CMS
CENTERS FOR MEDICARE & MEDICAID SERVICES

IAP | Medicaid Innovation Accelerator Program

Identifying Medicaid and CHIP Beneficiaries Who Could Benefit from Integrated Physical and Behavioral Health Care

Technical Specifications

January 2023

MACBIS
Medicaid and CHIP
Business Information Solutions

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Contents

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I. Description

These technical specifications provide a description of the general logic for using Medicaid and CHIP medical and pharmacy claims data to identify three populations of beneficiaries who could benefit from different levels of integrated care: (1) beneficiaries who received services for a behavioral health (BH) condition, (2) beneficiaries who received services for a BH condition and also received services for at least one of a number of select physical health (PH) conditions[1] (the subset of population 1; hereafter referred to as those with co-occurring BH and PH conditions), and (3) beneficiaries prescribed medications for a substance use disorder (SUD) who do not have a medical claim for the SUD (subset of population 1; hereafter referred to as "beneficiaries whose SUD service use includes only prescription drugs").

The Physical and Behavioral Health Integration (PBHI) algorithm includes all diagnoses for BH conditions but only selected diagnoses for PH conditions (see Table 1) that tend to be chronic conditions needing ongoing care and frequently co-occur with BH conditions.

Table 1. Behavioral health (BH) and physical health (PH) diagnoses identified by the PBHI algorithm

Behavioral health (BH) conditions[a]		Select physical health (PH) conditions[b]
Mental health (MH) conditions	**Substance use disorders (SUD)**	
Attention deficit hyperactivity disorder (ADHD) Bipolar disorder Depressive disorder Personality disorder Post-traumatic stress disorder (PTSD) Schizophrenia Other mental illnesses	Alcohol Cannabis Caffeine Hallucinogens Inhalants Opioids Sedative, hypnotic, anxiolytic (SHA) Stimulants Tobacco Other SUDs	Acute myocardial infarction (AMI) Arthritis Asthma Colorectal, endometrium, breast, liver, lung, or prostate cancers, and all other cancers Chronic kidney disease Chronic obstructive pulmonary disease (COPD) Chronic pain Diabetes Headache Heart failure Hip/pelvic fracture HIV/AIDS Hyperlipidemia Ischemic heart disease Liver cirrhosis Obesity Stroke Traumatic brain injury Viral hepatitis

[1] The PH conditions evaluated by the algorithm were selected based on a literature review to identify conditions that frequently co-occur with BH conditions.

[a] These populations are not mutually exclusive; beneficiaries can have both an MH disorder and an SUD during the measurement year.

These specifications are designed to use one calendar year of data and to be applied to the following population, referred to as the target population:

- Beneficiaries age 12 and older. Because beneficiaries under age 12 are less likely to receive diagnoses for the BH conditions identified by this algorithm, we suggest restricting beneficiaries to those age 12 and older to avoid underestimates of the rate of BH conditions in the Medicaid and CHIP population.
- Beneficiaries up to age 64 and not dually enrolled in Medicare. We suggest excluding beneficiaries dually enrolled in Medicaid and Medicare because Medicare is the primary payer for acute-care services (including most BH services) for this population. When Medicaid or CHIP is a secondary payer, there may be no record in the Medicaid claims data of the beneficiary receiving either BH or PH services.
- Beneficiaries eligible for full or comprehensive benefits through Medicaid and CHIP. Beneficiaries who qualify for only limited benefits (such as emergency Medicaid or family planning only) are unlikely to receive Medicaid- or CHIP-funded BH treatment regardless of need.
- Beneficiaries enrolled for at least 11 months of the calendar year. For beneficiaries with gaps in enrollment, the data may not capture all service use during the year.

II. Logic overview

These technical specifications are designed to be used with the T-MSIS Analytic File (TAF) Research Identifiable File (RIF) data. They lay out a ten-step algorithm described in Table 2 below for identifying the three populations of beneficiaries who could benefit from some level of integrated care. For each step, we provide the relevant data files needed, the logic and purpose for the step, and information about how to implement the step in the TAF RIF. The algorithm relies on the TAF Demographic and Eligibility (DE), inpatient (IP), long-term care (LT), other services (OT), and prescription drug (RX) files.

