within the VRDC is a SAS® Grid Manager computing environment. This allows remote submission to different computer servers concurrently. This is a significant advantage for the Sentinel ETL process, as multiple months of utilization data can be transformed simultaneously.

2. ETL Overview

2.1. Data Quality Assessment and Consensus With SOC

Since T-MSIS data are generated and submitted by individual jurisdictions to CMS, data quality within the TAF RIF can vary by year within a jurisdiction or between fee-for-service (FFS) and comprehensive managed care (CMC) service use data within a jurisdiction/year. For this reason, data quality at the jurisdiction/year/plan level needs to be considered when deciding which data to include or exclude in the final Medicaid/CHIP ETL tables.

CMS conducts ongoing data quality assessments on the TAF RIF data to detect data quality differences across jurisdictions, years, and FFS vs. CMC plans. A collection of interactive Data Quality (DQ) Assessment maps and tables, along with several technical guidance documents, are provided by CMS in the DQ Atlas (https://www.medicaid.gov/dq-atlas/welcome). DQ Assessments summarize the data quality within the TAF RIF data for a specific topic by jurisdiction, year, plan, and TAF RIF release version. Since assessments are conducted for each release of a TAF RIF, each Medicaid/CHIP ETL will need to use the most current assessments; changes in the assessed data quality for a given jurisdiction/year/plan may impact the inclusion/exclusion of the corresponding TAF RIF data for each Medicaid/CHIP ETL iteration.

DQ Atlas topics used for excluding jurisdiction/year/plans are reviewed after each new release of annual TAF RIF data. DPHS and Sentinel Operations Center (SOC) agree on the DQ Atlas

topics to be used for excluding jurisdiction/year/plans in a given ETL before each new ETL process commences. DQ Atlas users should note that new data releases may include additional assessed topics or topics that are assessed with updated methods. For example, the DQ Atlas has suggested reconsidering the usage of the Number of Enrollment Spans metric since 2020: "DQ Assessments for this topic have been impacted by the suspension of renewals during the COVID-19 Public Health Emergency (PHE) in response to the Families First Coronavirus Response Act (FFRCA). Because the criteria used to assess this topic were developed before the PHE period, users should exercise caution when interpreting the DQ Assessments for data years during the PHE period (March 2020 through April 2023)." Information regarding updates to topic assessments or methodologies can be found at https://www.medicaid.gov/dq-atlas/landing/resources/whats-new.

2.2. Phase A ETL vs Phase B ETL

Building the Phase A ETL and Phase B ETL are separate, sequential processes. The Phase A ETL enables the transformation of Medicaid/CHIP RIFs into the core tables[1] of the SCDM. The Phase B ETL links live deliveries and children in the Mother-Infant Linkage (MIL) table. The Phase B ETL requires both the running of the Phase A ETL programming and the completion of the Phase A Quality Assurance (QA) package. References to "the ETL" or "this ETL" refer to the entire process, both Phase A and Phase B, unless otherwise noted.

3. Phase A ETL Process

3.1. Phase A ETL Specifications

DPHS and SOC agree on the contents and other details of a given Phase A ETL before each new Phase A ETL process commences. This includes, but is not limited to:

- Source data files to be utilized (e.g., IP, OT, LT, etc.)
- Source data file format (e.g., annual, preliminary)
- Date range covered (minimum date, maximum date), where the maximum date is dictated by the latest release of medical utilization claims data
- ETL build type (e.g., full rebuild, incremental build; as described in Section 3.1.1)
- DQ Atlas topics to be used for excluding jurisdiction/year/plans

These specifications are incorporated into the Phase A ETL programming through the use of a control file and not through hard-coding. In this context, a control file is a small text file, or similar, that includes relevant information about the current Phase A ETL process specifications in a single place. Other programs are written in such a way to utilize the information within the control file. By use of these control files, the core Phase A ETL programming logic is unchanged. For exclusions based upon the DQ Atlas, a separate table of jurisdiction/year/plans to be excluded is read-in by the Phase A ETL programming for performing these exclusions.

These Phase A ETL programs create source-specific/time-period-specific intermediate tables that are then combined to create final, SCDM-compliant production tables. For example, programs create:

- Annual ENCOUNTER, DIAGNOSIS, and PROCEDURE tables from each of the different medical utilization claims source files;
- Annual DEMOGRAPHIC and ENROLLMENT tables from the DE source files;
- Annual DEATH tables from DE and NDI source files;

[1] Core tables include ENROLLMENT, DEMOGRAPHIC, DISPENSING, ENCOUNTER, DIAGNOSIS, PROCEDURE, DEATH, CAUSE_OF_DEATH, FACILITY, and PROVIDER.

- Annual CAUSE_OF_DEATH tables from NDI source files; and
- Annual DISPENSING tables from the RX files.

This approach allows intermediate tables to be reused across ETLs as long as the underlying source data, mapping, and programming remain unchanged, from one ETL to another.

For all source file transformations, with one exception, Phase A ETL programs create intermediate tables that include only beneficiaries enrolled with full-scope or comprehensive Medicaid/CHIP benefits at any point within the same calendar year. See Table 4 (Mapping of Medicaid/CHIP DEMOGRAPHIC AND ENROLLMENT source files to SCDM ENROLLMENT tables) in Section 3.2.2, which describes implementation of this enrollment requirement. The exceptions are the SCDM DEATH and CAUSE_OF_DEATH tables. All deaths that occur in a calendar year are included in the intermediate forms of the DEATH and CAUSE_OF_DEATH tables, regardless of concurrent enrollment status. However, when the PatID crosswalk is applied at the final stage of producing the SCDM DEATH and CAUSE_OF_DEATH tables, any death records for individuals who are not included in the DEMOGRAPHIC table are purged because they do not contribute to the other SCDM tables.

3.1.1. Phase A ETL Programming Build Types

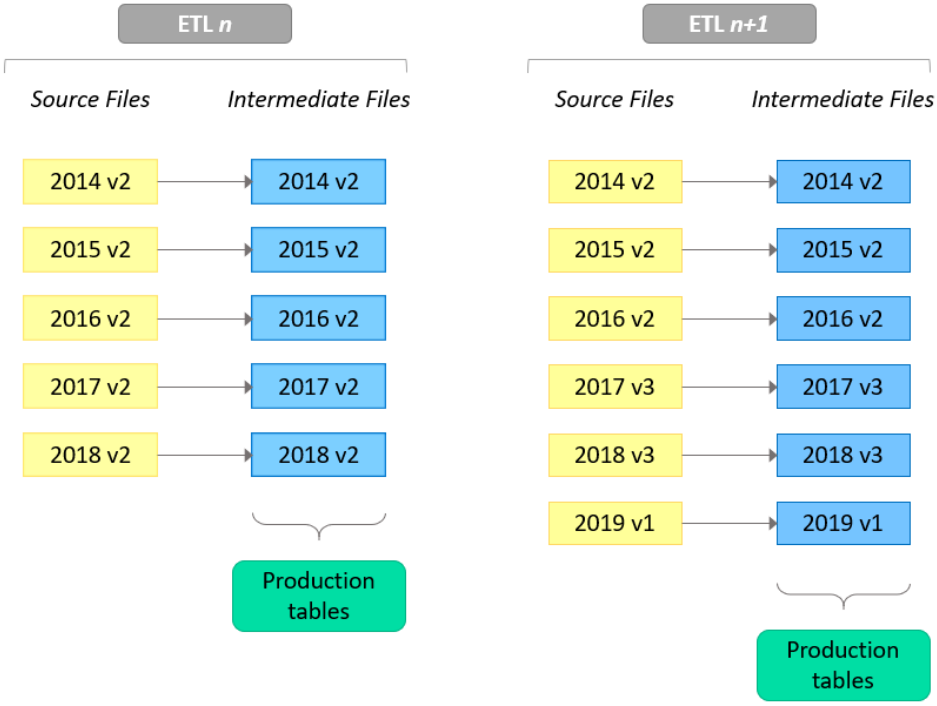
The Phase A ETL programs are designed to accommodate different ETL build types, retaining the capacity to use previously created intermediate tables or not, when generating production SCDM tables. These programs adapt to three different ETL build types, or programming models: (1) complete rebuild, (2) incremental build, and (3) hybrid build.

3.1.1.1. Complete Rebuild

A complete rebuild (Figure 1) occurs when new intermediate tables are generated from source data for all file types and time periods. This ETL build type does not use intermediate tables from a prior ETL. It is appropriate when there are programming logic and/or mapping changes that affect all or most of the source file transformations to SCDM tables. While older source data does not change, the data in the SCDM production tables based on these source data may show differences from the prior ETL as a result of the programming or mapping changes.

In this example of a complete rebuild, none of the current ETL's (ETL*n*) intermediate tables are reused by the new ETL (ETL*n+1*).

Figure 1. Schematic for ETL Build Type 1: Complete Rebuild



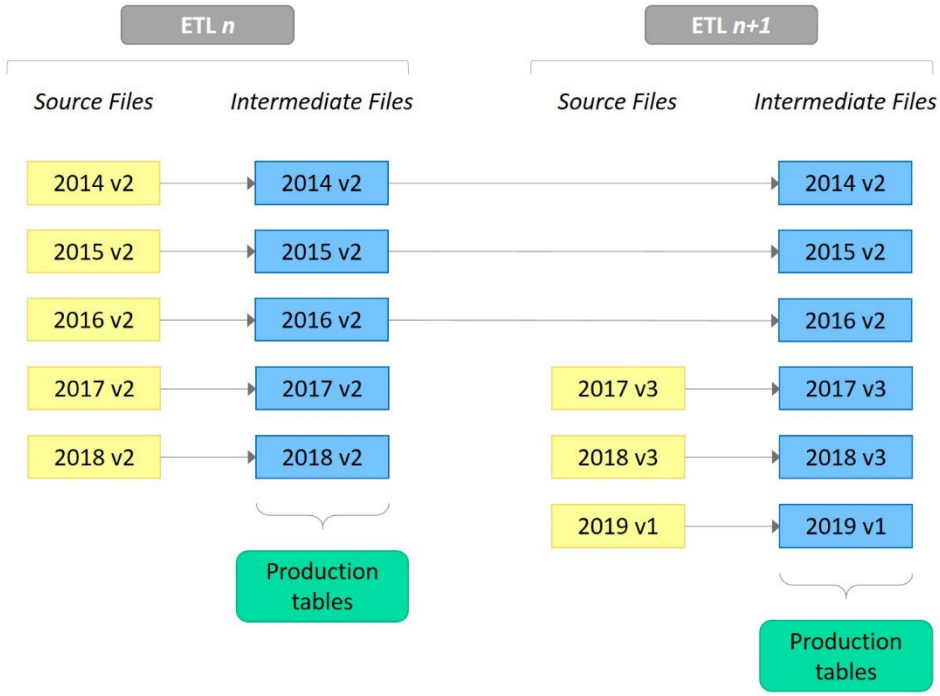
3.1.1.2. Incremental Build

An incremental build (Figure 2) occurs when intermediate tables from a completed ETL are reused for all source file types and time periods where the underlying data are static and new intermediate tables are generated from the source data for all file types and time periods from new or updated data.

An incremental build is appropriate when no programming and/or mapping changes have been made since the prior source file transformations. For this build type, data in the SCDM production tables based on the reused intermediate file cannot differ from the prior ETL, except in rare circumstances like long-term hospitalizations, where information from recent claims data supplements existing data for that encounter. This is the most common build type.

In this example of an incremental build, intermediate tables for static data periods from the current ETL*n* copied and reused in the development ETL*n+1*. Newly available or updated source data are transformed to generate new intermediate tables. Copied and newly-generated intermediate files are then combined to form the production tables. The programming specifications for ETL*n* and ETL*n+1* are the same.

Figure 2. Schematic for ETL Build Type 2: Incremental Build



3.1.1.3. Hybrid Build

A hybrid build (Figure 3) occurs when:

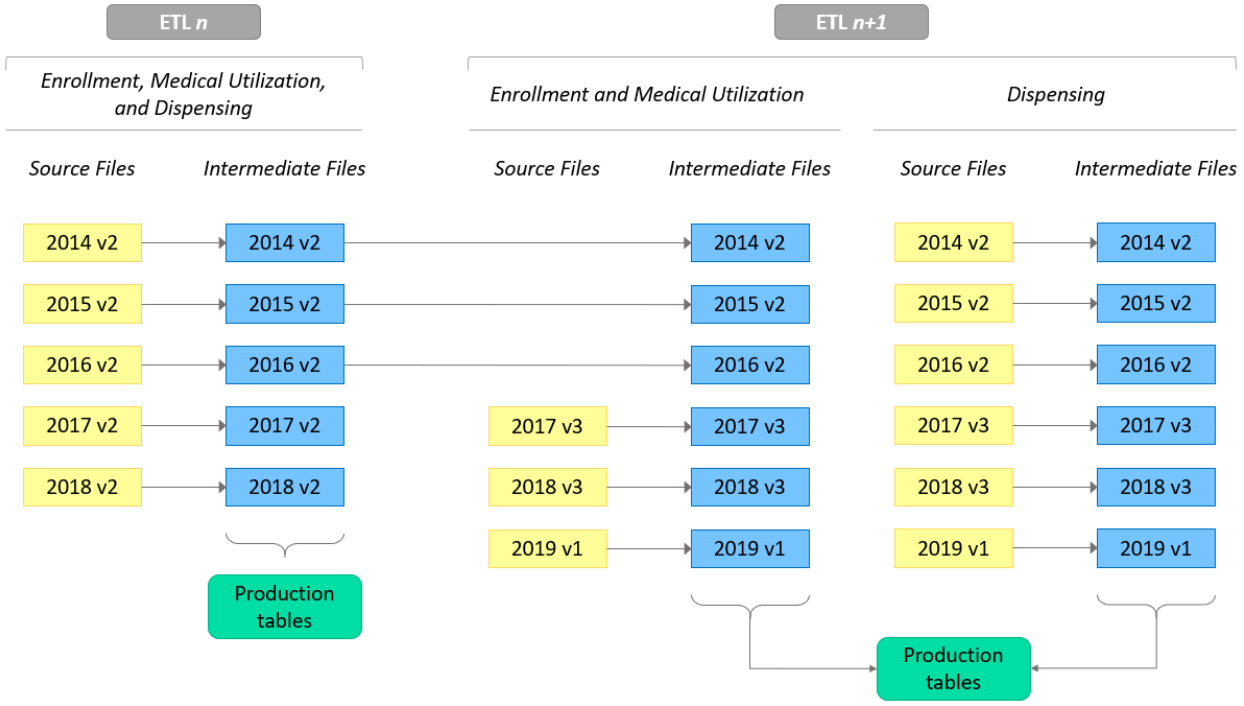
- New intermediate tables are generated from the source data for all file types and time periods that have new or refreshed data;
- Intermediate tables from a prior ETL are reused for *some* source file types and time periods with static underlying data; and
- New intermediate tables are generated from the source data for specific files types and/or time periods and/or destination tables, even though the underlying source data are static.

This build type is most appropriate when programming associated with specific source files in a prior ETL need to be changed to address a prior programming error, to improve the mapping for a specific field, or replace the data for a year with a newer release. With this build type, it is expected that some data in the new final SCDM production tables would differ from those of the prior ETL tables, even for older periods for which the source data is static. The magnitude of those changes may be small or large, depending on the programming changes that are made.

As with the other build types, certain files go through full ETL processing regardless of whether or not the source data has been updated since the prior ETL (See paragraph 2 in Section 3.1.1.2)

In this example of a hybrid build, dispensing source data are transformed anew, while other source files are processed as an incremental build.