To identify the target population, users should identify all MH, SUD, or PH treatment claims for beneficiaries who meet the selection criteria described above. To identify claims for MH, SUD, and/or PH treatment, the algorithm requires (1) a diagnosis code indicating an MH, SUD, and/or PH condition (see Table 1 for diagnoses included in each category and the accompanying documentation: Identifying Medicaid and CHIP Beneficiaries Who Could Benefit from Integrated Physical and Behavioral Health Care: Reference Codes, for a full list of relevant codes) or (2) a national drug code that indicates that the service involved the provision of an MH, SUD, and/or PH treatment.[2,3]

After identifying claims for MH, SUD, and/or PH services, the algorithm specifies the number of claims on different dates of service that are required to identify a beneficiary with a treated MH, SUD, and/or PH service. The algorithm identifies a beneficiary as having a treated MH and/or SUD service if the individual has one inpatient claim for MH and/or SUD treatment, one prescription drug claim for SUD treatment, or two outpatient or residential claims for MH and/or SUD treatment on different dates of service. In addition, certain screening codes can be counted as one qualifying non-inpatient BH service but must be paired with another non-screening service to include the beneficiary in the BH population. When multiple claims are used to determine whether a beneficiary should be included in one of the three populations, the algorithm requires the relevant claims to be in the same MH and/or SUD diagnostic category. For example, if a beneficiary has one outpatient claim that has the diagnosis code for a tobacco use disorder and one that has the diagnosis code for an alcohol use disorder but no other claims for SUD services, then the beneficiary would not be classified as having an SUD.[4]

[2] In the previous version of the PBHI algorithm, some claims required a type of bill, revenue, or procedure code to determine where the service was provided. The algorithm now takes advantage of the new federally applied service category variable (FED_SRVC_CTGRY_CD). The variable assigns IP, LT, OT, and RX header records into one of 21 distinct service categories. Using the federally applied service category is the preferred method for identifying inpatient services because it allows users to identify the type of service more consistently across states than do other variables. We recreated the federally applied service category identification logic for 2017–2019 since the FED_SRVC_CTGRY_CD variable was only available for 2020.

[3] In the previous version of the PBHI algorithm, there were a small number of revenue and procedures codes that did not require a corresponding diagnosis code for identification within the algorithm. However, the vast majority of these codes had an associated diagnosis code. As a result, the algorithm now requires all claims to have an associated diagnosis code.

[4] Beneficiaries who only require a lower level of treatment for their MH condition and/or SUD may not be captured by our methodology and this may result in the underreporting of beneficiaries.

The algorithm identifies a beneficiary as having a treated PH condition if the individual has one inpatient claim for PH or two outpatient or residential claims for PH on different dates of service.

Table 2. Logic overview for identifying beneficiaries with a treated SUD

Step	Relevant TAF RIF	Logic and purpose	Implementation using TAF RIF
1. Identify beneficiaries in the enrollment file who qualify for inclusion in the analysis	DE file	Identify beneficiaries in the target population who were continuously enrolled for at least 11 months in the calendar year with full or comprehensive Medicaid or CHIP benefits and for whom Medicaid was the primary payer. Since we do not have a full record of all service use for partial-year beneficiaries, we recommend excluding this group. Beneficiaries who qualify for only limited benefits (such as emergency Medicaid or family planning only) are unlikely to receive Medicaid-funded BH treatment regardless of need. When Medicaid is a secondary payer—most commonly, for individuals dually eligible for Medicare—the primary payer is likely to pay for any BH or PH treatment services received and there may be no record in the Medicaid claims data of the beneficiary receiving these services. This may result in underestimating the prevalence of BH or PH conditions.	Read in the DE base file. Use the reference year (RFRNC_YR) to identify records that correspond to the calendar year of interest. Drop "dummy" records that do not contain any enrollment information about the beneficiary (MISG_ELGBLTY_DATA_IND=1). Restrict to beneficiaries who are not dually eligible for Medicaid and Medicare by dropping beneficiaries (identified by MSIS_ID) for whom DUAL_ELGBL_CD_LTST = (02, 04, 08, OR 10). Identify beneficiaries continuously enrolled for at least 11 months of the calendar year with full or comprehensive Medicaid or CHIP benefits (DE enrollment records where RSTRCTED_BNFTS_CD_1 - 12 is equal to 1, 4, or 7, A, B, OR D) for at least 11 months out of the year. Calculate beneficiary age (using BIRTH_DT) and limit to beneficiaries age 12 to 64.
2. Combine monthly claims and enrollment data to create annual IP, LT, OT, and RX files for beneficiaries in the population of interest	DE, IP, LT, OT, and RX header files	To reduce run-time, retain only claims matching to a beneficiary who qualifies for inclusion in the population of interest. Create annual IP, LT, OT, and RX claim files for beneficiaries in the target population.	Read in the IP, LT, OT, and RX header records for beneficiaries identified in the target population created in Step 1, based on MSIS identification number (MSIS_ID) and state (SUBMTG_STATE_CD). Select the most recent file version date for each month using the variables IP_VRSN, LT_VRSN, OT_VRSN, and RX_VRSN. Drop records that represent payments and cannot be tied to a specific service (CLM_TYPE_CD = 2, 4, B, D, V, X). Stack the monthly IP, LT, OT, and RX claim headers (keeping the files separate) so that all months are contained in a single, annual file. Stack months for January through December of the calendar year (for example, 2020 would be 202001 through 202012). Exclude claims for laboratory or transportation services (FED_SRVC_CTGRY_CD = 32 or 34).
3. Join the header- and line-level files	IP, LT, OT, and RX line files	Each monthly IP, LT, OT, and RX TAF consists of two files: the header-level file and the line-level file. Identification of BH and PH requires header-level elements (such as diagnosis code) as well as certain line-level data elements (such as National Drug Codes [NDC]) As a result, each header-level record must be linked with its associated line-level records to evaluate whether the claim includes a BH or PH service.	Separately for the stacked IP, LT, OT, and RX files, link the header and line-level files using the unique combination MSIS ID (MSIS_ID), submitting state code (SUBMTG_STATE_CD), and claim identification number (CLM_ID). Assign a standard service end date. In the IP and LT file, use discharge date (DSCHRG_DT) to set the standard service end date. If DSCHRG_DT is missing, use the maximum LINE_SRVC_END_DT among claim lines associated with the header. In the OT file, use service end date (SRVC_END_DT) on the OT file. If SRVC_END_DT is missing, use the maximum LINE_SRVC_END_DT among claim lines associated with the header.