Figure 3. Schematic for ETL Build Type 3: Hybrid Build

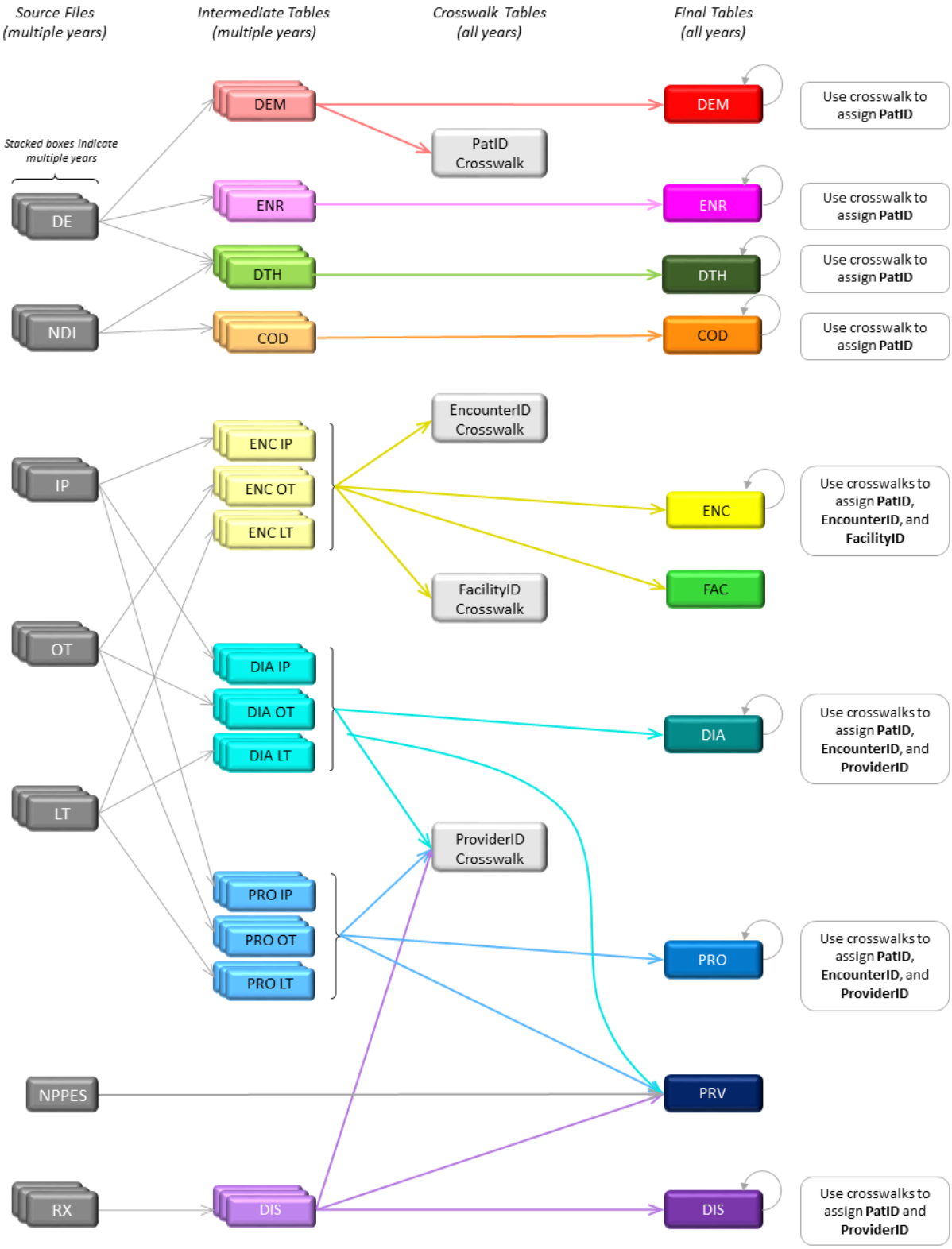


3.2. Phase A ETL Workflow and Source Data Mapping

3.2.1. Overview of Phase A ETL Workflow

Medicaid/CHIP source data are transformed into final SCDM production tables in several stages (see Figure 4). Each of these stages is described in more detail below. Section 3.2.2 describes the transformation of Medicaid/CHIP source files into source-specific, period-specific intermediate tables. Section 3.2.3 describes data fixes that are applied to intermediate data tables before combination and reconciliation. Section 3.2.4 describes the combination and reconciliation of these intermediate tables into single combined tables. Section 3.2.5 describes the creation of identifier crosswalk tables that link source identifiers with SCDM-compliant consecutive integer identifiers. Finally, Section 3.2.6 describes the finalization of the combined tables into SCDM-compliant production tables.

Figure 4. Conceptual diagram of data flow through the ETL process



3.2.2. Phase A ETL Source Data to Intermediate Tables Mapping

The mapping of source Medicaid/CHIP tables and fields to intermediate tables and fields is shown in the following series of tables. As a reminder, intermediate tables are source-specific/time-period-specific tables that are later combined to create the production SCDM tables. While most of the fields in the intermediate tables conform to the SCDM specifications, there are additional fields included that (a) assist with record reconciliation later in the process, (b) reference source records directly (for debugging), (c) are migrated to other tables later in the process, or (d) are used for internal quality control by jurisdiction. These fields are noted in the tables below. Source SAS® libraries and datasets listed in the following tables may include the year (*yy*) to indicate the period of time covered by the information therein.

Note about identifiers:

The identifier variables in the intermediate tables include raw Medicaid/CHIP identifiers either copied as-is or encoded using a reversible method that uses fewer bytes. This allows re-use of these intermediate tables from ETL to ETL, since the SCDM-compliant identifiers in the final tables do not retain a direct one-to-one link with source identifiers across ETLs. Section 3.2.5 describes the creation of the SCDM-compliant identifiers.

Table 4. Mapping of Medicaid/CHIP Demographic and Enrollment source files to intermediate annual ENROLLMENT tables

Source TAF Table(s)	TAFR*yy*.DEMOG_ELIG_BASE
Target intermediate table	ENROLLMENT_*yyyy*
SCDM table specifications	ENROLLMENT
Unique primary key	BENE_ID, MedCov, DrugCov, PlanType, Enr_Start, Enr_End
Sort order	BENE_ID, MedCov, DrugCov, PlanType, Enr_Start, Enr_End
Special instructions	Within any year, beneficiaries from specific jurisdictions (STATE_CD) or enrolled in a comprehensive managed care plan (MC_PLAN_TYPE_CD_*mm* = '01' [Comprehensive Managed Care Organization] or '04' [Health Insuring Organization]) within specific jurisdictions will be excluded because of poor data quality. The determination of which jurisdiction/year/plan combinations to exclude is to be determined prior to each Phase A ETL (see Section 2.1). Any BENE_ID with more than 3 records in a yearly DEMOG_ELIG_BASE file are excluded from the ETL. This exclusion increases confidence that each PatID represents a single beneficiary in the final SCDM tables. This exclusion also significantly decreases the number of infants identified by the Phase A QA package as eligible to be matched to deliveries in Sep-Dec 2021 (see Section 1.2.1.3).

Target Field	Source Field(s)	Applied Rules and Notes
BENE_ID	BENE_ID	Copy source
Enr_Start	DUAL_ELGBL_CD_mm RSTRCTD_BNFTS_CD_mm	First day of the first month (per *mm* in source fields) of an enrollment period where MedCov = Yes and DrugCov = Yes
Enr_End	DUAL_ELGBL_CD_mm RSTRCTD_BNFTS_CD_mm	Last day of the last month (per *mm* in source fields) of an enrollment period where MedCov = Yes and DrugCov = Yes

Target Field	Source Field(s)	Applied Rules and Notes
MedCov	DUAL_ELGBL_CD_mm RSTRCTD_BNFTS_CD_mm	Set to Yes (Y) if dual-eligible field indicates no Medicare enrollment (00) and restricted benefits field indicates full-scope (1) or comprehensive (7, A, D, 5 [2020+], 4 [2016+, except Arkansas, Idaho, and South Dakota]) Medicaid/CHIP benefits for the same month Otherwise, set to No (N) *Notes:* • *Full-scope and comprehensive benefits include both medical coverage and drug coverage. Beneficiaries with limited benefits are not included in the Phase A ETL.* • *Beneficiaries with Medicare coverage (dual-eligible beneficiaries) are not included in the Phase A ETL, as not all information about service utilization is expected in the TAF RIF files, since Medicare is the primary payer for their care.*
DrugCov	DUAL_ELGBL_CD_mm RSTRCTD_BNFTS_CD_mm	Same as MedCov
Chart	--	Hardcode to No (N)
PlanType	MC_PLAN_TYPE_CD_mm	Set to Managed Care (M) if managed care plan type is a Comprehensive Managed Care Organization (01) or Health Insuring Organization (04) Otherwise, set to Fee-For-Service (F) If both managed care and fee-for-service coverage is indicated in the same month, set to Other (O)
PayerType	--	Hardcode to “MD”
Fields that are eliminated or migrated to other tables later in the Phase A ETL process		
STATE_CD	STATE_CD	Copy source *Note: Field included for internal quality control by jurisdiction*

Table 5. Mapping of Medicaid/CHIP Demographic and Enrollment source files to intermediate annual DEMOGRAPHIC tables

Source TAF Table(s)	TAFR*yy*.DEMOG_ELIG_BASE
Target intermediate table	DEMOGRAPHIC_*yyyy*
SCDM table specifications	DEMOGRAPHIC
Unique primary key	BENE_ID
Sort order	BENE_ID
Special instructions	Beneficiaries with enrollment in multiple states have a DE record for each state. In these instances, the record with non-missing race/ethnicity (RACE_ETHNCTY_CD) data and latest month of enrollment information is used for populating the DEMOGRAPHIC table.

Target Field	Source Field(s)	Applied Rules and Notes
BENE_ID	BENE_ID	Copy source
Birth_Date	BIRTH_DT	Copy source
Sex	SEX_CD	Set Female (F) to Female (F) Set Male (M) to Male (M) Set Null to Unknown (U)
Hispanic	RACE_ETHNCTY_CD	Set Hispanic (7) to Yes (Y) Set Null to Unknown (U) Otherwise, for all other known race values; i.e., White (1), Black (2), Asian (3), American Indian and Alaska Native (4), Hawaiian/Pacific Islander (5), Multiracial (6), and Other, non-Hispanic (8) set to No (N)
Race	RACE_ETHNCTY_CD	Set American Indian and Alaska Native (4) to American Indian or Alaska Native (1) Set Asian (3) to Asian (2) Set Black (2) to Black or African American (3) Set Hawaiian/Pacific Islander (5) to Native Hawaiian or Other Pacific Islander (4) Set White (1) to White (5) Set Multiracial (6) to Multi-racial (M) Set Hispanic (7), Other, non-Hispanic (8), and Null to Unknown (0)

Target Field	Source Field(s)	Applied Rules and Notes
PostalCode	BENE_ZIP_CD	First five digits of source If 0000, 00000, 99999, or missing, *see Table 23. Field-specific mapping of STATE_CD [Medicaid/CHIP] to PostalCode [SCDM]* *Note: Ensuring all records have a ZIP code enables users of the final SCDM tables to identify records by jurisdiction, given appropriate ZIP code ranges.*
ImputedRace	--	Hardcode to missing
ImputedHispanic	--	Hardcode to missing
Fields that are eliminated or migrated to other tables later in the Phase A ETL process		
Year	--	Four-digit year of the DE file, for prioritizing most recent data and for PostalCode_Date *Note: The SCDM field PostalCode_Date is assigned using this value later in the Phase A ETL process (see Table 23). PostalCode_Date is hardcoded to 31-Dec-yyyy of the earliest year that the patient has had the same ZIP code continuously that they have at the end of the Phase A ETL data period. ZIP code in the DE file reflects the location of the beneficiary as of the end of the period covered by that DE file.*
STATE_CD	STATE_CD	Copy source *Note: Field included for internal quality control by jurisdiction. These codes are two-letter postal abbreviations and not necessarily just for states.*

Table 6. Mapping of Medicaid/CHIP Demographic and Enrollment source files to intermediate annual DEATH tables

Source TAF Table(s)	TAFR*yy*.DEMOG_ELIG_BASE MES.MES_NDI_*yyyy*
Target intermediate table	DEATH_*yyyy*
SCDM table specifications	DEATH
Unique primary key	BENE_ID
Sort order	BENE_ID
Special Instructions	Beneficiaries with a death date prior to birth date are excluded from the ETL.

Target Field	Source Field(s)	Applied Rules and Notes
BENE_ID	BENE_ID	Copy source
DeathDt	NDI_DOD (NDI) DEATH_DT (DE)	Set to NDI_DOD, if NDI data are available Else set to DEATH_DT
DtImpute	--	Hardcode to Not imputed (N)
Source	--	Set to National Death Registry (N), if NDI data are available Else set to Other, locally defined (L)
Confidence	--	Set to Excellent (E), if NDI data are available Else set to Poor (P) *Note: Due to the nature of state-submitted TAF data, we do not have any information regarding the reliability of death date or which jurisdictions may be better/worse with death ascertainment. SCDM documentation states that confidence should be set to "P = Poor" when uncertain.*
Fields that are eliminated or migrated to other tables later in the Phase A ETL process		
Year	--	Four-digit year of NDI/DE files, for prioritizing most recent data *Note: This field is used when the intermediate DEATH tables are combined later in the Phase A ETL process. In the rare cases where there are differences in the DeathDt reported in NDI/DE files from different years, the information from the most recent file is used.*
STATE_CD	STATE_CD	Copy source *Note: Field included for internal quality control by jurisdiction. These codes are two-letter postal abbreviations and not necessarily just for states.*

Table 7. Mapping of Medicaid/CHIP Demographic and Enrollment source files to intermediate annual CAUSE OF DEATH tables

Source TAF table(s)	MES.MES_NDI_*yyyy*
Target intermediate table	COD_*yyyy*
SCDM table specifications	CAUSE_OF_DEATH
Unique primary key	BENE_ID, CodeType, COD, Source
Sort order	BENE_ID
Special Instructions	Each distinct COD code on a source record generates a row in the intermediate DEATH table, excluding the recoded COD variables (ICD_CODE_113, ICD_CODE_130, and ICD_CODE_358). Only one COD record may be labeled as the "Underlying" cause-of-death. Rules for categorizing CauseType are based on prior work by Sentinel/FDA in the publication "Enhancing Data Resources for Studying Patterns and Correlates of Mortality in Patient-Centered Outcomes Research: Pilot Linkage of National Death Index+ to Commercially and Publicly insured Populations".

Target Field	Source Field(s)	Applied Rules and Notes
BENE_ID	BENE_ID	Copy source
COD	ICD_CODE ENTITY_COND_nn (1-20) RECORD_COND_nn (1-20)	ICD_CODE: Copy source ENTITY_COND: Extract ICD-10 code from positions 3-6 of string. RECORD_COND: Extract ICD-10 code from positions 1-4 of string.
CodeType	-	Hardcode to "10" for ICD-10
CauseType	ICD_CODE ENTITY_COND_nn (1-20) RECORD_COND_nn (1-20)	If COD is from ICD_CODE, set to "U" for Underlying If COD is from ENTITY_COND_nn and position 1 in string = "1", set to Immediate (I) If COD is from ENTITY_COND_nn and position 1 in string = "6", set to Contributory (C) If COD is from ENTITY_COND_nn and position 1 in string in ("2", "3", "4", "5"), set to "O" for Other. If COD is from RECORD_COND_nn, set to "O" for Other. If a COD code appears in more than one of the source fields/positions, set the CauseType in the following priority order: 1) Underlying (U), 2) Immediate (I), 3) Contributory (C), and 4) Other (O). See "Priority" row below.

Target Field	Source Field(s)	Applied Rules and Notes
Source	-	Hardcode to “N” for National Death Registry
Confidence	-	Hardcode to “E” for Excellent
Fields that are eliminated or migrated to other tables later in the Phase A ETL process		
Year	--	Four-digit year of MESF NDI file, for prioritizing most recent data *Note: This field is used when the intermediate DEATH tables are combined later in the Phase A ETL process. In the rare cases where there are differences in the COD reported in MESF NDI files from different years, the information from the most recent file is used.*
STATE_CD	STATE_CD	Copy source *Note: Field included for internal quality control by jurisdiction. These codes are two-letter postal abbreviations and not necessarily just for states.*
Priority	-	Priority score for de-duplicating COD codes if they appear in more than one source field/position, with the following priority order: 1) Underlying (U), 2) Immediate (I), 3) Contributory (C), and 4) Other (O)

Table 8. Mapping of Medicaid/CHIP Pharmacy dispensing source files to intermediate annual DISPENSING tables

Source TAF table(s)	TAFR*yy*.RX_HEADER_*mm* TAFR*yy*.RX_LINE_*mm*
Target intermediate table	DISPENSING_*yyyy*
SCDM table specifications	DISPENSING
Unique primary key	BENE_ID, RxDate, Rx_CodeType, Rx, SRC_ProviderID
Sort order	BENE_ID, RxDate
Special instructions	If multiple records reflect same-day dispensing of the same NDC to the same patient, we combine the days supply and dispensed amounts, by summing the values, into only 1 record. If the days supply or dispensed amount values are less than or equal to zero, the dispensing record is excluded from the ETL. If NDC contains any non-digits or has a length other than 9, 10, or 11, the dispensing record is excluded from the ETL.

Target Field	Source Field(s)	Applied Rules and Notes
BENE_ID	BENE_ID	Copy source
SRC_ProviderID	PRSCRBNG_PRVDR_NPI	Result of encoding non-missing source field
RxDate	RX_FILL_DT	Copy source
Rx	NDC	Copy source
Rx_CodeType	--	Hardcode to “ND” (for National Drug Code)
RxSup	DAYS_SUPPLY	Copy source
RxAmt	NDC_QTY	Copy source
Fields that are eliminated or migrated to other tables later in the Phase A ETL process		
STATE_CD	STATE_CD	Copy source *Note: Field included for internal quality control by jurisdiction. These codes are two-letter postal abbreviations and not necessarily just for states.*

Table 9. Mapping of Medicaid/CHIP Inpatient source files to intermediate annual ENCOUNTER tables

Source TAF Table(s)	TAFR*yy*.INPATIENT_HEADER_*mm* TAFR*yy*.INPATIENT_LINE_*mm*
Target intermediate table	ENC_IP_*suffix*
SCDM table specifications	ENCOUNTER
Unique primary key	BENE_ID, SRC_EncounterID
Sort order	BENE_ID, SRC_EncounterID
Special Instructions	Sometimes separate claims records in the IP data actually represent a single, continuous encounter. Continuous stays across separate claims are determined where... 1. Encounter type and facility ID are the same between claim #1 and claim #2 2. Admission date of claim #2 is any day before, the day of, or the day after the discharge date of claim #1 3. Discharge disposition of claim with older discharge date is "still in facility" The logic for determining continuous stays is based upon the CMS technical guidance document found at https://requests.resdac.org/sites/resdac.umn.edu/files/5011_Identifying_IP_Stays.pdf Nebraska claims in the IP source data often have admission dates that are incorrectly set to the claim adjudication/paid date, not the actual date the patient was admitted. Using the Claim Line Beginning/End Date of Service information from the line file, rather than the Admission/Discharge Date variables on the header file, allow us to confidently populate ADate and DDate for this jurisdiction.

Target Field	Source Field(s)	Applied Rules and Notes
BENE_ID	BENE_ID	Copy source
SRC_EncounterID	--	A string created by concatenating encoded versions of BENE_ID, ADATE, ENCTYPE, SRC_FACILITYID.
ADate	ADMSN_DT SRVC_END_DT LINE_SRVC_BGN_DT	If Nebraska claim, set as earliest available LINE_SRVC_BGN_DT across all lines for CLM_ID. Else if the first three digits of BILL_TYPE_CD are 013 or 014, set as SRVC_END_DT. Otherwise, set as ADMSN_DT.