Table 2 (*continued*)

Step	Relevant TAF RIF	Logic and purpose	Implementation using TAF RIF
4. Identify BH (MH or SUD) claims and classify by BH condition category	IP, LT, and OT files	Medical claims must include a relevant BH diagnosis—either MH or SUD—from the reference codes to be used to identify beneficiaries with a BH condition. For BH claims, flag whether the service was provided in an inpatient setting, versus other service locations.	Identify medical claims in the IP, OT, and LT TAFs that meet the criteria for the MH and SUD conditions in the Substance Use Disorders and Mental Health Disorders sheets in the reference codes workbook. In the IP and LT files, look for claims with any diagnosis code from the reference codes list in any of the diagnosis code fields (DGNS_CD_1 to DGNS_CD_12 in the IP file, DGNS_CD_1 to DGNS_CD_5 in the LT file) or the admitting diagnosis code field (ADMTG_DGNS_CD). In the OT file, look for claims with any of the related diagnosis codes in any of the diagnosis code fields (DGNS_CD_1 and DGNS_CD_2). Differentiate between services provided in an inpatient setting versus other service locations. Flag qualifying medical claims from (1) an inpatient setting (FED_SRVC_CTGRY_CD = 21), (2) inpatient psychiatric services setting (REV_CD = 0114, 0124, 0134, 0144, 0154, or 0204), or (3) inpatient setting based on place of service (in the OT file where POS_CD = 21 or 51). 1. Set BH_TOOL_CLM_FLAG = 1 for qualifying medical claims from an inpatient or inpatient psychiatric services setting (with FED_SRVC_CTGRY_CD = 21 REV_CD = 0114, 0124, 0134, 0144, 0154, or 0204, or in the OT file where POS_CD = 21 or 51) 2. Set BH_TOOL_CLM_FLAG = 2 for qualifying medical claims from a non-inpatient setting (claims that don't meet the first criteria) 3. Set BH_TOOL_CLM_FLAG = 3 to flag screening codes if any procedure code equals 99408, 99409, G0442, H0003, or H0049. These can be counted as one qualifying non-inpatient BH service but must be paired with another non-screening service in order to include the beneficiary in the BH population. For every header claim with BH_TOOL_CLM_FLAG set to 1, 2, or 3, create a header-level condition-specific flag. These condition-specific flags should be set equal to the value of the BH_TOOL_CLM_FLAG.