Target Field	Source Field(s)	Applied Rules and Notes
DDate	DSCHRG_DT SRVC_END_DT LINE_SRVC_END_DT	If Nebraska claim, set as latest available LINE_SRVC_END_DT across all lines for CLM_ID. Otherwise, set as DSCHRG_DT; if missing, set as SRVC_END_DT. If EncType (below) is Ambulatory Visit (AV), hardcode to missing.
EncType	BILL_TYPE_CD	If the first three digits of BILL_TYPE_CD are 013 or 014, set to Emergency Department (ED) if revenue center code indicates Emergency Department utilization (0450, 0451, 0452, 0459, 0981—*see Table 28 for a full list of revenue center codes*). Else if the first three digits of BILL_TYPE_CD are 013 or 014 without ED utilization, set to Ambulatory Visit (AV) Else if facility type value (i.e. second digit of BILL_TYPE_CD) is Hospital (1) or missing, set to Inpatient Hospital Stay (IP). Otherwise, set to Non-Acute Institutional Stay (IS). This includes rehabilitation hospitals, psychiatric hospitals, and long-term care hospitals (LTCHs)
SRC_FacilityID	BLG_PRVDR_NPI	Result of encoding non-missing source field Set to blank/null if source field is missing
Discharge_Disposition	PTNT_DSCHRG_STUS_CD	*See Table 24. Field-specific mapping of PTNT_DSCHRG_STUS_CD [Medicaid/CHIP] to Discharge_Disposition [SCDM]* If Discharge_Disposition is Expired (E) but not the last known encounter for a patient, Discharge_Disposition set to Alive (A) If EncType (above) is Ambulatory Visit (AV), hardcode to missing
Discharge_Status	PTNT_DSCHRG_STUS_CD	*See Table 25. Field-specific mapping of PTNT_DSCHRG_STUS_CD [Medicaid/CHIP] to Discharge_Status [SCDM]* If Discharge_Disposition is Expired (E) but not the last known encounter for a patient, Discharge_Status set to Other (OT) If EncType (above) is Ambulatory Visit (AV), hardcode to missing
DRG	DRG_CD	Copy source If DRG_CD is length 3 and DRG code system is CMS grouper (i.e. HGxx, where xx is DRG version), set to DRG_CD. If EncType (above) is Ambulatory Visit (AV), hardcode to missing Otherwise, set to blank/null

Target Field	Source Field(s)	Applied Rules and Notes
DRG_Type	DRG_CD_SYS	If DRG_CD is length 3 and DRG code system is CMS grouper (i.e. HGxx, where xx is DRG version), set to MS-DRG (2). If EncType (above) is Ambulatory Visit (AV), hardcode to missing Otherwise, set to blank/null *Note: Jurisdictions can have their own grouping algorithms for assigned DRGs. If they are using the CMS grouper, this value will have "HG" as the first 2 characters.*
Admitting_Source	REV_CNTR_CD	Set to Emergency Department (ED) if revenue center code indicates Emergency Department utilization (0450, 0451, 0452, 0459, 0981—*see Table 28 for revenue center code descriptions*). If EncType (above) is Emergency Department (ED), hardcode to Unknown (UN) If EncType (above) is Ambulatory Visit (AV), hardcode to missing Otherwise, set to Unknown (UN)
Fields that are eliminated or migrated to other tables later in the Phase A ETL process		
CLM_ID	CLM_ID	Copy source *Note: Field included to allow convenient linkage back to source*
STATE_CD	STATE_CD	Copy source *Note: Field included for internal quality control by jurisdiction. These codes are two-letter postal abbreviations and not necessarily just for states.*
Priority	--	Hardcode to 1 *Note: Used when combining and reconciling claims related to the same encounter from different sources*

Table 10. Mapping of Medicaid/CHIP Long Term Care source files to intermediate annual ENCOUNTER tables

Source TAF Table(s)	TAFR*yy*.LONG_TERM_HEADER_*mm* TAFR*yy*.LONG_TERM_LINE_*mm*
Target intermediate table	ENC_LT_*suffix*
SCDM table specifications	ENCOUNTER
Unique primary key	BENE_ID, SRC_EncounterID
Sort order	BENE_ID, SRC_EncounterID
Special instructions	Sometimes separate claims records in the LT data actually represent a single, continuous encounter. *See special instructions in Table 8.*

Target Field	Source Field(s)	Applied Rules and Notes
BENE_ID	BENE_ID	Copy source
SRC_EncounterID	--	A string created by concatenating encoded versions of BENE_ID, ADATE, ENCTYPE, SRC_FACILITYID.
ADate	ADMSN_DT	Copy source
DDate	DSCHRG_DT SRVC_END_DT	Set as DSCHRG_DT; if missing, set as SRVC_END_DT If EncType (below) is Ambulatory Visit (AV), hardcode to missing
EncType	BILL_TYPE_CD	If the first three digits of BILL_TYPE_CD are 013 or 014, set to Ambulatory Visit (AV) Otherwise, hardcode to Non-Acute Institutional Stay (IS)
SRC_FacilityID	BLG_PRVDR_NPI	Result of encoding non-missing source field Set to blank/null if source field is missing
Discharge_Disposition	PTNT_DSCHRG_STUS_CD	*See Table 24. Field-specific mapping of PTNT_DSCHRG_STUS_CD [Medicaid/CHIP] to Discharge_Disposition [SCDM]* If Discharge_Disposition is Expired (E) but not the last known encounter for a patient, Discharge_Disposition set to Alive (A) If EncType (above) is Ambulatory Visit (AV), hardcode to missing
Discharge_Status	PTNT_DSCHRG_STUS_CD	*See Table 25. Field-specific mapping of PTNT_DSCHRG_STUS_CD [Medicaid/CHIP] to Discharge_Status [SCDM]* If Discharge_Disposition is Expired (E) but not the last known encounter for a patient, Discharge_Status set to Other (OT) If EncType (above) is Ambulatory Visit (AV), hardcode to missing
DRG	--	Set to blank/null

Target Field	Source Field(s)	Applied Rules and Notes
DRG_Type	--	Set to blank/null
Admitting_Source	--	If EncType (above) is Ambulatory Visit (AV), hardcode to missing Otherwise, hardcode to Unknown (UN)
Fields that are eliminated or migrated to other tables later in the Phase A ETL process		
CLM_ID	CLM_ID	Copy source *Note: Field included to allow convenient linkage back to source*
STATE_CD	STATE_CD	Copy source *Note: Field included for internal quality control by jurisdiction. These codes are two-letter postal abbreviations and not necessarily just for states.*
Priority	--	Hardcode to 1 *Note: Used when combining and reconciling claims related to the same encounter from different file types*

Table 11. Mapping of Medicaid/CHIP Other Services source files to intermediate annual ENCOUNTER tables

Source TAF Table(s)	TAFR*yyyy*.OTHER_SERVICES_HEADER_*mm* TAFR*yyyy*.OTHER_SERVICES_LINE_*mm*
Target intermediate table	ENC_OT_*suffix*
SCDM table specifications	ENCOUNTER
Unique primary key	BENE_ID, SRC_EncounterID
Sort order	BENE_ID, SRC_EncounterID

Target Field	Source Field(s)	Applied Rules and Notes
BENE_ID	BENE_ID	Copy source
SRC_EncounterID	--	A string created by concatenating encoded versions of BENE_ID, ADATE, ENCTYPE, SRC_PROVIDERID.
ADate	SRVC_BGN_DT LINE_SRVC_BGN_DT	Copy source For ED encounters, set as SRVC_BGN_DT from header file For other OT encounters, set for each line. If missing/out-of-range, set as SRVC_BGN_DT from header file
DDate	SRVC_END_DT	If EncType (below) is Emergency Department (ED), copy source *(subject to special case described below)* Otherwise, set to blank/null *Special case: If EncType is Emergency Department (ED) and source value for DISCHARGE_STATUS (below) corresponds with the "SH" (Still in facility) SCDM category, then set DDATE to ".S" special missing in the intermediate table. However, the special missing ".S" value is converted to a standard missing (blank/null) in the final SCDM tables later in the process if a discharge date still cannot be affirmatively determined after combining and reconciling the intermediate tables.*

Target Field	Source Field(s)	Applied Rules and Notes
EncType	REV_CNTR_CD POS_CD BILL_TYPE_CD	If Illinois claim (all years) or Georgia or Louisiana claim (only 2016), set to Emergency Department (ED) if CPT evaluation and management code indicates Emergency Department utilization (99281, 99282, 99283, 99284, 99285) Else set to Emergency Department (ED) if revenue center code indicates Emergency Department utilization (0450, 0451, 0452, 0459, 0981—*see Table 28 for a full list of revenue center codes).* If POS_CD is not missing, use place of service values. *See Table 26. Field-specific mapping of POS_CD [Medicaid/CHIP] to EncType [SCDM]* Otherwise, use facility type values (i.e. second digit of BILL_TYPE_CD). *See Table 27. Field-specific mapping of BILL_TYPE_CD [Medicaid/CHIP] to EncType [SCDM]* Set to Other Ambulatory Visit (OA) if BILL_TYPE_CD is missing
SRC_FacilityID	BLG_PRVDR_NPI	Result of encoding source field. Set to blank/null if source field is missing
Discharge_Disposition	--	Set to blank/null
Discharge_Status	--	Set to blank/null
DRG	--	Set to blank/null
DRG_Type	--	Set to blank/null
Admitting_Source	--	Set to blank/null
Fields that are eliminated or migrated to other tables later in the Phase A ETL process		
CLM_ID	CLM_ID	Copy source Note: Field included to allow convenient linkage back to source
STATE_CD	STATE_CD	Copy source *Note: Field included for internal quality control by jurisdiction. These codes are two-letter postal abbreviations and not necessarily just for states.*
Priority	--	Hardcode to 1 *Note: Used when combining and reconciling claims related to the same encounter from different sources*

Table 12. Mapping of Medicaid/CHIP Inpatient source files to intermediate annual DIAGNOSIS tables

Source TAF Table(s)	TAFR*yy*.INPATIENT_HEADER_*mm* TAFR*yy*.INPATIENT_LINE_*mm*
Target intermediate table	DX_IP_*suffix*
SCDM table specifications	DIAGNOSIS
Unique primary key	BENE_ID, SRC_EncounterID, Dx, Dx_Codetype, SRC_ProviderID
Sort order	BENE_ID, SRC_EncounterID, Dx, Dx_Codetype, SRC_ProviderID

Target Field	Source Field(s)	Applied Rules and Notes
BENE_ID	BENE_ID	Copy source
SRC_EncounterID	--	A string created by concatenating encoded versions of BENE_ID, ADATE, ENCTYPE, SRC_FACILITYID.
ADate	ADMSN_DT SRVC_END_DT LINE_SRVC_BGN_DT	If Nebraska claim, set as earliest available LINE_SRVC_BGN_DT across all lines for CLM_ID. Else if the first three digits of BILL_TYPE_CD are 013 or 014, set as SRVC_END_DT. Otherwise, set as ADMSN_DT.
SRC_ProviderID	ADMTG_PRVDR_NPI SRVC_PRVDR_NPI OPRTG_PRVDR_NPI	Result of encoding first non-missing source field. The source field list at left is processed from top to bottom. Set to blank/null if all source fields are missing
EncType	BLG_PRVDR_TYPE_CD	If provider is a hospital (42), set to Inpatient Hospital Stay (IP). Otherwise, set to Non-Acute Institutional Stay (IS). This includes rehabilitation hospitals, psychiatric hospitals, and LTCH
Dx	DGNS_CD_*nn (1-12)* ADMTG_ DGNS_CD	Remove any spaces or punctuation then copy and uppercase source, when not missing *Note: Length set to 7, which is sufficient for ICD-9-CM and ICD-10-CM diagnosis codes.*

Target Field	Source Field(s)	Applied Rules and Notes
Dx_Codetype	DGNS_VRSN_CD_*nn (1-12)*	In the following order, Set to Other (OT) where DX length < 3 or > 7 Set to ICD-10-CM (10) where DX length > 5 Set to ICD-9-CM (09) where the first character of DX is a digit Set to ICD-10-CM (10) where the first character of DX is any letter other than E or V If first character of DX is E or V, then Set to ICD-9-CM (09) where DGNS_VRSN_CD is ICD-9 (1), Set to ICD-10-CM (10) where DGNS_VRSN_CD is ICD-10 (2), Set to Other (OT) where DGNS_VRSN_CD is Other/invalid code (3) or Null *Note: While DX code type is available in the source data (DGNS_VRSN_CD), the actual DX values do not always match the source code type. Dx_Codetype is set by ETL programming when the code type can be definitively determined based upon DX value. Otherwise, Dx_Codetype is set to the source value.*
OrigDx	--	Set to blank/null
PDX	--	Set to Principal (P) if diagnosis code was extracted from DGNS_CD_1 Otherwise, set to Secondary (S)
PAdmit	DGNS_POA_IND_*nn (1-12)* ADMTG_ DGNS_CD	Set Present (Y) to Yes (Y) Set Not present (N) to No (N) Otherwise, [includes Insufficient Documentation (U), Clinical undetermined (W), and Null] set to Unknown (U) If ADMTG_ DGNS_CD not missing, set to Yes (Y)
Fields that are eliminated or migrated to other tables later in the Phase A ETL process		
STATE_CD	STATE_CD	Copy source *Note: Field included for internal quality control by jurisdiction. These codes are two-letter postal abbreviations and not necessarily just for states.*

Table 13. Mapping of Medicaid/CHIP Long Term Care source files to intermediate annual DIAGNOSIS tables

Source TAF table(s)	TAFRyy.LONG_TERM_HEADER_mm TAFRyy.LONG_TERM_LINE_mm
Target intermediate table	DX_LT_suffix
SCDM table specifications	DIAGNOSIS
Unique primary key	BENE_ID, SRC_EncounterID, Dx, Dx_Codetype, SRC_ProviderID
Sort order	BENE_ID, SRC_EncounterID, Dx, Dx_Codetype, SRC_ProviderID

Target Field	Source Field(s)	Applied Rules and Notes
BENE_ID	BENE_ID	Copy source
SRC_EncounterID	--	A string created by concatenating encoded versions of BENE_ID, ADATE, ENCTYPE, SRC_FACILITYID.
ADate	ADMSN_DT	Copy source
SRC_ProviderID	ADMTG_PRVDR_NPI SRVC_PRVDR_NPI	Result of encoding first non-missing source field. The source field list at left is processed from top to bottom. Set to blank/null if all source fields are missing
EncType	--	Hardcode to Non-Acute Institutional Stay (IS)
Dx	DGNS_CD_*nn (1-5)* ADMTG_ DGNS_CD	Remove any spaces or punctuation then copy and uppercase source, when not missing *Note: Length set to 7, which is sufficient for ICD-9-CM and ICD-10-CM diagnosis codes.*

Target Field	Source Field(s)	Applied Rules and Notes
Dx_Codetype	DGNS_VRSN_CD_*nn (1-5)*	In the following order, Set to Other (OT) where DX length < 3 or > 7 Set to ICD-10-CM (10) where DX length > 5 Set to ICD-9-CM (09) where the first character of DX is a digit Set to ICD-10-CM (10) where the first character of DX is any letter other than E or V If first character of DX is E or V, then Set to ICD-9-CM (09) where DGNS_VRSN_CD is ICD-9 (1), Set to ICD-10-CM (10) where DGNS_VRSN_CD is ICD-10 (2), Set to Other (OT) where DGNS_VRSN_CD is Other/invalid code (3) or Null *Note: While DX code type is available in the source data (DGNS_VRSN_CD), the actual DX values do not always match the source code type. Dx_Codetype is set by ETL programming when the code type can be definitively determined based upon DX value. Otherwise, Dx_Codetype is set to the source value.*
OrigDx	--	Set to blank/null
PDX	--	Set to Principal (P) if diagnosis code was extracted from DGNS_CD_1 Otherwise, set to Secondary (S)
PAdmit	DGNS_POA_IND_*nn (1-12)* ADMTG_ DGNS_CD	Set Present (Y) to Yes (Y) Set Not present (N) to No (N) Otherwise, [includes Insufficient Documentation (U), Clinical undetermined (W), and Null] set to Unknown (U) If ADMTG_ DGNS_CD not missing, set to Yes (Y)
Fields that are eliminated or migrated to other tables later in the Phase A ETL process		
STATE_CD	STATE_CD	Copy source *Note: Field included for internal quality control by jurisdiction. These codes are two-letter postal abbreviations and not necessarily just for states.*

Table 14. Mapping of Medicaid/CHIP Other Services source files to intermediate annual DIAGNOSIS tables

Source TAF Table(s)	TAFR*yy*.OTHER_SERVICES_HEADER_*mm* TAFR*yy*.OTHER_SERVICES_*mm*
Target intermediate table	DX_OT_*suffix*
SCDM table specifications	DIAGNOSIS
Unique primary key	BENE_ID, SRC_EncounterID, Dx, Dx_Codetype, SRC_ProviderID
Sort order	BENE_ID, SRC_EncounterID, Dx, Dx_Codetype, SRC_ProviderID

Target Field	Source Field(s)	Applied Rules and Notes
BENE_ID	BENE_ID	Copy source
SRC_EncounterID	--	A string created by concatenating encoded versions of BENE_ID, ADATE, ENCTYPE, SRC_PROVIDERID.
ADate	SRVC_BGN_DT LINE_SRVC_BGN_DT	Copy source For ED encounters, set as SRVC_BGN_DT from header file For other OT encounters, set for each line
DDate	SRVC_END_DT	If EncType (below) is Emergency Department (ED), copy source (*subject to special case described below*) Otherwise, set to blank/null *Special case: If EncType is Emergency Department (ED) and source value for DISCHARGE_STATUS (below) corresponds with the "SH" (Still in facility) SCDM category, then set DDATE to ".S" special missing in the intermediate table. However, the special missing ".S" value is converted to a standard missing (blank/null) in the final SCDM tables later in the process if a discharge date still cannot be affirmatively determined after combining and reconciling the intermediate tables.*

Target Field	Source Field(s)	Applied Rules and Notes
EncType	REV_CNTR_CD POS_CD BILL_TYPE_CD	If Illinois claim (all years) or Georgia or Louisiana claim (only 2016), set to Emergency Department (ED) if CPT evaluation and management code indicates Emergency Department utilization (99281, 99282, 99283, 99284, 99285) Else set to Emergency Department (ED) if revenue center code indicates Emergency Department utilization (0450, 0451, 0452, 0459, 0981—*see Table 28 for a full list of revenue center codes*). If not missing, use place of service values. *See Table 26. Field-specific mapping of POS_CD [Medicaid/CHIP] to EncType [SCDM]* Otherwise, use facility type values (i.e. second digit of BILL_TYPE_CD). *See Table 27. Field-specific mapping of BILL_TYPE_CD [Medicaid/CHIP] to EncType [SCDM]*
Dx	DGNS_CD_*nn (1-2)*	Remove any spaces or punctuation then copy and uppercase source, when not missing *Note: Length set to 7, which is sufficient for ICD-9-CM and ICD-10-CM diagnosis codes.*
Dx_Codetype	DGNS_VRSN_CD_*nn (1-2)*	In the following order, Set to Other (OT) where DX length < 3 or > 7 Set to ICD-10-CM (10) where DX length > 5 Set to ICD-9-CM (09) where the first character of DX is a digit Set to ICD-10-CM (10) where the first character of DX is any letter other than E or V If first character of DX is E or V, then Set to ICD-9-CM (09) where DGNS_VRSN_CD is ICD-9 (1), Set to ICD-10-CM (10) where DGNS_VRSN_CD is ICD-10 (2), Set to Other (OT) where DGNS_VRSN_CD is Other/invalid code (3) or Null *Note: While DX code type is available in the source data (DGNS_VRSN_CD), the actual DX values do not always match the source code type. Dx_Codetype is set by ETL programming when the code type can be definitively determined based upon DX value. Otherwise, Dx_Codetype is set to the source value.*
OrigDx	--	Set to blank/null
PDX	--	Set to Principal (P) if diagnosis code was extracted from DGNS_CD_1 Otherwise, set to Secondary (S)

Target Field	Source Field(s)	Applied Rules and Notes
PAdmit	DGNS_POA_IND_*nn (1-2)*	Set Present (Y) to Yes (Y) Set Not present (N) to No (N) Otherwise, [includes Insufficient Documentation (U), Clinical undetermined (W), and Null] set to Unknown (U)
Fields that are eliminated or migrated to other tables later in the Phase A ETL process		
STATE_CD	STATE_CD	Copy source *Note: Field included for internal quality control by jurisdiction. These codes are two-letter postal abbreviations and not necessarily just for states.*

Table 15. Mapping of Medicaid/CHIP Inpatient source files to intermediate annual PROCEDURE tables

Source TAF Table(s)	TAFR*yy*.INPATIENT_HEADER_*mm* TAFR*yy*.INPATIENT_LINE_*mm*
Target intermediate table	PX_IP_*suffix*
SCDM table specifications	PROCEDURE
Unique primary key	BENE_ID, SRC_EncounterID, Px, Px_Codetype, SRC_ProviderID
Sort order	BENE_ID, SRC_EncounterID, Px, Px_Codetype, SRC_ProviderID

Target Field	Source Field(s)	Applied Rules and Notes
BENE_ID	BENE_ID	Copy source
SRC_EncounterID	--	A string created by concatenating encoded versions of BENE_ID, ADATE, ENCTYPE, SRC_FACILITYID.
ADate	ADMSN_DT SRVC_END_DT LINE_SRVC_BGN_DT	If Nebraska claim, set as earliest available LINE_SRVC_BGN_DT across all lines for CLM_ID. Else if the first three digits of BILL_TYPE_CD are 013 or 014, set as SRVC_END_DT. Otherwise, set as ADMSN_DT.
SRC_ProviderID	OPRTG_PRVDR_NPI ADMTG_PRVDR_NPI SRVC_PRVDR_NPI	Result of encoding first non-missing source field. The source field list at left is processed from top to bottom. Preference is given to the operating physician, since this is the physician who is most likely to have performed the procedure. Other physician identifiers are used only if information about the operating physician is missing. Set to blank/null if all source fields are missing
EncType	BLG_PRVDR_TYPE_CD	If provider is a hospital (42), set to Inpatient Hospital Stay (IP). Otherwise, set to Non-Acute Institutional Stay (IS). This includes rehabilitation hospitals, psychiatric hospitals, and LTCHs
Px	PRCDR_CD_*nn (1-6)* REV_CNTR_CD	Remove any spaces or punctuation then copy and uppercase source, when not missing. *Do not report revenue center code for Total Charge (0001). See Table 28 for a full list of revenue center codes.* *Note: Length set to 7, which is sufficient for Revenue, ICD-9-CM, ICD-10-CM, and CPT/HCPCS procedure codes.*

Px_Codetype	PRCDR_CD_SYS_*nn (1-6)*	For procedures from REV_CNTR_CD: Hardcode to Revenue (RE) For procedures from PRCDR_CD_*nn*: Set to ICD-9-CM (09) where PRCDR_CD_SYS_*nn* is ICD-9-CM (02) Set to ICD-10-CM (10) where PRCDR_CD_SYS_*nn* is ICD-9-CM (02) and PX length = 7 Set to Other (OT) where PRCDR_CD_SYS_*nn* is ICD-9-CM (02) and PX length not 3 or 4 Set to ICD-10-CM (10) where PRCDR_CD_SYS_*nn* is ICD-10-CM/PCS (07) Set to Other (OT) where PRCDR_CD_SYS_*nn* is ICD-10-CM/PCS (07) and PX length not 7 Set to HCPCS (HC) where PRCDR_CD_SYS_*nn* is HCPCS (06) Set to Other (OT) where PRCDR_CD_SYS_*nn* is Other Systems (10-87) or Null Where PRCDR_CD_SYS_*nn* is CPT 4 (01), apply the following logic based on code length: If PX code length = 5, Set to CPT Category II (C2) where PX is four digits followed by F Set to CPT Category III (C3) where PX is four digits followed by T Set to HCPCS (HC) where PX has any letter in the first position, followed by four digits Set to CPT-4 (C4) where PX is five digits Set to CPT-4 (C4) where PX is four digits (starting with 0) followed by U or M Otherwise, set to Other (OT) If PX length = 7, Set to CPT-4 (C4) where PX is five digits (not starting with 0, 1, or 3) followed by two letters. The two letters at the end of the source PX value are then dropped. Otherwise, set to Other (OT) If PX length = 9, Set to CPT-4 (C4) where PX is five digits followed by four letters. The four letters at the end of the source PX value are then dropped. Otherwise, set to Other (OT) If PX is any other length, set to Other (OT) *Note: While PX code type is available in the source data*

Target Field	Source Field(s)	Applied Rules and Notes
		(PRCDR_CD_SYS), the actual PX values do not always match the source code type. Px_Codetype is set by ETL programming when the code type can be definitively determined based upon PX value. Otherwise, Px_Codetype is set to the source value.
OrigPx	--	Set to blank/null
Fields that are eliminated or migrated to other tables later in the Phase A ETL process		
STATE_CD	STATE_CD	Copy source *Note: Field included for internal quality control by jurisdiction. These codes are two-letter postal abbreviations and not necessarily just for states.*

Table 16. Mapping of Medicaid/CHIP Long Term Care source files to intermediate annual PROCEDURE tables

Source TAF Table(s)	TAFR*yy*.LONG_TERM_HEADER_*mm* TAFR*yy*.LONG_TERM_LINE_*mm*
Target intermediate table	PX_LT_*suffix*
SCDM table specifications	PROCEDURE
Unique primary key	BENE_ID, SRC_EncounterID, Px, Px_Codetype, SRC_ProviderID
Sort order	BENE_ID, SRC_EncounterID, Px, Px_Codetype, SRC_ProviderID

Target Field	Source Field(s)	Applied Rules and Notes
BENE_ID	BENE_ID	Copy source
SRC_EncounterID	--	A string created by concatenating encoded versions of BENE_ID, ADATE, ENCTYPE, SRC_FACILITYID.
ADate	ADMSN_DT	Copy source
SRC_ProviderID	ADMTG_PRVDR_NPI SRVC_PRVDR_NPI	Result of encoding first non-missing source field. The source field list at left is processed from top to bottom. Set to blank/null if all source fields are missing
EncType	--	Hardcode to Non-Acute Institutional Stay (IS)
Px	REV_CNTR_CD	Remove any spaces or punctuation then copy and uppercase source, when not missing. *Do not report revenue center code for Total Charge (0001). See Table 28 for a full list of revenue center codes.* *Note: Length set to 7, which is sufficient for Revenue, ICD-9-CM, ICD-10-CM, and CPT/HCPCS procedure codes.*
Px_Codetype	--	Hardcode to Revenue (RE)
OrigPx	--	Set to blank/null
Fields that are eliminated or migrated to other tables later in the Phase A ETL process		
STATE_CD	STATE_CD	Copy source *Note: Field included for internal quality control by jurisdiction. These codes are two-letter postal abbreviations and not necessarily just for states.*

Table 17. Mapping of Medicaid/CHIP Other Services source files to intermediate annual PROCEDURE tables

Source TAF Table(s)	TAFR*yy*.OTHER_SERVICES_HEADER_*mm* TAFR*yy*.OTHER_SERVICES_LINE_*mm*
Target intermediate table	PX_OT_*suffix*
SCDM table specifications	PROCEDURE
Unique primary key	BENE_ID, SRC_EncounterID, Px, Px_Codetype, SRC_ProviderID
Sort order	BENE_ID, SRC_EncounterID, Px, Px_Codetype, SRC_ProviderID

Target Field	Source Field(s)	Applied Rules and Notes
BENE_ID	BENE_ID	Copy source
SRC_EncounterID	--	A string created by concatenating encoded versions of BENE_ID, ADATE, ENCTYPE, SRC_PROVIDERID.
ADate	SRVC_BGN_DT LINE_SRVC_BGN_DT	Copy source For ED encounters, set as SRVC_BGN_DT from header file For other OT encounters, set for each line
SRC_ProviderID	DRCTNG_PRVDR_NPI SRVC_PRVDR_NPI	Result of encoding first non-missing source field. The source field list at left is processed from top to bottom. Set to blank/null if all source fields are missing
EncType	REV_CNTR_CD POS_CD BILL_TYPE_CD	If Illinois claim (all years) or Georgia or Louisiana claim (only 2016), set to Emergency Department (ED) if CPT evaluation and management code indicates Emergency Department utilization (99281, 99282, 99283, 99284, 99285) Else set to Emergency Department (ED) if revenue center code indicates Emergency Department utilization. (0450, 0451, 0452, 0459, 0981—*see Table 28 for a full list of revenue center codes*. If not missing, use place of service values. *See Table 26. Field-specific mapping of POS_CD [Medicaid/CHIP] to EncType [SCDM]* Otherwise, use facility type values (i.e. second digit of BILL_TYPE_CD). *See Table 27. Field-specific mapping of BILL_TYPE_CD [Medicaid/CHIP] to EncType [SCDM]*

Target Field	Source Field(s)	Applied Rules and Notes
Px	LINE_PRCDR_CD REV_CNTR_CD OT_ACCMDTN_HCPCS_RATE	Remove any spaces or punctuation then copy and uppercase source, when not missing. OT_ACCMDTN_HCPCS_RATE only used when value length = 5 and includes no punctuation. *Do not report revenue center code for Total Charge (0001). See Table 28 for a full list of revenue center codes.* *Note: Length set to 7, which is sufficient for Revenue, ICD-9-CM, ICD-10-CM, and CPT/HCPCS procedure codes.*

Px_Codetype	LINE_PRCDR_CD_SYS	For procedures from REV_CNTR_CD: Hardcode to Revenue (RE) For procedures from PRCDR_CD_*nn*: Set to ICD-9-CM (09) where PRCDR_CD_SYS_*nn* is ICD-9-CM (02) Set to ICD-10-CM (10) where PRCDR_CD_SYS_*nn* is ICD-9-CM (02) and PX length = 7 Set to Other (OT) where PRCDR_CD_SYS_*nn* is ICD-9-CM (02) and PX length not 3 or 4 Set to ICD-10-CM (10) where PRCDR_CD_SYS_*nn* is ICD-10-CM/PCS (07) Set to Other (OT) where PRCDR_CD_SYS_*nn* is ICD-10-CM/PCS (07) and PX length not 7 Set to HCPCS (HC) where PRCDR_CD_SYS_*nn* is HCPCS (06) Set to Other (OT) where PRCDR_CD_SYS_*nn* is Other Systems (10-87) or Null Where PRCDR_CD_SYS_*nn* is CPT 4 (01), apply the following logic based on code length: If PX code length = 5, Set to CPT Category II (C2) where PX is four digits followed by F Set to CPT Category III (C3) where PX is four digits followed by T Set to HCPCS (HC) where PX has any letter in the first position, followed by four digits Set to CPT-4 (C4) where PX is five digits Set to CPT-4 (C4) where PX is four digits (starting with 0) followed by U or M Otherwise, set to Other (OT) If PX length = 7, Set to CPT-4 (C4) where PX is five digits (not starting with 0, 1, or 3) followed by two letters. The two letters at the end of the source PX value are then dropped. Otherwise, set to Other (OT) If PX length = 9, Set to CPT-4 (C4) where PX is five digits followed by four letters. The four letters at the end of the source PX value are then dropped. Otherwise, set to Other (OT)

Target Field	Source Field(s)	Applied Rules and Notes
		If PX is any other length, set to Other (OT) *Note: While PX code type is available in the source data (PRCDR_CD_SYS), the actual PX values do not always match the source code type. Px_Codetype is set by ETL programming when the code type can be definitively determined based upon PX value. Otherwise, Px_Codetype is set to the source value.* For procedures from OT_ACCMDTN_HCPCS_RATE: Set to CPT Category II (C2) where PX is four digits followed by F Set to CPT Category III (C3) where PX is four digits followed by T Set to HCPCS (HC) where PX has any letter in the first position, followed by four digits Set to CPT-4 (C4) where PX is four digits (starting with 0) followed by U or M Set to CPT-4 (C4) where PX is five digits Otherwise, set to Other (OT)
OrigPx	--	Set to blank/null
Fields that are eliminated or migrated to other tables later in the Phase A ETL process		
STATE_CD	STATE_CD	Copy source *Note: Field included for internal quality control by jurisdiction. These codes are two-letter postal abbreviations and not necessarily just for states.*

3.2.3. Phase A ETL Pre-Combination Data Fixes

After all source-specific, period-specific intermediate tables have been created from source, some intermediate tables require specific fixes to previous identified issues in the source data. Intermediate tables copied from a prior Phase A ETL process do not require this pre-combination data fix step. Currently, three specific fixes are implemented during the pre-combination ETL stage.

1. The 2020 T-MSIS BENE_ID Bridge File crosswalk is applied to all 2020 intermediate tables before the combination ETL stage. Roughly 210,000 BENE_IDs are updated in the DEMOGRAPHIC_2020 intermediate table.
2. PostalCodes for Rhode Island beneficiaries in the 2016 DEMOG_ELIG_BASE file are erroneously stripped of leading zeroes in the source data. Adding a '0' to the beginning of source ZIPs that start with '28' or '29' results in a legitimate Rhode Island PostalCode for about 330,000 beneficiaries (out of roughly 360,000 total). When including proxy ZIP codes, >99% of beneficiaries where STATE_CD = RI have a verifiable Rhode Island PostalCode in 2016.
3. Beneficiaries with a death date in any yearly intermediate DEATH table prior to a birth date in any yearly intermediate DEMOGRAPHIC table are excluded from all years of the ETL. This situation rarely occurs as a BENE_ID assignment error, where a beneficiary dies in an earlier year and then a newborn in a later year is erroneously assigned the same BENE_ID as that previously deceased beneficiary. A death date prior to birth date can also occur as a discrepancy between DE and NDI source data. Fewer than 200 beneficiaries are excluded from ETL3 due to death dates prior to birth dates.

3.2.4. Phase A ETL Combined/Reconciled Tables

After all source-specific, period-specific intermediate tables have been created from source or copied from a prior Phase A ETL process, they need to be combined. At the end of this stage, these combined tables closely resemble the final SCDM production tables, but still have source-linked IDs rather than SCDM-compliant ETL-specific consecutive integer values. Some important considerations for this process are detailed below.

Table 18. Rules and notes for combining source-specific, period-specific intermediate tables into single tables

Combined Table	Intermediate Tables	Applied Rules and Notes
ENROLLMENT	ENROLLMENT_*yyyy*	Enrollment periods in different intermediate tables should be combined to create continuous enrollment periods if (a) a period in one intermediate table starts within one day of the end of a period in another intermediate table and (b) both periods have the same medical/drug coverage and plan type.
DEMOGRAPHIC	DEMOGRAPHIC_*yyyy*	For each beneficiary that appears in multiple intermediate tables, information is retained from the most recent intermediate file (i.e., latest year) containing that beneficiary's information, as this reflects the most up-to-date information. An exception to this is PostalCode_Date; for this field, the earliest date associated with the latest known PostalCode is retained.