Table 2 (*continued*)

Step	Relevant TAF RIF	Logic and purpose	Implementation using TAF RIF
5. Identify prescription drug claims for SUD and classify by SUD condition	IP, LT, OT, and RX files	Most prescription drug claims are located in the RX TAF, although some physician-administered drug claims may be found in the IP, LT, and OT TAFs. Prescription drug claims have a different set of fields available compared with medical claims. Detailed information on the specific drug filled is identified through the NDC code on the claim. Unlike with medical claims, diagnosis codes are not available on drug claims and, as a result, are not required to identify SUD pharmacy claims. The list of NDC codes used to identify and flag SUD pharmacy claims parallels the set used by the Chronic Conditions Warehouse (CCW) to flag beneficiaries with an SUD. Naltrexone is used to treat both AUD (alcohol use disorder) and OUD (opioid use disorder). As a result, this set of codes is included by itself instead of within the reference codes for AUD and/or OUD. Following the logic used in the CCW, beneficiaries with a naltrexone fill are classified as having an OUD only if they have no other medical or pharmacy claims indicating an AUD.	Use all four claims files to flag claims that have an NDC code (NDC) matching one of the codes contained in the Alcohol Rx, Tobacco Rx, Opioids Rx, or Naltrexone Rx sheets of the reference codes workbook. Flag prescription drug claims (set RX_CLM_FLAG = 1).
6. Identify claims for PH services	IP, LT, and OT files	Claims for medical services must include a relevant PH diagnosis from the reference codes to be used to identify beneficiaries with a PH condition. Flag whether the service was provided in an inpatient setting, versus other service locations.	Identify medical claims, in the IP, LT, and OT TAFs, for each PH condition from the Physical Health Conditions sheet in the reference codes workbook. In the IP and LT files, look for claims with any diagnosis code from the reference codes list in any of the diagnosis code fields (DGNS_CD_1 to DGNS_CD_12 in the IP file, DGNS_CD_1 to DGNS_CD_5 in the LT file) or the admitting diagnosis code field (ADMTG_DGNS_CD). In the OT file, look for claims with any of the related diagnosis codes in any of the diagnosis code fields (DGNS_CD_1 and DGNS_CD_2). Flag PH services provided in an inpatient setting versus other service locations. 1. Set PH_TOOL_CLM_FLAG = 1 for qualifying medical claims from an inpatient or inpatient psychiatric services setting (with FED_SRVC_CTGRY_CD = 21 REV_CD = 0114, 0124, 0134, 0144, 0154, or 0204, or in the OT file where POS_CD = 21 or 51) 2. Set PH_TOOL_CLM_FLAG = 2 for qualifying medical claims from a non-inpatient setting for all other claims For every header claim with PH_TOOL_CLM_FLAG set to 1 or 2, create a header-level condition-specific flag. These condition-specific flags should be set equal to the value of the PH_TOOL_CLM_FLAG.

Table 2 (*continued*)

Step	Relevant TAF RIF	Logic and purpose	Implementation using TAF RIF
7. De-duplicate claims to count no more than one qualifying BH (SUD or MH) and PH claim per day		De-duplicate to count no more than one claim per beneficiary per day across IP, LT, and OT files and within each category for SUD, MH, and PH. This is required because many outpatient or office-based visits can result in multiple separate claims for the same service or set of services. For example, an office-based visit with a primary care physician may generate a distinct claim from the physician for the professional component of the visit and from the outpatient hospital that owns the physician practice for the facility component of the visit. Prescription drug claims should not be collapsed, as each claim corresponds to a single drug fill and split claims for the same service do not occur in the prescription drug data.	Stack the IP, LT, RX, and OT files into a single file. Collapse IP, LT, and OT claims for the same beneficiary (identified by SUBMTG_STATE_CD and MSIS_ID) on the same date of service into a single record that retains all flags from each claim used to identify an SUD, MH, or PH claim and specific conditions.
8. Identify beneficiaries who meet the criteria for BH specific conditions	DE file and constructed BH claim file	Roll up claims to the beneficiary level to identify and flag Medicaid beneficiaries receiving services for a BH. To be identified in the BH population, a beneficiary must have one qualifying medical claim from an inpatient setting, one qualifying prescription drug claim, or two qualifying medical claims on different dates of service that occurred in a non-inpatient setting. Certain screening codes identified in the reference codes can count as one qualifying non-inpatient BH service but must be paired with another non-screening service to include the beneficiary in the BH population. Since this algorithm is intended to identify beneficiaries with specific BH conditions, beneficiaries identified through non-inpatient claims must have the same condition coded on both claims to qualify for inclusion. That means that a beneficiary with two non-inpatient claims for different conditions (for example, one AUD screening claim and one claim indicating tobacco use disorder) would not qualify for inclusion in the SUD population.	Loop through the set of prescription drug and medical claims that are flagged as being BH services and assign new beneficiary-level condition-specific flags (POP_1_CNDTN_*). Flag Medicaid beneficiaries receiving services for each specific BH condition if they have: (1) one claim with BH_TOOL_CLM_FLAG = 1, or (2) two claims with BH_TOOL_CLM_FLAG = 2 with the same condition-specific flag on both claims, or (3) one claim with BH_TOOL_CLM_FLAG =2 and one with BH_TOOL_CLM_FLAG = 3, and the same condition-specific flag on both claims. (4) one claim with RX_CLM_FLAG = 1 Flag Medicaid beneficiaries as being part of the BH population (set POP_1_FLAG = 1) if they meet the criteria for any BH condition-specific flags above.

Table 2 (*continued*)

Step	Relevant TAF RIF	Logic and purpose	Implementation using TAF RIF
9. Flag beneficiaries who meet the criteria for receiving BH services and one of the selected co-occurring physical conditions	DE file and constructed BH and PH claim file	Roll up claims to the beneficiary level to identify and flag Medicaid beneficiaries receiving services for a BH and PH service. To be identified in this population, a beneficiary must first be identified as receiving BH services. Then, to be identified as receiving PH services, a beneficiary must have one qualifying medical claim with a relevant PH claim in an inpatient setting or two qualifying medical claims on different dates of service that occurred in a non-inpatient setting.	Flag beneficiaries as being part of the BH and PH population (POP_2_FLAG = 1) if the beneficiary meets the criteria for receiving BH specific condition (POP_1_FLAG = 1) and the following criteria for one of the select co-occurring physical conditions: (1) one claim with PH_TOOL_CLM_FLAG = 1, or (2) two claims with PH_TOOL_CLM_FLAG = 2 and the same condition-specific flag on both claims
10. Flag beneficiaries whose BH service use includes only prescription drugs	DE file and constructed BH claim file	Roll up claims to the beneficiary level to identify and flag Medicaid beneficiaries receiving BH services identified through pharmacy claims, but with no medical claims for BH services. To be identified in this BH population, a beneficiary must have one qualifying prescription drug claim and no qualifying medical claims within an inpatient and/or non-inpatient setting.	Flag beneficiaries as having no eligible medical claims for BH services (set POP_3_FLAG = 1) if the beneficiary (1) meets the criteria for receiving BH specific condition (POP_1_FLAG = 1), (2) has claims where the prescription claim-specific flag(s) are greater than zero (RX_CLM_FLAG = 1), and (3) has no claims that meets the criteria for receiving BH specific condition (POP_1_FLAG = 1) based on the BH_TOOL_CLM_FLAG algorithm.

AUD = alcohol use disorder; BH = behavioral health; DE = demographics and eligibility; FFS = fee-for-service; CPT = Current Procedural Terminology; HCPCS = Healthcare Common Procedure Coding System; IP = inpatient; LT = long-term care; MH = mental health; NDC = National Drug Codes; OT = other services; OUD = opioid use disorder; PH = physical health; RX = prescription drug; SUD = substance use disorder; TAF RIF = T-MSIS Analytic Files Research Identifiable Files

III. Detailed technical specifications

The detailed technical specifications below describe how the PBHI algorithm logic is applied to the TAF RIF. The algorithm creates several flags at both the claim level and beneficiary level. In the Appendix, we provide a table identifying the flags created by the algorithm and descriptions of the flags, including the level at which the flags are created, the values flags can take on, and what those values mean.

1. Identify beneficiaries in the DE who qualify for inclusion in the analysis

a. Read in the demographic and eligibility (DE) file and use the reference year (RFRNC_YR) to identify records that correspond to the four-digit calendar year of interest (for example, to analyze calendar year 2020, read in data where RFRNC_YR = 2020). Select the most recent file version date using the variable DE_VRSN.
b. Keep only the variables from the annual DE TAF that are needed for the algorithm (Table 3).