Combined Table	Intermediate Tables	Applied Rules and Notes
DEATH	DEATH_*yyyy*	For each beneficiary that appears in multiple intermediate files, information is retained from the most recent intermediate file (i.e., latest year) containing beneficiary information derived from NDI, as this reflects the most current and accurate known information. If NDI data is unavailable for a beneficiary, the most recent information from DE data is retained instead.
CAUSE_OF_DEATH	COD_*yyyy*	For each beneficiary that appears in multiple intermediate files, information is retained from the most recent intermediate file (i.e., latest year) containing beneficiary information, as this reflects the most current known information.
DISPENSING	DISPENSING_*suffix*	<none>
ENCOUNTER	ENC_IP_*suffix* ENC_OT_*suffix* ENC_LT_*suffix*	For encounters that span multiple intermediate files, defined by individual encounter records that have the same combination of PatID + EncounterID, only the encounter record covering the latest service date is retained, since that is the record that will have the most current information about discharge date, discharge disposition, discharge status, etc. If there are records related to the same combination of PatID + EncounterID that are derived from different sources, use the record with the lower value for the Priority variable to determine which record to retain. If Discharge_Disposition is Expired (E) but not the last known encounter for a patient, Discharge_Disposition is set to Alive (A)
DIAGNOSIS	DX_IP_*suffix* DX_OT_*suffix* DX_LT_*suffix*	For encounters that span multiple intermediate files, defined by individual encounter records that have the same combination of PatID + EncounterID, ensure diagnosis information is unique in the final table.
PROCEDURE	PX_IP_*suffix* PX_OT_*suffix* PX_LT_*suffix*	For encounters that span multiple intermediate files, defined by individual encounter records that have the same combination of PatID + EncounterID, ensure procedure information is unique in the final table.

The FACILITY and PROVIDER tables are then derived from the combined ENCOUNTER, DIAGNOSIS, PROCEDURE, and DISPENSING tables. These tables include all distinct providers and facilities that are present in the combined tables. Provider specialty information from the NPPES NPI registry is merged onto the combined PROVIDER table.

Table 19. Rules and notes for generating FACILITY and PROVIDER tables.

Combined Table	Combined Tables	Applied Rules and Notes
PROVIDER	DIAGNOSIS PROCEDURE DISPENSING	Variables: ProviderID, Specialty, Specialty_CodeType (hardcoded to 0 for 10-character code, hardcoded to 2 for unknown/undefined specialty [99])
	NPPES*mmmyyyy*	Provider specialty is derived from the NPPES data file corresponding to the maximum date of the Phase A ETL's range. The specialty value is populated with the taxonomy code that is designated as primary in the NPPES. Includes a record representing the .U special missing value, as follows: ProviderID = .U (Length Num(3) Specialty = 99 (Length Char(2))
FACILITY	ENCOUNTER	Variables: FacilityID, Facility_Location
	NPPES*mmmyyyy*	Facility location is derived from the NPPES data file corresponding to the maximum date of the Phase A ETL's range. Includes a record representing the .U special missing value, as follows: FacilityID = .U (Length Num(3) Facility_Location = " " (null) (Length Char(1))

3.2.5. Phase A ETL Crosswalk Files

Before the combined tables are finalized, each unique value of the SCDM-specified identifier (ID) variables—PatID, EncounterID, ProviderID, and FacilityID—is replaced with a consecutive integer value, to reduce storage size. This replacement is achieved by generating and applying ETL-specific crosswalk files that record the connections between the original identifier values and the shorter consecutive integer identifier values. These crosswalk files also enable the linkage of records in the SCDM production tables with source data, as is done in the Phase B ETL process. These crosswalk files are stored with the intermediate files and are not accessible by SOC queries.

Table 20. Description of crosswalk files.

Crosswalk File	SCDM-compliant ID	Source-linked ID(s)	Table Source(s)
XWALK_PATID	PatID	BENE_ID	Combined DEMOGRAPHICS table
XWALK_ENCID	EncounterID	SRC_ENCOUNTERID	Combined ENCOUNTER table
XWALK_PROVID	ProviderID	SRC_PROVIDERID (encoded), ORIG_PROVIDERID (decoded)	Combined DIAGNOSIS, PROCEDURE, and DISPENSING tables
XWALK_FACID	FacilityID	SRC_FACILITYID (encoded), ORIG_FACILITYID (decoded)	Combined ENCOUNTER table

3.2.6. Phase A ETL Final Production Tables

The last step in the Phase A ETL process is to prepare the combined tables for production. Each relevant crosswalk is applied to each table, replacing the intermediate IDs with SCDM-compliant consecutive integer values. We also remove any non-SCDM fields and verify sort order for each table. The specifications below describe the unique primary keys and expected sorting for each SCDM production table.

Table 21. Description of final Phase A ETL production tables.

Final SCDM Table	Unique Primary Key	Applied ID Crosswalk(s)	Sorted By
ENROLLMENT	PatID, Enr_Start, Enr_End, MedCov, DrugCov, Chart, PlanType	PatID	PatID, Enr_Start, Enr_End, MedCov, DrugCov, Chart
DEMOGRAPHIC	PatID	PatID	PatID
DEATH*	PatID	PatID	PatID
CAUSE_OF_DEATH*	PatID, CodeType, COD, Source	PatID	PatID
DISPENSING	PatID, RxDate, Rx	PatID, ProviderID	PatID, RxDate, Rx
ENCOUNTER	PatID, EncounterID	PatID, EncounterID, ProviderID	PatID, ADate
DIAGNOSIS	PatID, EncounterID, Dx, Dx_Codetype, ProviderID	PatID, EncounterID, ProviderID	PatID, ADate
PROCEDURE	PatID, EncounterID, Px, Px_Codetype, ProviderID	PatID, EncounterID, ProviderID	PatID, ADate
PROVIDER	ProviderID	ProviderID	ProviderID
FACILITY	FacilityID	FacilityID	FacilityID

* When applying the PATID crosswalk to the DEATH and CAUSE_OF_DEATH tables, any records that are present only in the intermediate DEATH and COD tables but not in the PATID crosswalk (derived from the DEMOGRAPHICS table) are removed from the DEATH and CAUSE_OF_DEATH tables. This purge eliminates the number of patients in the DEATH and CAUSE_OF_DEATH tables who have no demographic, enrollment, or encounter data.

4. Phase B ETL Process

4.1. Phase B ETL Specifications

The Phase B ETL Process creates the Mother-Infant-Linkage table. DPHS and Sentinel Operations Center (SOC) agree on the contents and other details of a given Phase B ETL before each new Phase B ETL process commences. This includes, but is not limited to:

- Date range covered (minimum date, maximum date), which is specified by the control file for the previously run Phase A ETL process
- Cut-off value for excluding MSIS_CASE_NUMs due to the number of associated BENE_IDs (see more details below)
- Number of days an infant's birth date can be pre- or post-delivery admission date when making mother-infant linkages
- Incorporation of unencrypted MSIS_CASE_NUM identifiers using the MSIS_CASE_NUM crosswalk

The Phase A ETL (core tables) and Phase B ETL (MIL) builds are separate, sequential processes. The Phase B ETL requires both the running of the Phase A ETL programming and the completion of the Phase A QA package. The Phase A QA package creates 2 tables in that query's DPLOCAL folder that identify deliveries (R01_MOTHER_DELIVERIES) and infants (R02_INFANTS) eligible to be linked in the Phase B ETL. (See Mother-Infant Identification Specifications for information on the creation of these two files.)

The final SCDM MOTHER_INFANT_LINKAGE table created during the Phase B ETL process is fully rebuilt every time the Phase B ETL program package is run. The table is never copied from a previous ETL.

4.2. Phase B ETL Source Data Mapping and Workflow

4.2.1. Overview of ETL Workflow

Mothers and infants exist as distinct beneficiaries in the Phase A ETL. The Phase A QA package outputs two tables that identify mothers/deliveries and infants available to be linked in the Phase B ETL MIL table. An encrypted T-MSIS case number (MSIS_CASE_NUM) found in the source DE data is a state-assigned value that identifies a beneficiary's Medicaid/CHIP case. The MSIS_CASE_NUM, which may be considered as a "family" identifier, is used as part of the algorithm to link deliveries and infants as follows.

1. The unencrypted MSIS_CASE_NUM crosswalk is applied to the demographic and eligibility records of New Jersey beneficiaries. The original, unencrypted MSIS_CASE_NUM allows for the actual case number for New Jersey families to be determined, as described in Section 1.2.5.
2. All years of demographic and eligibility data are combined so that the number of BENE_IDs associated with a single combination of MSIS_CASE_NUM and STATE_CD (across all data-years) can be determined. Since an excessive number of BENE_IDs linked to a single MSIS_CASE_NUM indicates an issue with that MSIS_CASE_NUM, a cut-off value is determined for excluding any MSIS_CASE_NUM and STATE_CD based on the 99.9% percentile. For example, in ETL 1, 99.9% of MSIS_CASE_NUM and STATE_CD combinations are associated with less than 18 BENE_IDs, so 18 is used as the

cut-off value. The end result of applying this exclusion is a temporary table of MSIS_CASE_NUM, STATE_CD, and BENE_ID.

3. Using the PatID-BENE_ID crosswalk from the Phase A ETL, BENE_ID is merged onto both the deliveries (R01_MOTHER_DELIVERIES) and infants (R02_INFANTS) tables from the Phase A QA package. It is necessary to add BENE_ID to both the deliveries and infants files.
4. MSIS_CASE_NUM and STATE_CD are then merged by BENE_ID onto the deliveries and infants tables using the temporary table created in step #2. Both the deliveries and infants tables now also contain MSIS_CASE_NUM and STATE_CD, which are the key variables for linking mothers and infants.
5. Deliveries and infants are then merged by MSIS_CASE_NUM and STATE_CD. Links are restricted based upon delivery admission/discharge dates and child birth date. Child birth date may be no more than 3 days before or 180 days after admission date and either before or on discharge date (where discharge date is not missing) or no more than 3 days after admission date (where discharge date is missing). The end result of this linking step is an intermediate MOTHER_INFANT_LINKAGE table of linked deliveries and infants.
6. Any linkages for infants that were matched to more than one mother/delivery in step #4 are dropped from the intermediate MOTHER_INFANT_LINKAGE table.
7. Any deliveries or infants not linked after step #5 are added as unmatched records to the table of linked deliveries-infants to create the final SCDM MOTHER_INFANT_LINKAGE table.

4.2.2. Source Data to Final Table Mapping

Table 22. Mapping of Medicaid/CHIP Demographic and Enrollment source files to MIL table

Source TAF Table(s)	TAFR*yy*.DEMOG_ELIG_BASE
Phase A ETL table(s)	XWALK_PATID
Phase A QA package table(s)	R01_MOTHER_DELIVERIES R02_INFANTS
SCDM table specifications	MOTHER_INFANT_LINKAGE
Unique primary key	MPatID, EncounterID, CPatID
Sort order	MPatID, ADate, CPatID

Target Field	Applied Rules and Notes
MPatID	Copy source from R01_MOTHER_DELIVERIES
MBirth_Date	Copy source from R01_MOTHER_DELIVERIES
Age	Copy source from R01_MOTHER_DELIVERIES
EncounterID	Copy source from R01_MOTHER_DELIVERIES
EncType	Copy source from R01_MOTHER_DELIVERIES
ADate	Copy source from R01_MOTHER_DELIVERIES
DDate	Copy source from R01_MOTHER_DELIVERIES

Target Field	Applied Rules and Notes
CPatID	Copy source from R02_INFANTS
CBirth_Date	Copy source from R02_INFANTS
Sex	Copy source from R02_INFANTS
CEnr_Start	Copy source from R02_INFANTS
Birth_Type	Copy source from R02_INFANTS
Birth_Type_Primes	Copy source from R02_INFANTS
MatchMethod	If linkage made, hardcode to Health plan subscriber or family number (SI) Otherwise, hardcode to No linkage made; any other reason (NA)

4.2.3. Final Production Table

The last step in the Phase B ETL process is to prepare the final table for production. We remove any non-SCDM fields and verify sort order for the table. The specifications below describe the unique primary keys and expected sorting for each SCDM production table.

Table 23. Description of final MIL production table.

Final SCDM Table	Unique Primary Key	Applied ID Crosswalk(s)	Sorted By
MOTHER_INFANT_LINKAGE	MPatID, EncounterID, CPatID		MPatID, ADate, CPatID

5. Field-specific Mappings and Code Reference Tables

This section details the mappings between source Medicaid/CHIP variable values and SCDM values. Medicaid/CHIP values are presented on the left side of the table, while SCDM values are presented on the right. These values lists are derived from the TAF Demographic and Eligibility RIFs, Version 1.6 Codebook (Medicaid/CHIP values), TAF Claims RIFs, Version 1.5 Codebook (Medicaid/CHIP values), and SCDM version 8.2.0 (SCDM values). Decisions related to the value mappings were based on guidance from SOC.

Table 24. Field-specific mapping of STATE_CD [Medicaid/CHIP] to PostalCode [SCDM]

STATE_CD	PostalCode	STATE_CD	PostalCode	STATE_CD	PostalCode
AL	36131	LA	70822	OK	73184
AK	99812	ME	04336	OR	97311
AZ	85065	MD	21412	PA	17177
AR	72255	MA	02211	PR	00935
CA	94249	MI	48919	RI	02902
CO	80263	MN	55133	SC	29214
CT	06161	MS	38686	SD	57197
DE	19898	MO	65106	TN	37235
DC	20222	MT	59625	TX	78773
FL	32307	NE	68544	UT	84141
GA	30380	NV	89711	VT	05633
HI	96844	NH	03305	VI	00830
ID	83722	NJ	08666	VA	23282
IL	62726	NM	87131	WA	98599
IN	46288	NY	12233	WV	25396
IA	50330	NC	27656	WI	53777
KS	66626	ND	58122	WY	82006
KY	40620	OH	43266	GU	96919

Table 25. Field-specific mapping of PTNT_DSCHRG_STUS_CD [Medicaid/CHIP] to Discharge_Disposition [SCDM]

PTNT_DSCHRG_STUS_CD		Discharge_Disposition	
Value	**Description**	**Value**	**Description**
NULL	<null>	U	Unknown
0	Unknown Value (but present in data)	U	Unknown
01	Discharged to home/self-care (routine charge).	A	Discharged alive
02	Discharged/transferred to other short-term general hospital for inpatient care.	A	Discharged alive
03	Discharged/transferred to skilled nursing facility (SNF) with Medicare certification in anticipation of covered skilled care — (For hospitals with an approved swing bed arrangement, use Code 61 — swing bed. For reporting discharges/transfers to a non-certified SNF, the hospital must use Code 04 — ICF.	A	Discharged alive
04	Discharged/transferred to intermediate care facility (ICF).	A	Discharged alive
05	Discharged/transferred to another type of institution for inpatient care (including distinct parts).	A	Discharged alive
06	Discharged/transferred to home care of organized home health service organization.	A	Discharged alive
07	Left against medical advice or discontinued care.	A	Discharged alive
08	Discharged/transferred to home under care of a home IV drug therapy provider.	A	Discharged alive
09	Admitted as an inpatient to this hospital. In situations where a patient is admitted before midnight of the third day following the day of an outpatient service, the outpatient services are considered inpatient.	A	Discharged alive
20	Expired (patient did not recover).	E	Expired
21	Discharged/transferred to court/law enforcement.	A	Discharged alive
30	Still patient.	S ED: UN	Still In Facility ED Encounters: Unknown
40	Expired at home (hospice claims only).	E	Expired
41	Expired in a medical facility such as hospital, SNF, ICF, or freestanding hospice. (hospice claims only).	E	Expired
42	Expired — place unknown (hospice claims only).	E	Expired
43	Discharged/transferred to a federal hospital.	A	Discharged alive
50	Discharged/transferred to hospice — home.	A	Discharged alive
51	Discharged/transferred to hospice — medical facility.	A	Discharged alive

PTNT_DSCHRG_STUS_CD		Discharge_Disposition	
Value	Description	Value	Description
61	Discharged/transferred within this institution to a hospital-based Medicare-approved swing bed.	A	Discharged alive
62	Discharged/transferred to an inpatient rehabilitation facility including distinct parts units of a hospital.	A	Discharged alive
63	Discharged/transferred to a LTCH.	A	Discharged alive
64	Discharged/transferred to a nursing facility certified under Medicaid but not under Medicare.	A	Discharged alive
65	Discharged/transferred to a psychiatric hospital or psychiatric distinct unit of a hospital (these types of hospitals were pulled from patient/discharge status code '05' and given their own code).	A	Discharged alive
66	Discharged/transferred to a critical access hospital (CAH)	A	Discharged alive
69	Discharged/transferred to a designated disaster alternative care site (starting 10/2013; applies only to particular MS-DRGs*). *MS-DRG codes where additional codes were available in October 2013 280 = (Acute Myocardial Infarction, Discharged Alive with MCC) 281 = (Acute Myocardial Infarction, Discharged Alive with CC) 282 = (Acute Myocardial Infarction, Discharged Alive without CC/MCC) 789 = (Neonates, Died or Transferred to Another Acute Care Facility)	A	Discharged alive
70	Discharged/transferred to another type of health care institution not defined elsewhere in code list.	A	Discharged alive
71	Discharged/transferred/referred to another institution for outpatient services as specified by the discharge plan of care (effective 9/01; discontinued effective 10/1/2005)	A	Discharged alive
72	Discharged/transferred/referred to this institution for outpatient services as specified by the discharge plan of care (effective 9/2001; discontinued effective 10/1/2005)	A	Discharged alive
81	Discharged to home or self-care with a planned acute care hospital inpatient readmission.	A	Discharged alive
82	Discharged/transferred to a short term general hospital for inpatient care with a planned acute care hospital inpatient readmission.	A	Discharged alive
83	Discharged/transferred to a SNF with Medicare certification with a planned acute care hospital inpatient readmission.	A	Discharged alive
84	Discharged/transferred to a facility that provides custodial or supportive care with a planned acute care hospital inpatient readmission.	A	Discharged alive
85	Discharged/transferred to a designated cancer center or children's	A	Discharged alive

PTNT_DSCHRG_STUS_CD		Discharge_Disposition	
Value	**Description**	**Value**	**Description**
	hospital with a planned acute care hospital inpatient readmission.		
86	Discharged/transferred to home under care of organized home health service organization with a planned acute care hospital inpatient readmission.	A	Discharged alive
87	Discharged/transferred to court/law enforcement with a planned acute care hospital inpatient readmission.	A	Discharged alive
88	Discharged/transferred to a federal health care facility with a planned acute care hospital inpatient readmission.	A	Discharged alive
89	Discharged/transferred to a hospital-based Medicare-approved swing bed with a planned acute care hospital inpatient readmission.	A	Discharged alive
90	Discharged/transferred to an inpatient rehabilitation facility (IRF) including rehabilitation distinct part units of a hospital with a planned acute care hospital inpatient readmission.	A	Discharged alive
91	Discharged/transferred to a Medicare-certified LTCH with a planned acute care hospital inpatient readmission.	A	Discharged alive
92	Discharged/transferred to a nursing facility certified under Medicaid but not certified under Medicare with a planned acute care hospital inpatient readmission.	A	Discharged alive
93	Discharged/transferred to a psychiatric distinct part unit of a hospital with a planned acute care hospital inpatient readmission.	A	Discharged alive
94	Discharged/transferred to a CAH with a planned acute care hospital inpatient readmission.	A	Discharged alive
95	Discharged/transferred to another type of health care institution not defined elsewhere in this code list with a planned acute care hospital inpatient readmission.	A	Discharged alive

*This table is provided unedited from the CMS TAF Claims RIFs Codebook, version 1.6.