Table 3. DE variables to retain

TAF variable name(s)	Description
RFRNC_YR	Year of the reporting period
DE_VRSN	Indicator representing the iteration of the file
MSIS_ID	The encrypted state-assigned unique identification number used to identify a Medicaid/CHIP-enrolled beneficiary and any claims submitted to the system
SUBMTG_STATE_CD	The ANSI numeric state code for the U.S. state, territory, or the District of Columbia that has submitted the data
DUAL_ELGBL_CD_LTST	Medicare-Medicaid Dual Eligibility Code - Latest in Year
RSTRCTD_BNFTS_CD_*mm*	A flag that indicates the scope of Medicaid or CHIP benefits to which an individual is entitled
MISG_ELGBLTY_DATA_IND	Missing eligibility data indicator
BIRTH_DT	Date of birth

c. Remove records in which there are no eligibility data (MISG_ELGBLTY_DATA_IND = 1), as these claim records do not contain information for how long a beneficiary was enrolled in Medicaid or CHIP.
d. Restrict to beneficiaries who are not dually eligible for Medicaid and Medicare by dropping beneficiaries (identified by MSIS_ID) for whom DUAL_ELGBL_CD_LTST = (02, 04, 08, OR 10).
e. Identify beneficiaries continuously enrolled for at least 11 months of the calendar year with full or comprehensive Medicaid or CHIP benefits by keeping only those beneficiaries for whom RSTRCTD_BNFTS_CD_1-12 = (1, 4, 5, or 7, A, B, OR D).
f. Calculate a beneficiary's age as of the first of the calendar year by calculating January 1 in given year based on BIRTH_DT. Limit the file to beneficiaries age 12 to 64.

2. Combine monthly claims to enrollment data to create annual files

Conduct initial processing of the four types of monthly claims files to limit their size and to facilitate linking.

a. Read in all monthly IP, LT, OT, and RX header records for the year separately for each file, restricting the set of variables retained to those identified in Tables 4–7 below for the most recent

version of the file (based on _VRSN). Note that each monthly TAF consists of two files: the header-level file and the line-level file. The tables below note whether the variables that should be retained are located on the header file, the line file, or both files. Only read in records for beneficiaries identified in the target population created in Step 1, based on MSIS identification number (MSIS_ID) and state (SUBMTG_STATE_CD).

b. Restrict claims files to FFS claims and encounter records. Drop records that represent payments and cannot be tied to a specific service (CLM_TYPE_CD = 2, 4, B, D, V, X).

c. Exclude claims for laboratory or transportation services (FED_SRVC_CTGRY_CD = 32 or 34).

Table 4. IP variables to retain

Variable name	Variable description
Header and line	
CLM_ID	CCW claim identifier used to link headers and lines
IP_FIL_DT	Year and month of the reporting period
IP_VRSN	Indicator representing the iteration of the file
MSIS_ID	The encrypted state-assigned unique identification number used to identify a Medicaid/CHIP-enrolled beneficiary and any claims submitted to the system
SUBMTG_STATE_CD	The ANSI numeric state code for the U.S. state, territory, or the District of Columbia that has submitted the data
Header only	
ADMTG_DGNS_CD	ICD-10-CM admitting diagnosis code
DSCHRG_DT	The date on which the recipient was discharged from the hospital
DGNS_CD_1 - DGNS_CD_12	ICD-10-CM code found on the claim
CLM_TYPE_CD	A data element identifying what kind of payment is covered and that distinguishes between claims for Medicaid or Medicaid-expansion, S-CHIP, and other types of claims
Line only	
LINE_SRVC_ END_DT	For services received during a single encounter with a provider, the date the service covered by this claim was received
REV_CNTR_CD	A code that identifies a specific accommodation, ancillary service, or billing calculation
NDC	A code in NDC format indicating the drug, device, or medical supply covered by this claim

Table 5. LT variables to retain

Variable name	Variable description
Header and line	
CLM_ID	CCW claim identifier used to link headers and lines
LT_FIL_DT	Year and month of the reporting period
LT_VRSN	Indicator representing the iteration of the file
MSIS_ID	The encrypted state-assigned unique identification number used to identify a Medicaid/CHIP-enrolled beneficiary and any claims submitted to the system
SUBMTG_STATE_CD	The ANSI numeric state code for the U.S. state, territory, or the District of Columbia that has submitted the data
Header only	
ADMTG_DGNS_CD	ICD-10-CM admitting diagnosis code
DSCHRG_DT	The date on which the recipient was discharged from the hospital
DGNS_CD_1 - DGNS_CD_5	ICD-10-CM code found on the claim
CLM_TYPE_CD	A data element identifying what kind of payment is covered and that distinguishes between claims for Medicaid or Medicaid-expansion, S-CHIP, and other types of claims
Line only	
REV_CNTR_CD	A code that identifies a specific accommodation, ancillary service, or billing calculation
LINE_SRVC_END_DT	For services received during a single encounter with a provider, the date the service covered by this claim was received
NDC	A code in NDC format indicating the drug, device, or medical supply covered by this claim

Table 6. OT variables to retain

Variable name	Variable description
Header and line	
CLM_ID	CCW claim identifier used to link headers and lines
OT_FIL_DT	Year and month of the reporting period
OT_VRSN	Indicator representing the iteration of the file
MSIS_ID	The encrypted state-assigned unique identification number used to identify a Medicaid/CHIP-enrolled beneficiary and any claims submitted to the system
SUBMTG_STATE_CD	The ANSI numeric state code for the U.S. state, territory, or the District of Columbia that has submitted the data
Header only	
DGNS_CD_1	Diagnosis Code 1 (Primary/Principal); ICD-10-CM code on the claim
DGNS_CD_2	Diagnosis Code 2; ICD-10-CM code on the claim
CLM_TYPE_CD	A data element identifying what kind of payment is covered and that distinguishes between claims for Medicaid or Medicaid-expansion, S-CHIP, and other types of claims
SRVC_END_DT	For services received during a single encounter with a provider, the date the service covered by this claim was received
POS_CD	A data element corresponding with line 24b on the CMS-1500 that indicates where the services took place.
Line only	
LINE_PRCDR_CD	A procedure code (ICD-10, CPT, HCPCS, or other) used by the state to identify the procedures performed during the hospital stay referenced by this claim
LINE_SRVC_END_DT	For services received during a single encounter with a provider, the date the service covered by this claim was received
REV_CNTR_CD	A code that identifies a specific accommodation, ancillary service, or billing calculation
NDC	A code in NDC format indicating the drug, device, or medical supply covered by this claim

Table 7. RX variables to retain

Variable name	Variable description
Header and line	
CLM_ID	CCW claim identifier used to link headers and lines
RX_FIL_DT	Year and month of the reporting period
RX_VRSN	Indicator representing the iteration of the file
MSIS_ID	The encrypted state-assigned unique identification number used to identify a Medicaid/CHIP-enrolled beneficiary and any claims submitted to the system
SUBMTG_STATE_CD	The ANSI numeric state code for the U.S. state, territory, or the District of Columbia that has submitted the data
Header only	
RX_FILL_DT	Prescription fill date
CLM_TYPE_CD	A data element identifying what kind of payment is covered and that distinguishes between claims for Medicaid or Medicaid-expansion, S-CHIP, and other types of claims
Line only	
NDC	A code in NDC format indicating the drug, device, or medical supply covered by this claim.

3. Join the header- and line-level files

Link each header-level record with its associated line-level records.

a. To link header-level records with associated line-level records, separately for each file type, link the header and line-level files using the beneficiary identifier (MSIS_ID), the submitting state code (SUBMTG_STATE_CD), and claim identification (CLM_ID).
b. Select the most recent file version using the variables, IP_VRSN, LT_VRSN, OT_VRSN, RX_VRSN.
c. Assign a standard service end date. When all the lines within a claim do not share the same value for the service date value, take the maximum value across all lines to determine the service date for the whole claim.
    i. In the IP and LT file, use discharge date (DSCHRG_DT) to set the standard service end date. If DSCHRG_DT is missing, use the maximum LINE_SRVC_END_DT among claim lines associated with the header.
    ii. In the OT file, use service end date (SRVC_END_DT) to set the standard service end date. If SRVC_END_DT is missing, use the maximum LINE_SRVC_END_DT among claim lines associated with the header.

4. Identify BH (MH or SUD) claims and classify by BH condition

a. In the IP, OT, and LT files, identify and flag claims for BH services for each MH and SUD condition from the Substance Use Disorders and Mental Health Disorders sheets in the reference codes workbook.
    i. In the IP file, look for claims with any diagnosis code from the reference codes list in the diagnosis codes (DGNS_CD_1 to DGNS_CD_12) or admitting diagnosis codes (ADMTG_DGNS_CD).

ii. In the LT file, look for claims with any diagnosis code from the reference codes list in the diagnosis codes (DGNS_CD_1 to DGNS_CD_5 in the LT file) or admitting diagnosis codes (ADMTG_DGNS_CD).

iii. In the OT file, look for claims with any of the related diagnosis codes (DGNS_CD_1 and DGNS_CD_2).

b. Differentiate between services provided in an inpatient or inpatient psychiatric services setting (Table 8).[5] The algorithm requires a different number of claims depending on the where the service was delivered, or the type of service being delivered.