Table 26. Field-specific mapping of PTNT_DSCHRG_STUS_CD [Medicaid/CHIP] to Discharge_Status [SCDM]

PTNT_DSCHRG_STUS_CD		Discharge_Status	
Value	**Description**	**Value**	**Description**
NULL	<null>	UN	Unknown
0	Unknown Value (but present in data)	UN	Unknown
01	Discharged to home/self-care (routine charge).	HO	Home/Self Care
02	Discharged/transferred to other short-term general hospital for inpatient care.	IP	Other Acute Inpatient Hospital
03	Discharged/transferred to a SNF with Medicare certification in anticipation of covered skilled care — (For hospitals with an approved swing bed arrangement, use Code 61 — swing bed. For reporting discharges/transfers to a non-certified SNF, the hospital must use Code 04 — ICF.	SN	Skilled Nursing Facility
04	Discharged/transferred to ICF.	NH	Nursing Home (Includes ICF)
05	Discharged/transferred to another type of institution for inpatient care (including distinct parts).	IP	Other Acute Inpatient Hospital
06	Discharged/transferred to home care of organized home health service organization.	HH	Home Health
07	Left against medical advice or discontinued care.	AM	Against Medical Advice
08	Discharged/transferred to home under care of a home IV drug therapy provider.	HO	Home/Self Care
09	Admitted as an inpatient to this hospital. In situations where a patient is admitted before midnight of the third day following the day of an outpatient service, the outpatient services are considered inpatient.	IP	Other Acute Inpatient Hospital
20	Expired (patient did not recover).	EX	Expired
21	Discharged/transferred to court/law enforcement.	OT	Other
30	Still patient.	SH ED: UN	Still In Facility ED Encounters: Unknown
40	Expired at home (hospice claims only).	EX	Expired
41	Expired in a medical facility such as hospital, SNF, ICF, or freestanding hospice. (hospice claims only).	EX	Expired
42	Expired — place unknown (hospice claims only).	EX	Expired
43	Discharged/transferred to a federal hospital.	IP	Other Acute Inpatient

PTNT_DSCHRG_STUS_CD		Discharge_Status	
Value	**Description**	**Value**	**Description**
			Hospital
50	Discharged/transferred to hospice — home.	HS	Hospice
51	Discharged/transferred to hospice — medical facility.	HS	Hospice
61	Discharged/transferred within this institution to a hospital-based Medicare approved swing bed.	SN	Skilled Nursing Facility
62	Discharged/transferred to an inpatient rehabilitation facility including distinct parts units of a hospital.	RH	Rehabilitation Facility
63	Discharged/transferred to a LTCH.	OT	Other
64	Discharged/transferred to a nursing facility certified under Medicaid but not under Medicare.	NH	Nursing Home (Includes ICF)
65	Discharged/Transferred to a psychiatric hospital or psychiatric distinct unit of a hospital (these types of hospitals were pulled from patient/discharge status code '05' and given their own code).	IP	Other Acute Inpatient Hospital
66	Discharged/transferred to a CAH	IP	Other Acute Inpatient Hospital
69	Discharged/transferred to a designated disaster alternative care site (starting 10/2013; applies only to particular MS-DRGs*).	OT	Other
70	Discharged/transferred to another type of health care institution not defined elsewhere in code list.	OT	Other
71	Discharged/transferred/referred to another institution for outpatient services as specified by the discharge plan of care (effective 9/2001; discontinued effective 10/1/2005)	OT	Other
72	Discharged/transferred/referred to this institution for outpatient services as specified by the discharge plan of care (effective 9/2001; discontinued effective 10/1/2005)	OT	Other
81	Discharged to home or self-care with a planned acute care hospital inpatient readmission.	HO	Home/Self Care
82	Discharged/transferred to a short term general hospital for inpatient care with a planned acute care hospital inpatient readmission.	IP	Other Acute Inpatient Hospital
83	Discharged/transferred to a SNF with Medicare certification with a planned acute care hospital inpatient readmission.	SN	Skilled Nursing Facility
84	Discharged/transferred to a facility that provides custodial or supportive care with a planned acute care hospital inpatient readmission.	NH	Nursing Home (Includes ICF)
85	Discharged/transferred to a designated cancer center or children's hospital with a planned acute care hospital inpatient readmission.	IP	Other Acute Inpatient Hospital

PTNT_DSCHRG_STUS_CD		Discharge_Status	
Value	**Description**	**Value**	**Description**
86	Discharged/transferred to home under care of organized home health service organization with a planned acute care hospital inpatient readmission.	HH	Home Health
87	Discharged/transferred to court/law enforcement with a planned acute care hospital inpatient readmission.	OT	Other
88	Discharged/transferred to a federal health care facility with a planned acute care hospital inpatient readmission.	IP	Other Acute Inpatient Hospital
89	Discharged/transferred to a hospital-based Medicare-approved swing bed with a planned acute care hospital inpatient readmission.	SN	Skilled Nursing Facility
90	Discharged/transferred to an IRF, including rehabilitation distinct part units of a hospital with a planned acute care hospital inpatient readmission.	RH	Rehabilitation Facility
91	Discharged/transferred to a Medicare certified LTCH with a planned acute care hospital inpatient readmission.	OT	Other
92	Discharged/transferred to a nursing facility certified under Medicaid but not certified under Medicare with a planned acute care hospital inpatient readmission.	NH	Nursing Home (Includes ICF)
93	Discharged/transferred to a psychiatric distinct part unit of a hospital with a planned acute care hospital inpatient readmission.	IP	Other Acute Inpatient Hospital
94	Discharged/transferred to a CAH with a planned acute care hospital inpatient readmission.	IP	Other Acute Inpatient Hospital
95	Discharged/transferred to another type of health care institution not defined elsewhere in this code list with a planned acute care hospital inpatient readmission.	OT	Other

*This table is provided unedited from the CMS TAF Claims RIFs Codebook, version 1.6.

Table 27. Field-specific mapping of POS_CD [Medicaid/CHIP] to EncType [SCDM]

POS_CD		EncType	
Value	**Description**	**Value**	**Description**
NULL	<null>	OA	Other Ambulatory Visit
01	Pharmacy. A facility or location where drugs and other medically related items and services are sold, dispensed, or otherwise provided directly to patients.	OA	Other Ambulatory Visit
02	Telehealth. The location where health services and health related services are provided or received, through a telecommunication system. (Effective 01/01/2017)	OA	Other Ambulatory Visit
03	School. A facility whose primary purpose is education.	OA	Other Ambulatory Visit
04	Homeless Shelter. A facility or location whose primary purpose is to provide temporary housing to homeless individuals (e.g., emergency shelters, individual or family shelters).	OA	Other Ambulatory Visit
05	Indian Health Service — Free-standing Facility. A facility or location, owned and operated by the Indian Health Service, which provides diagnostic, therapeutic (surgical and non-surgical), and rehabilitation services to American Indians and Alaska Natives who do not require hospitalization.	AV	Ambulatory Visit
06	Indian Health Service — Provider-based Facility. A facility or location, owned and operated by the Indian Health Service, which provides diagnostic, therapeutic (surgical and non-surgical), and rehabilitation services rendered by, or under the supervision of, physicians to American Indians and Alaska Natives admitted as inpatients or outpatients.	AV	Ambulatory Visit
07	Tribal 638 — Free-standing Facility. A facility or location owned and operated by a federally recognized American Indian or Alaska Native tribe or tribal organization under a 638 agreement, which provides diagnostic, therapeutic (surgical and non-surgical), and rehabilitation services to tribal members who do not require hospitalization.	AV	Ambulatory Visit
08	Tribal 638 Provider-based Facility. A facility or location owned and operated by a federally recognized American Indian or Alaska Native tribe or tribal organization under a 638 agreement, which provides diagnostic, therapeutic (surgical and non-surgical), and rehabilitation services to tribal members admitted as inpatients or outpatients.	AV	Ambulatory Visit

POS_CD Value	POS_CD Description	EncType Value	EncType Description
09	Prison/Correctional Facility. A prison, jail, reformatory, work farm, detention center, or any other similar facility maintained by either Federal, State or local authorities for the purpose of confinement or rehabilitation of adult or juvenile criminal offenders.	OA	Other Ambulatory Visit
10	Unassigned. N/A	OA	Other Ambulatory Visit
11	Office. Location, other than a hospital, SNF, military treatment facility, community health center, State or local public health clinic, or ICF, where the health professional routinely provides health examinations, diagnosis, and treatment of illness or injury on an ambulatory basis.	AV	Ambulatory Visit
12	Home. Location, other than a hospital or other facility, where the patient receives care in a private residence.	OA	Other Ambulatory Visit
13	Assisted Living Facility. Congregate residential facility with self-contained living units providing assessment of each resident's needs and on-site support 24 hours a day, 7 days a week, with the capacity to deliver or arrange for services including some health care and other services.	OA	Other Ambulatory Visit
14	Group Home. A residence, with shared living areas, where clients receive supervision and other services such as social and/or behavioral services, custodial service, and minimal services (e.g., medication administration).	OA	Other Ambulatory Visit
15	Mobile Unit. A facility/unit that moves from place-to-place equipped to provide preventive, screening, diagnostic, and/or treatment services.	OA	Other Ambulatory Visit
16	Temporary Lodging. A short term accommodation such as a hotel, camp ground, hostel, cruise ship or resort where the patient receives care, and which is not identified by any other POS code.	OA	Other Ambulatory Visit
17	Walk-in Retail Health Clinic. A walk-in health clinic, other than an office, urgent care facility, pharmacy or independent clinic and not described by any other Place of Service code, that is located within a retail operation and provides, on an ambulatory basis, preventive and primary care services.	OA	Other Ambulatory Visit
18	Place of Employment — Worksite. A location, not described by any other POS code, owned or operated by a public or private entity where the patient is employed, and where a health professional provides on-going or episodic occupational medical, therapeutic or rehabilitative services to the individual. (effective 01/01/2013; discontinued effective 05/01/2013)	OA	Other Ambulatory Visit

POS_CD Value	Description	EncType Value	Description
19	Off Campus — Outpatient Hospital. A portion of an off-campus hospital provider-based department which provides diagnostic, therapeutic (both surgical and nonsurgical), and rehabilitation services to sick or injured persons who do not require hospitalization or institutionalization. (effective 01/01/2016)	OA	Other Ambulatory Visit
20	Urgent Care Facility. Location, distinct from a hospital emergency room, an office, or a clinic, whose purpose is to diagnose and treat illness or injury for unscheduled, ambulatory patients seeking immediate medical attention.	AV	Ambulatory Visit
21	Inpatient Hospital. A facility, other than psychiatric, which primarily provides diagnostic, therapeutic (both surgical and nonsurgical), and rehabilitation services by, or under, the supervision of physicians to patients admitted for a variety of medical conditions.	OA	Other Ambulatory Visit
22	Outpatient Hospital. A portion of a hospital which provides diagnostic, therapeutic (both surgical and nonsurgical), and rehabilitation services to sick or injured persons who do not require hospitalization or institutionalization.	AV	Ambulatory Visit
23	Emergency Room – Hospital. A portion of a hospital where emergency diagnosis and treatment of illness or injury is provided.	AV	Ambulatory Visit
24	Ambulatory Surgical Center. A freestanding facility, other than a physician's office, where surgical and diagnostic services are provided on an ambulatory basis.	AV	Ambulatory Visit
25	Birthing Center. A facility, other than a hospital's maternity facilities or a physician's office, which provides a setting for labor, delivery, and immediate post-partum care as well as immediate care of newborn infants.	AV	Ambulatory Visit
26	Military Treatment Facility. A medical facility operated by one or more of the Uniformed Services. Military Treatment Facility (MTF) also refers to certain former U.S. Public Health Service (USPHS) facilities now designated as Uniformed Service Treatment Facilities (USTF).	OA	Other Ambulatory Visit
27-30	Unassigned. N/A	OA	Other Ambulatory Visit
31	Skilled Nursing Facility. A facility which primarily provides inpatient skilled nursing care and related services to patients who require medical, nursing, or rehabilitative services but does not provide the level of care or treatment available in a hospital.	OA	Other Ambulatory Visit

POS_CD		EncType	
Value	**Description**	**Value**	**Description**
32	Nursing Facility. A facility which primarily provides to residents skilled nursing care and related services for the rehabilitation of injured, disabled, or sick persons, or, on a regular basis, health-related care services above the level of custodial care to other than mentally retarded individuals.	OA	Other Ambulatory Visit
33	Custodial Care Facility. A facility which provides room, board and other personal assistance services, generally on a long-term basis, and which does not include a medical component.	OA	Other Ambulatory Visit
34	Hospice. A facility, other than a patient's home, in which palliative and supportive care for terminally ill patients and their families are provided.	OA	Other Ambulatory Visit
35-40	Unassigned. N/A	OA	Other Ambulatory Visit
41	Ambulance — Land. A land vehicle specifically designed, equipped and staffed for lifesaving and transporting the sick or injured.	OA	Other Ambulatory Visit
42	Ambulance — Air or Water. An air or water vehicle specifically designed, equipped and staffed for lifesaving and transporting the sick or injured.	OA	Other Ambulatory Visit
43-48	Unassigned. N/A	OA	Other Ambulatory Visit
49	Independent Clinic. A location, not part of a hospital and not described by any other Place of Service code, that is organized and operated to provide preventive, diagnostic, therapeutic, rehabilitative, or palliative services to outpatients only. (effective 10/1/03)	AV	Ambulatory Visit
50	Fed Qualified Health Center. A facility located in a medically underserved area that provides Medicare beneficiaries preventive primary medical care under the general direction of a physician.	AV	Ambulatory Visit
51	Inpatient Psych Facility. A facility that provides inpatient psychiatric services for the diagnosis and treatment of mental illness on a 24-hour basis, by or under the supervision of a physician.	AV	Ambulatory Visit
52	Psychiatric Facility — Partial Hospitalization. A facility for the diagnosis and treatment of mental illness that provides a planned therapeutic program for patients who do not require full time hospitalization, but who need broader programs than are possible from outpatient visits to a hospital-based or hospital-affiliated facility.	AV	Ambulatory Visit

POS_CD Value	POS_CD Description	EncType Value	EncType Description
53	Community Mental Health Center. A facility that provides the following services: outpatient services, including specialized outpatient services for children, the elderly, individuals who are chronically ill, and residents of the CMHC's mental health services area who have been discharged from inpatient treatment at a mental health facility; 24 hours a day emergency care services; day treatment, other partial hospitalization services, or psychosocial rehabilitation services; screening for patients being considered for admission to State mental health facilities to determine the appropriateness of such admission; and consultation and education services.	AV	Ambulatory Visit
54	Intermediate Care/Mentally Retarded Facility. A facility which primarily provides health-related care and services above the level of custodial care to mentally retarded individuals but does not provide the level of care or treatment available in a hospital or SNF.	OA	Other Ambulatory Visit
55	Residential Substance Abuse Treatment Facility. A facility which provides treatment for substance (alcohol and drug) abuse to live-in residents who do not require acute medical care. Services include individual and group therapy and counseling, family counseling, laboratory tests, drugs and supplies, psychological testing, and room and board.	OA	Other Ambulatory Visit
56	Psychiatric Residential Treatment Center. A facility or distinct part of a facility for psychiatric care which provides a total 24-hour therapeutically planned and professionally staffed group living and learning environment.	OA	Other Ambulatory Visit
57	Non-residential Substance Abuse Treatment Facility. A location which provides treatment for substance (alcohol and drug) abuse on an ambulatory basis. Services include individual and group therapy and counseling, family counseling, laboratory tests, drugs and supplies, and psychological testing.	OA	Other Ambulatory Visit
58-59	Unassigned. N/A	OA	Other Ambulatory Visit
60	Mass Immunization Center. A location where providers administer pneumococcal pneumonia and influenza virus vaccinations and submit these services as electronic media claims, paper claims, or using the roster billing method. This generally takes place in a mass immunization setting, such as, a public health center, pharmacy, or mall but may include a physician office setting.	OA	Other Ambulatory Visit

POS_CD Value	POS_CD Description	EncType Value	EncType Description
61	Comprehensive Inpatient Rehabilitation Facility. A facility that provides comprehensive rehabilitation services under the supervision of a physician to inpatients with physical disabilities. Services include physical therapy, occupational therapy, speech pathology, social or psychological services, and orthotics and prosthetics services.	OA	Other Ambulatory Visit
62	Comprehensive Outpatient Rehabilitation Facility. A facility that provides comprehensive rehabilitation services under the supervision of a physician to outpatients with physical disabilities. Services include physical therapy, occupational therapy, and speech pathology services.	OA	Other Ambulatory Visit
63-64	Unassigned. N/A	OA	Other Ambulatory Visit
65	End-Stage Renal Disease Treatment Facility. A facility other than a hospital, which provides dialysis treatment, maintenance, and/or training to patients or caregivers on an ambulatory or home-care basis.	OA	Other Ambulatory Visit
66-70	Unassigned. N/A	OA	Other Ambulatory Visit
71	Public Health Clinic. A facility maintained by either State or local health departments that provides ambulatory primary medical care under the general direction of a physician.	AV	Ambulatory Visit
72	Rural Health Clinic. A certified facility which is located in a rural medically underserved area that provides ambulatory primary medical care under the general direction of a physician.	AV	Ambulatory Visit
73-80	Unassigned. N/A	OA	Other Ambulatory Visit
81	Independent Laboratory. A laboratory certified to perform diagnostic and/or clinical tests independent of an institution or a physician's office.	OA	Other Ambulatory Visit
82-98	Unassigned. N/A	OA	Other Ambulatory Visit
99	Other Place of Service. Other place of service not identified above.	OA	Other Ambulatory Visit

*This table is provided unedited from the CMS TAF Claims RIFs Codebook, version 1.6.

Table 28. Field-specific mapping of second digit of BILL_TYPE_CD [Medicaid/CHIP] to EncType [SCDM]

BILL_TYPE_CD		EncType	
Value	**Description**	**Value**	**Description**
NULL	<null>	AV	Ambulatory Visit
1	Hospital	AV	Ambulatory Visit
2	Skilled nursing	OA	Other Ambulatory Visit
3	Home health	OA	Other Ambulatory Visit
4	Religious nonmedical (hospital)	AV	Ambulatory Visit
6	Intermediate care	AV	Ambulatory Visit
7	Clinic- or hospital-based renal dialysis facility	AV	Ambulatory Visit
8	Special facility or hospital ambulatory surgical center (ASC) surgery	AV	Ambulatory Visit

Table 29. List of Medicaid/CHIP revenue center codes

REV_CNTR_CD	
Value	**Description**
NULL	<null>
0001	Total charge
0022	SNF claim paid under PPS submitted as type of bill (TOB) 21X. NOTE: This code may appear multiple times on a claim to identify different HIPPS Rate Code/assessment periods.
0023	Home Health services paid under PPS submitted as TOB 32X and 33X, effective 10/00. This code may appear multiple times on a claim to identify different HIPPS/Home Health Resource Groups (HRG).
0024	Inpatient Rehabilitation Facility services paid under PPS submitted as TOB 11X, effective for cost reporting periods beginning on or after 1/1/2002 (dates of service after 12/31/01). This code may appear only once on a claim.
0100	All-inclusive rate — room and board plus ancillary
0101	All-inclusive rate — room and board
0110	Private medical or general — general classification
0111	Private medical or general — medical/surgical/GYN
0112	Private medical or general — OB
0113	Private medical or general — pediatric
0114	Private medical or general — psychiatric
0115	Private medical or general — hospice
0116	Private medical or general — detoxification
0117	Private medical or general — oncology

REV_CNTR_CD Value	Description
0118	Private medical or general — rehabilitation
0119	Private medical or general — other
0120	Semi-private 2 bed (medical or general) general classification
0121	Semi-private 2 bed (medical or general) medical/surgical/GYN
0122	Semi-private 2 bed (medical or general) — OB
0123	Semi-private 2 bed (medical or general) — pediatric
0124	Semi-private 2 bed (medical or general) — psychiatric
0125	Semi-private 2 bed (medical or general) — hospice
0126	Semi-private 2 bed (medical or general) — detoxification
0127	Semi-private 2 bed (medical or general) — oncology
0128	Semi-private 2 bed (medical or general) — rehabilitation
0129	Semi-private 2 bed (medical or general) — other
0130	Semi-private 3 and 4 beds — general classification
0131	Semi-private 3 and 4 beds — medical/surgical/GYN
0132	Semi-private 3 and 4 beds — OB
0133	Semi-private 3 and 4 beds — pediatric
0134	Semi-private 3 and 4 beds — psychiatric
0135	Semi-private 3 and 4 beds — hospice
0136	Semi-private 3 and 4 beds — detoxification
0137	Semi-private 3 and 4 beds — oncology
0138	Semi-private 3 and 4 beds — rehabilitation
0139	Semi-private 3 and 4 beds — other
0140	Private (deluxe) — general classification
0141	Private (deluxe) — medical/surgical/GYN
0142	Private (deluxe) — OB
0143	Private (deluxe) — pediatric
0144	Private (deluxe) — psychiatric
0145	Private (deluxe) — hospice
0146	Private (deluxe) — detoxification
0147	Private (deluxe) — oncology
0148	Private (deluxe) — rehabilitation
0149	Private (deluxe) — other
0150	Room & Board ward (medical or general) — general classification

REV_CNTR_CD Value	Description
0151	Room & Board ward (medical or general) — medical/surgical/GYN
0152	Room & Board ward (medical or general) — OB
0153	Room & Board ward (medical or general) — pediatric
0154	Room & Board ward (medical or general) — psychiatric
0155	Room & Board ward (medical or general) — hospice
0156	Room & Board ward (medical or general) — detoxification
0157	Room & Board ward (medical or general) — oncology
0158	Room & Board ward (medical or general) — rehabilitation
0159	Room & Board ward (medical or general) — other
0160	Other Room & Board — general classification
0164	Other Room & Board — sterile environment
0167	Other Room & Board — self care
0169	Other Room & Board — other
0170	Nursery — general classification
0171	Nursery — newborn level I (routine)
0172	Nursery — premature newborn-level II (continuing care)
0173	Nursery — newborn-level III (intermediate care)
0174	Nursery — newborn-level IV (intensive care)
0179	Nursery — other
0180	Leave of absence — general classification
0182	Leave of absence — patient convenience charges billable
0183	Leave of absence — therapeutic leave
0184	Leave of absence — ICF mentally retarded-any reason
0185	Leave of absence — nursing home (hospitalization)
0189	Leave of absence — other leave of absence
0190	Subacute care — general classification
0191	Subacute care — level I
0192	Subacute care — level II
0193	Subacute care — level III
0194	Subacute care — level IV
0199	Subacute care — other
0200	Intensive care — general classification
0201	Intensive care — surgical

REV_CNTR_CD Value	Description
0202	Intensive care — medical
0203	Intensive care — pediatric
0204	Intensive care — psychiatric
0206	Intensive care — post ICU; redefined as intermediate ICU
0207	Intensive care — burn care
0208	Intensive care — trauma
0209	Intensive care — other intensive care
0210	Coronary care — general classification
0211	Coronary care — myocardial infraction
0212	Coronary care — pulmonary care
0213	Coronary care — heart transplant
0214	Coronary care — post CCU; redefined as intermediate CCU
0219	Coronary care — other coronary care
0220	Special charges — general classification
0221	Special charges — admission charge
0222	Special charges — technical support charge
0223	Special charges — UR service charge
0224	Special charges — late discharge, medically necessary
0229	Special charges — other special charges
0230	Incremental nursing charge rate — general classification
0231	Incremental nursing charge rate — nursery
0232	Incremental nursing charge rate — OB
0233	Incremental nursing charge rate — ICU (include transitional care)
0234	Incremental nursing charge rate — CCU (include transitional care)
0235	Incremental nursing charge rate — hospice
0239	Incremental nursing charge rate — other
0240	All-inclusive ancillary — general classification
0241	All-inclusive ancillary — basic
0242	All-inclusive ancillary — comprehensive
0243	All-inclusive ancillary —specialty
0249	All-inclusive ancillary — other inclusive ancillary
0250	Pharmacy — general classification
0251	Pharmacy — generic drugs

REV_CNTR_CD Value	Description
0252	Pharmacy — nongeneric drugs
0253	Pharmacy — take home drugs
0254	Pharmacy — drugs incident to other diagnostic service-subject to payment limit
0255	Pharmacy — drugs incident to radiology-subject to payment limit
0256	Pharmacy — experimental drugs
0257	Pharmacy — non-prescription
0258	Pharmacy — IV solutions
0259	Pharmacy — other pharmacy
0260	IV therapy — general classification
0261	IV therapy — infusion pump
0262	IV therapy — pharmacy services
0263	IV therapy — drug supply/delivery
0264	IV therapy — supplies
0269	IV therapy — other IV therapy
0270	Medical/surgical supplies — general classification (also see 062X)
0271	Medical/surgical supplies — nonsterile supply
0272	Medical/surgical supplies — sterile supply
0273	Medical/surgical supplies — take home supplies
0274	Medical/surgical supplies — prosthetic/orthotic devices
0275	Medical/surgical supplies — pace maker
0276	Medical/surgical supplies — intraocular lens
0277	Medical/surgical supplies — oxygen-take home
0278	Medical/surgical supplies — other implants
0279	Medical/surgical supplies — other devices
0280	Oncology — general classification
0289	Oncology — other oncology
0290	DME (other than renal) — general classification
0291	DME (other than renal) — rental
0292	DME (other than renal) — purchase of new DME
0293	DME (other than renal) — purchase of used DME
0294	DME (other than renal) — related to and listed as DME
0299	DME (other than renal) — other
0300	Laboratory — general classification

REV_CNTR_CD Value	Description
0301	Laboratory — chemistry
0302	Laboratory — immunology
0303	Laboratory — renal patient (home)
0304	Laboratory — non-routine dialysis
0305	Laboratory — hematology
0306	Laboratory — bacteriology & microbiology
0307	Laboratory — urology
0309	Laboratory — other laboratory
0310	Laboratory pathological — general classification
0311	Laboratory pathological — cytology
0312	Laboratory pathological — histology
0314	Laboratory pathological — biopsy
0319	Laboratory pathological — other
0320	Radiology diagnostic — general classification
0321	Radiology diagnostic — angiocardiography
0322	Radiology diagnostic — arthrography
0323	Radiology diagnostic — arteriography
0324	Radiology diagnostic — chest X-ray
0329	Radiology diagnostic — other
0330	Radiology therapeutic — general classification
0331	Radiology therapeutic — chemotherapy injected
0332	Radiology therapeutic — chemotherapy oral
0333	Radiology therapeutic — radiation therapy
0335	Radiology therapeutic — chemotherapy IV
0339	Radiology therapeutic — other
0340	Nuclear medicine — general classification
0341	Nuclear medicine — diagnostic
0342	Nuclear medicine — therapeutic
0349	Nuclear medicine — other
0350	Computed tomographic (CT) scan-general classification
0351	CT scan-head scan
0352	CT scan-body scan
0359	CT scan-other CT scans

REV_CNTR_CD Value	Description
0360	Operating room services — general classification
0361	Operating room services — minor surgery
0362	Operating room services — organ transplant, other than kidney
0367	Operating room services — kidney transplant
0369	Operating room services — other operating room services
0370	Anesthesia — general classification
0371	Anesthesia — incident to RAD and subject to the payment limit
0372	Anesthesia — incident to other diagnostic service and subject to the payment limit
0374	Anesthesia — acupuncture
0379	Anesthesia — other anesthesia
0380	Blood — general classification
0381	Blood — packed red cells
0382	Blood — whole blood
0383	Blood — plasma
0384	Blood — platelets
0385	Blood — leukocytes
0386	Blood — other components
0387	Blood — other derivatives (cryoprecipitates)
0389	Blood — other blood
0390	Blood — storage and processing-general classification
0391	Blood — storage and processing-blood administration
0399	Blood — storage and processing-other
0400	Other imaging services — general classification
0401	Other imaging services — diagnostic mammography
0402	Other imaging services — ultrasound
0403	Other imaging services — screening mammography
0404	Other imaging services — positron emission tomography
0409	Other imaging services — other
0410	Respiratory services — general classification
0412	Respiratory services — inhalation services
0413	Respiratory services — hyperbaric oxygen therapy
0419	Respiratory services — other
0420	Physical therapy — general classification

REV_CNTR_CD Value	Description
0421	Physical therapy — visit charge
0422	Physical therapy — hourly charge
0423	Physical therapy — group rate
0424	Physical therapy — evaluation or re-evaluation
0429	Physical therapy — other
0430	Occupational therapy — general classification
0431	Occupational therapy — visit charge
0432	Occupational therapy — hourly charge
0433	Occupational therapy — group rate
0434	Occupational therapy — evaluation or re-evaluation
0439	Occupational therapy — other (may include restorative therapy)
0440	Speech language pathology — general classification
0441	Speech language pathology — visit charge
0442	Speech language pathology — hourly charge
0443	Speech language pathology — group rate
0444	Speech language pathology — evaluation or re-evaluation
0449	Speech language pathology — other
0450	Emergency room — general classification
0451	Emergency room — EMTALA emergency medical screening services
0452	Emergency room — ER beyond EMTALA screening
0456	Emergency room — urgent care
0459	Emergency room — other
0460	Pulmonary function — general classification
0469	Pulmonary function — other
0470	Audiology — general classification
0471	Audiology — diagnostic
0472	Audiology — treatment
0479	Audiology — other
0480	Cardiology — general classification
0481	Cardiology — cardiac cath lab
0482	Cardiology — stress test
0483	Cardiology — Echocardiology
0489	Cardiology — other

REV_CNTR_CD Value	Description
0490	Ambulatory surgical care — general classification
0499	Ambulatory surgical care — other
0500	Outpatient services — general classification
0509	Outpatient services — other
0510	Clinic — general classification
0511	Clinic — chronic pain center
0512	Clinic — dental center
0513	Clinic — psychiatric
0514	Clinic — OB-GYN
0515	Clinic — pediatric
0516	Clinic — urgent care clinic
0517	Clinic — family practice clinic
0519	Clinic — other
0520	Free-standing clinic — general classification
0521	Free-standing clinic — Clinic visit by a member to RHC/FQHC (eff. 7/1/06). Prior to 7/1/06 — Rural Health-Clinic
0522	Free-standing clinic — Home visit by RHC/FQHC practitioner (eff. 7/1/06). Prior to 7/1/06 — Rural Health-Home
0523	Free-standing clinic — family practice
0524	Free-standing clinic — visit by RHC/FQHC practitioner to a member in a covered Part A stay at the SNF. (eff. 7/1/06)
0525	Free-standing clinic — visit by RHC/FQHC practitioner to a member in a SNF (not in a covered Part A stay) or NF or ICF MR or other residential facility. (eff. 7/1/06)
0526	Free-standing clinic — urgent care (eff 10/96)
0527	Free-standing clinic — RHC/FQHC visiting nurse service(s) to a member's home when in a home health shortage area. (eff. 7/1/06)
0528	Free-standing clinic — visit by RHC/FQHC practitioner to other non-RHC/FQHC site (e.g. scene of accident). (eff. 7/1/06)
0529	Free-standing clinic — other
0530	Osteopathic services — general classification
0531	Osteopathic services — osteopathic therapy
0539	Osteopathic services — other
0540	Ambulance — general classification
0541	Ambulance — supplies

REV_CNTR_CD Value	Description
0542	Ambulance — medical transport
0543	Ambulance — heart mobile
0544	Ambulance — oxygen
0545	Ambulance — air ambulance
0546	Ambulance — neo-natal ambulance
0547	Ambulance — pharmacy
0548	Ambulance — telephone transmission EKG
0549	Ambulance — other
0550	Skilled nursing — general classification
0551	Skilled nursing — visit charge
0552	Skilled nursing — hourly charge
0559	Skilled nursing — other
0560	Medical social services — general classification
0561	Medical social services — visit charge
0562	Medical social services — hourly charges
0569	Medical social services — other
0570	Home health aid (home health) — general classification
0571	Home health aid (home health) — visit charge
0572	Home health aid (home health) — hourly charge
0579	Home health aid (home health) — other
0580	Other visits (home health) — general classification (under HHPPS, not allowed as covered charges)
0581	Other visits (home health) — visit charge (under HHPPS, not allowed as covered charges)
0582	Other visits (home health) — hourly charge (under HHPPS, not allowed as covered charges)
0589	Other visits (home health) — other (under HHPPS, not allowed as covered charges)
0590	Units of service (home health) — general classification (under HHPPS, not allowed as covered charges)
0599	Units of service (home health) — other (under HHPPS, not allowed as covered charges)
0600	Oxygen/Home Health — general classification
0601	Oxygen/Home Health — stat or port equip/supply or count
0602	Oxygen/Home Health — stat/equip/under 1 LPM
0603	Oxygen/Home Health — stat/equip/over 4 LPM
0604	Oxygen/Home Health — stat/equip/portable add-on
0610	Magnetic resonance technology (MRT) — general classification
0611	MRT/MRI — brain (including brainstem)

REV_CNTR_CD Value	Description
0612	MRT/MRI — spinal cord (including spine)
0614	MRT/MRI — other
0615	MRT/MRA — Head and Neck
0616	MRT/MRA — Lower Extremities
0618	MRT/MRA — other
0619	MRT/Other MRI
0621	Medical/surgical supplies-incident to radiology-subject to the payment limit — extension of 027X
0622	Medical/surgical supplies-incident to other diagnostic service-subject to the payment limit — extension of 027X
0623	Medical/surgical supplies-surgical dressings — extension of 027X
0624	Medical/surgical supplies-medical investigational devices and procedures with FDA approved IDE's — extension of 027X
0630	Reserved
0631	Drugs requiring specific identification — single drug source
0632	Drugs requiring specific identification — multiple drug source
0633	Drugs requiring specific identification — restrictive prescription
0634	Drugs requiring specific identification — EPO under 10,000 units
0635	Drugs requiring specific identification — EPO 10,000 units or more
0636	Drugs requiring specific identification — detailed coding
0637	Self-administered drugs administered in an emergency situation — not requiring detailed coding
0640	Home IV therapy — general classification
0641	Home IV therapy — nonroutine nursing
0642	Home IV therapy — IV site care, central line
0643	Home IV therapy — IV start/change peripheral line
0644	Home IV therapy — nonroutine nursing, peripheral line
0645	Home IV therapy — train patient/caregiver, central line
0646	Home IV therapy — train disabled patient, central line
0647	Home IV therapy — train patient/caregiver, peripheral line
0648	Home IV therapy — train disabled patient, peripheral line
0649	Home IV therapy — other IV therapy services
0650	Hospice services — general classification
0651	Hospice services — routine home care
0652	Hospice services — continuous home care-1/2

REV_CNTR_CD Value	Description
0655	Hospice services — inpatient care
0656	Hospice services — general inpatient care (non-respite)
0657	Hospice services — physician services
0659	Hospice services — other
0660	Respite care (HHA) — general classification
0661	Respite care (HHA) — hourly charge/skilled nursing
0662	Respite care (HHA) — hourly charge/home health aide/homemaker
0670	OP special residence charges — general classification
0671	OP special residence charges — hospital based
0672	OP special residence charges — contracted
0679	OP special residence charges — other special residence charges
0700	Cast room — general classification
0709	Cast room — other
0710	Recovery room — general classification
0719	Recovery room — other
0720	Labor room/delivery — general classification
0721	Labor room/delivery — labor
0722	Labor room/delivery — delivery
0723	Labor room/delivery — circumcision
0724	Labor room/delivery — birthing center
0729	Labor room/delivery — other
0730	EKG/ECG — general classification
0731	EKG/ECG — Holter monitor
0732	EKG/ECG — telemetry
0739	EKG/ECG — other
0740	EEG — general classification
0749	EEG (electroencephalogram) — other
0750	Gastro-intestinal services — general classification
0759	Gastro-intestinal services — other
0760	Treatment or observation room — general classification
0761	Treatment or observation room — treatment room
0762	Treatment or observation room — observation room
0769	Treatment or observation room — other

REV_CNTR_CD Value	Description
0770	Preventative care services — general classification
0771	Preventative care services — vaccine administration
0779	Preventative care services — other
0780	Telemedicine — general classification
0789	Telemedicine — telemedicine
0790	Lithotripsy — general classification
0799	Lithotripsy — other
0800	Inpatient renal dialysis — general classification
0801	Inpatient renal dialysis — inpatient hemodialysis
0802	Inpatient renal dialysis — inpatient peritoneal (non-CAPD)
0803	Inpatient renal dialysis — inpatient CAPD
0804	Inpatient renal dialysis — inpatient CCPD
0809	Inpatient renal dialysis — other inpatient dialysis
0810	Organ acquisition — general classification
0811	Organ acquisition — living donor
0812	Organ acquisition —cadaver donor
0813	Organ acquisition — unknown donor
0814	Organ acquisition — unsuccessful organ search-donor bank charges
0815	Allogeneic Stem Cell Acquisition/Donor Services
0819	Organ acquisition — other donor
0820	Hemodialysis OP or home dialysis — general classification
0821	Hemodialysis OP or home dialysis — hemodialysis-composite or other rate
0822	Hemodialysis OP or home dialysis — home supplies
0823	Hemodialysis OP or home dialysis — home equipment
0824	Hemodialysis OP or home dialysis — maintenance/100%
0825	Hemodialysis OP or home dialysis — support services
0829	Hemodialysis OP or home dialysis — other
0830	Peritoneal dialysis OP or home — general classification
0831	Peritoneal dialysis OP or home-peritoneal — composite or other rate
0832	Peritoneal dialysis OP or home — home supplies
0833	Peritoneal dialysis OP or home — home equipment
0834	Peritoneal dialysis OP or home — maintenance/100%
0835	Peritoneal dialysis OP or home — support services

REV_CNTR_CD Value	Description
0839	Peritoneal dialysis OP or home — other
0840	CAPD outpatient — general classification
0841	CAPD outpatient — CAPD/composite or other rate
0842	CAPD outpatient — home supplies
0843	CAPD outpatient — home equipment
0844	CAPD outpatient — maintenance/100%
0845	CAPD outpatient — support services
0849	CAPD outpatient — other
0850	CCPD outpatient — general classification
0851	CCPD outpatient — CCPD/composite or other rate
0852	CCPD outpatient — home supplies
0853	CCPD outpatient — home equipment
0854	CCPD outpatient — maintenance/100%
0855	CCPD outpatient — support services
0859	CCPD outpatient — other
0880	Miscellaneous dialysis — general classification
0881	Miscellaneous dialysis — ultrafiltration
0882	Miscellaneous dialysis — home dialysis aide visit
0889	Miscellaneous dialysis — other
0890	Other donor bank-general classification; changed to reserved for national assignment
0891	Other donor bank — bone; changed to reserved for national assignment
0892	Other donor bank — organ (other than kidney); changed to reserved for national assignment
0893	Other donor bank — skin; changed to reserved for national assignment
0899	Other donor bank — other; changed to reserved for national assignment
0900	Behavior Health Treatment/Services — general classification (eff. 10/2004); prior to 10/2004 defined as Psychiatric/psychological treatments-general classification
0901	Behavior Health Treatment/Services — electroshock treatment (eff. 10/2004); prior to 10/2004 defined as Psychiatric/psychological treatments-electroshock treatment
0902	Behavior Health Treatment/Services — milieu therapy (eff. 10/2004); prior to 10/2004 defined as Psychiatric/psychological treatments- milieu therapy
0903	Behavior Health Treatment/Services — play therapy (eff. 10/2004); prior to 10/2004 defined as Psychiatric/psychological treatments- play therapy
0904	Behavior Health Treatment/Services — activity therapy (eff. 10/2004); prior to 10/2004 defined as

REV_CNTR_CD Value	Description
	Psychiatric/psychological treatments- activity therapy
0905	Behavior Health Treatment/Services — intensive outpatient services- psychiatric (eff. 10/2004)
0906	Behavior Health Treatment/Services — intensive outpatient services-chemical dependency (eff. 10/2004)
0907	Behavior Health Treatment/Services — community behavioral health program-day treatment (eff. 10/2004)
0909	Reserved for National Use (eff. 10/2004); prior to 10/2004 defined as Psychiatric/psychological treatments-other
0910	Behavioral Health Treatment/Services — Reserved for National Assignment (eff. 10/2004); prior to 10/2004 defined as Psychiatric/ psychological services-general classification
0911	Behavioral Health Treatment/Services — rehabilitation (eff. 10/2004); prior to 10/2004 defined as Psychiatric/psychological services-rehabilitation
0912	Behavioral Health Treatment/Services — partial hospitalization-less intensive (eff. 10/2004); prior to 10/2004 defined as Psychiatric/ psychological services-less intensive
0913	Behavioral Health Treatment/Services — partial hospitalization-intensive (eff. 10/2004); prior to 10/2004 defined as Psychiatric/psychological services-intensive
0914	Behavioral Health Treatment/Services — individual therapy (eff. 10/2004)prior to 10/2004 defined as Psychiatric/psychological services-individual therapy
0915	Behavioral Health Treatment/Services — group therapy (eff. 10/2004); prior to 10/2004 defined as Psychiatric/psychological services-group therapy
0916	Behavioral Health Treatment/Services — family therapy (eff. 10/2004); prior to 10/2004 defined as Psychiatric/psychological services-family therapy
0917	Behavioral Health Treatment/Services — biofeedback (eff. 10/2004); prior to 10/2004 defined as Psychiatric/psychological services-biofeedback
0918	Behavioral Health Treatment/Services — testing (eff. 10/2004); prior to 10/2004 defined as Psychiatric/psychological services-testing
0919	Behavioral Health Treatment/Services — other (eff. 10/2004); prior to 10/2004 defined as Psychiatric/psychological services-other
0920	Other diagnostic services — general classification
0921	Other diagnostic services — peripheral vascular lab
0922	Other diagnostic services — electromyelogram
0923	Other diagnostic services — pap smear
0924	Other diagnostic services — allergy test
0925	Other diagnostic services — pregnancy test
0929	Other diagnostic services — other
0931	Medical Rehabilitation Day Program — Half Day

REV_CNTR_CD Value	Description
0932	Medical Rehabilitation Day Program — Full Day
0940	Other therapeutic services — general classification
0941	Other therapeutic services — recreational therapy
0942	Other therapeutic services — education/training (include diabetes diet training)
0943	Other therapeutic services — cardiac rehabilitation
0944	Other therapeutic services — drug rehabilitation
0945	Other therapeutic services — alcohol rehabilitation
0946	Other therapeutic services — routine complex medical equipment
0947	Other therapeutic services — ancillary complex medical equipment
0949	Other therapeutic services — other
0951	Professional Fees — athletic training (extension of 094X)
0952	Professional Fees — kinesiotherapy (extension of 094X)
0960	Professional fees — general classification
0961	Professional fees — psychiatric
0962	Professional fees — ophthalmology
0963	Professional fees — anesthesiologist (MD)
0964	Professional fees — anesthetist (CRNA)
0969	Professional fees — other (NOTE: 097X is an extension of 096X)
0971	Professional fees — laboratory
0972	Professional fees — radiology diagnostic
0973	Professional fees — radiology therapeutic
0974	Professional fees — nuclear medicine
0975	Professional fees — operating room
0976	Professional fees — respiratory therapy
0977	Professional fees — physical therapy
0978	Professional fees — occupational therapy
0979	Professional fees — speech pathology (NOTE: 098X is an extension of 096X & 097X)
0981	Professional fees — emergency room
0982	Professional fees — outpatient services
0983	Professional fees — clinic
0984	Professional fees — medical social services
0985	Professional fees — EKG
0986	Professional fees — EEG

REV_CNTR_CD Value	Description
0987	Professional fees — hospital visit
0988	Professional fees — consultation
0989	Professional fees — private duty nurse
0990	Patient convenience items — general classification
0991	Patient convenience items — cafeteria/guest tray
0992	Patient convenience items — private linen service
0993	Patient convenience items — telephone/telegraph
0994	Patient convenience items —tv/radio
0995	Patient convenience items — nonpatient room rentals
0996	Patient convenience items — late discharge charge
0997	Patient convenience items — admission kits
0998	Patient convenience items — beauty shop/barber
0999	Patient convenience items — other
1000	Behavioral health Accommodations — general
1001	Behavioral health Accommodations — residential treatment psychiatric
1002	Behavioral health Accommodations — residential treatment chemical dependency
2101	Alternative Therapy Services — Acupuncture
2103	Alternative Therapy Services — Massage
3101	Adult Day Care — Medical and Social (hourly)
3103	Adult Day Care — Medical and Social (daily)
3104	Adult Day Care — Social (daily)
3109	Adult Day Care — other

*This table is provided unedited from the CMS TAF Claims RIFs Codebook, version 1.6.

Appendix A: DQ Atlas Topic Importance

TAF Memo Table	DQ Atlas Category	DQ Atlas Topic	Poor Data Quality for ETL3
6	Enrollment Benchmarking	CMC Plans	Not used for exclusion
6	Enrollment Benchmarking	PCCM Programs	Not used for exclusion
6	Enrollment Benchmarking	BHO Plans	Not used for exclusion
6	Enrollment Benchmarking	M-CHIP and S-CHIP	Not used for exclusion
6	Enrollment Benchmarking	Adult Expansion	Not used for exclusion
6	Enrollment Benchmarking	Newly Eligible Adult	Not used for exclusion
6	Enrollment Benchmarking	Total Medicaid and CHIP	Not used for exclusion
6	Enrollment Benchmarking	Medicaid-Only Enrollment	Not used for exclusion
6	Enrollment Benchmarking	Dually Enrolled in Medicare	Not used for exclusion
	Enrollment Benchmarking	1915(c) Participation	Not used for exclusion
	Enrollment Benchmarking	SSI Participation	Not used for exclusion
	Enrollment Benchmarking	1115 Demonstration Identification	Not used for exclusion
7	Enrollment over Time	Number of Enrollment Spans	**Used with original methodology**
7	Enrollment over Time	Length of Enrollment Gaps	**Used for exclusion**
7	Enrollment over Time	Overlapping Enrollment Spans	**Used for exclusion**
8	Demographics	Gender	Not used for exclusion
8	Demographics	Age	Not used for exclusion
8	Demographics	ZIP Code	Not used for exclusion
8	Demographics	Race and Ethnicity	Not used for exclusion
8	Demographics	Income	Not used for exclusion
	Demographics	Primary Language	Not used for exclusion
	Demographics	English Language Proficiency	Not used for exclusion
8	Eligibility Codes	Dual Eligibility Code	**Used for exclusion**
8	Eligibility Codes	Restricted Benefits Code	**Used for exclusion**
8	Eligibility Codes	CHIP Code	Not used for exclusion
8	Eligibility Codes	Eligibility Group Code	Not used for exclusion
9	Claim File Completeness	Benchmarking Inpatient Stays	Not used for exclusion
9	Claim File Completeness	Service Users – IP	**Used for exclusion**
9	Claim File Completeness	Service Users – OT	**Used for exclusion**
9	Claim File Completeness	Service Users – RX	**Used for exclusion**

TAF Memo Table	DQ Atlas Category	DQ Atlas Topic	Poor Data Quality for ETL3
9	Claim File Completeness	Claims Volume – IP	**Used for exclusion**
9	Claim File Completeness	Claims Volume – LT	**Used for exclusion**
9	Claim File Completeness	Claims Volume – OT	**Used for exclusion**
9	Claim File Completeness	Claims Volume – RX	**Used for exclusion**
9	Claim File Completeness	CMC Plan Encounters – IP	**Used for exclusion**
9	Claim File Completeness	CMC Plan Encounters – LT	**Used for exclusion**
9	Claim File Completeness	CMC Plan Encounters – OT	**Used for exclusion**
9	Claim File Completeness	CMC Plan Encounters – RX	**Used for exclusion**
	Claim File Completeness	Availability of CMC Plan Encounter Data	**Used for exclusion**
10	Service Use Information	Bill Types – IP	Not used for exclusion
10	Service Use Information	Bill Types – LT	Not used for exclusion
10	Service Use Information	Bill Types – OT	Not used for exclusion
10	Service Use Information	Generic Indicator – RX	Not used for exclusion
10	Service Use Information	Admission Dates – IP	**Used for exclusion**
10	Service Use Information	Admission Dates – LT	**Used for exclusion**
10	Service Use Information	Discharge Dates – IP	**Used for exclusion**
10	Service Use Information	Discharge Dates – LT	Not used for exclusion
10	Service Use Information	Diagnosis Codes – IP	**Used for exclusion**
10	Service Use Information	Diagnosis Codes – LT	**Used for exclusion**
10	Service Use Information	Diagnosis Codes – OT	**Used for exclusion**
10	Service Use Information	Types of Service – IP	Not used for exclusion
10	Service Use Information	Types of Service – LT	Not used for exclusion
10	Service Use Information	Types of Service – OT	Not used for exclusion
10	Service Use Information	Types of Service – RX	Not used for exclusion
10	Service Use Information	Place of Service	Not used for exclusion
10	Service Use Information	Procedure Codes – IP	**Used for exclusion**
10	Service Use Information	Procedure Codes – OT Professional	**Used for exclusion**
10	Service Use Information	Procedure Codes – OT Institutional	Not used for exclusion
	Service Use Information	National Drug Code	**Used for exclusion**
	Service Use Information	Days' Supply, Quantity, and Units	Not used for exclusion
11	Provider Information	Hospital Type	Not used for exclusion
11	Provider Information	Provider NPIs: Servicing Provider	Not used for exclusion
11	Provider Information	Provider NPIs: Prescribing Provider	Not used for exclusion

TAF Memo Table	DQ Atlas Category	DQ Atlas Topic	Poor Data Quality for ETL3
11	Provider Information	Provider NPIs: Dispensing Provider	Not used for exclusion
11	Provider Information	Billing Provider NPIs – IP	Not used for exclusion
11	Provider Information	Billing Provider NPIs – LT	Not used for exclusion
11	Provider Information	Billing Provider NPIs – OT	Not used for exclusion
11	Provider Information	Billing Provider NPIs – RX	Not used for exclusion
11	Provider Information	Billing Provider Types – IP	Not used for exclusion
11	Provider Information	Billing Provider Types – LT	Not used for exclusion
11	Provider Information	Billing Provider Types – OT	Not used for exclusion
	Provider Information	Billing Provider Types – RX	Not used for exclusion
	Provider Information	Servicing Provider Type – OT Professional	Not used for exclusion
	Provider Information	Servicing Provider Type – OT Institutional	Not used for exclusion
	Provider Information	Active Enrollment Status Indicator	Not used for exclusion
	Provider Information	Facility/Group/Individual Code	Not used for exclusion
	Provider Information	Group and Individual Providers - Classification Types	Not used for exclusion
	Provider Information	Facilities - Classification Types	Not used for exclusion
	Provider Information	Facility Characteristics	Not used for exclusion
	Provider Information	Provider Location	Not used for exclusion
	Provider Information	National Provider Identifier	Not used for exclusion
	Managed Care Plans	Managed Care Plan Program and Population Characteristics	Not used for exclusion
	Managed Care Plans	Managed Care Plan Operational Characteristics	Not used for exclusion
	Managed Care Plans	Plan Name and Type	Not used for exclusion
	Linking Across Files	Linking Claims to Beneficiaries	Not used for exclusion
	Linking Across Files	Linking Expenditures to Beneficiaries	Not used for exclusion
	Linking Across Files	Linking Claims to Providers	Not used for exclusion
	Linking Across Files	Linking Beneficiaries to Managed Care Plans	Not used for exclusion

*A missing value in the "TAF Memo Table" column indicates that the metric was not included in the original TAF memo.