i. Flag qualifying medical claims from (1) an inpatient setting (FED_SRVC_CTGRY_CD = 21), (2) inpatient psychiatric services setting (REV_CD = 0114, 0124, 0134, 0144, 0154, or 0204), or (3) professional claims with an inpatient place of service (professional claims in the OT file where POS_CD = 21 or 51). F

ii. Flag screening codes. In the OT file, look for claims where procedure code LINE_PRCDR_CD = 99408, 99409, G0442, H0003, or H0049.

iii. If the claim header has multiple lines that meet different identification rules, the minimum qualified value for the flag should be selected. For example, if a claim header has one line-level claim that meets the criteria for an inpatient claim (BH_TOOL_CLM_FLAG = 1) and one that meets the criteria for an outpatient claim (BH_TOOL_CLM_FLAG = 2), the claim header should be assigned the minimum qualified value for the flag (BH_TOOL_CLM_FLAG = 1).

Table 8. Values of BH claims qualification rule flag

Claims qualification rule	Flag value
One qualifying medical claim from an inpatient or inpatient psychiatric services setting (1+ claims where the where FED_SRVC_CTGRY_CD = 21 or REV_CD = 0114, 0124, 0134, 0144, 0154, or 0204, or professional claims in the OT file where POS_CD = 21 or 51).	BH_TOOL_CLM_FLAG = 1
Two qualifying medical claims for the same specific BH conditions on different dates of service that occurred in a non-inpatient setting (2+ claims on different dates of service that do not meet the inpatient qualification rules above).	BH_TOOL_CLM_FLAG = 2
Flag screening codes (these can be count as one qualifying non-inpatient BH service but must be paired with another non-screening service to include the beneficiary in the BH population).	BH_TOOL_CLM_FLAG = 3

c. For every claim with BH_TOOL_CLM_FLAG set to 1, 2, or 3, create a claim-level condition-specific flag as noted in Table 9, based on the category in which the diagnosis code on the header falls (see the Mental Health Disorders and Substance Use Disorders sheets in the reference codes workbook for the mapping of individual diagnosis codes to diagnostic categories). These condition-specific flags should be set equal to the value of the BH_TOOL_CLM_FLAG.

[5] The FED_SRVC_CTGRY_CD variable was not available for 2017–2019 at the time of our analysis, so we constructed the variable for those years using the identification logic available here: https://www.medicaid.gov/dq-atlas/landing/resources/downloads.

Table 9. Values of BH claims-level condition flags

Diagnosis code category	Flag name
Mental health disorder tab	
Anxiety Disorders	ANXTY_MH_DSRDR
ADHD, Conduct Disorders, and Hyperkinetic Syndrome	ADHD_MH_DSRDR
Bipolar Disorder	BPLR_MH_DSRDR
Depressive Disorders	DPRSV_MH_DSRDR
Personality Disorders	PRSNLTY_MH_DSRDR
Post-Traumatic Stress Disorder (PTSD)	PTSD_MH_DSRDR
Schizophrenia and Other Psychotic Disorders	SCHZPR_MH_DSRDR
Other Mental Health Disorders	OTHER_MH_DSRDR
Substance use disorders tab	
Alcohol Use Disorders	ALCHL_SUD_DSRDR
Tobacco Use Disorders	TBCCO_SUD_DSRDR
Drug Use Disorders – Cannabis	DUD_CNNBS_SUD_DSRDR
Drug Use Disorders – Caffeine	DUD_CFFNE_SUD_DSRDR
Drug Use Disorders – Hallucinogens	DUD_HLLCNGN_SUD_DSRDR
Drug Use Disorders – Inhalants	DUD_INHLNTS_SUD_DSRDR
Drug Use Disorders – Opioids	DUD_OPIOIDS_SUD_DSRDR
Drug Use Disorders – Sedatives, Hypnotics, Anxiolytics	DUD_SHA_SUD_DSRDR
Drug Use Disorders – Stimulants	DUD_STMLNTS_SUD_DSRDR
Drug Use Disorders – Other and Unknown	DUD_OTHER_SUD_DSRDR
Drug Use Disorders – Polysubstance[6]	PLYSBSTNCE_SUD_DSRDR

5. Identify prescription drug claims for SUD and classify by SUD condition

a. In all claims files (RX, IP, LT, and OT), identify BH prescription claims as those with an NDC_CODE value that matches to one of the NDC codes contained in the Alcohol Rx, Tobacco Rx, Opioids Rx, or Naltrexone Rx sheets of the reference codes workbook. Flag claim headers with RX_CLM_FLAG = 1 if any line within the claim has an NDC code that is contained in the reference codes. If the claim header already has a non-missing BH_TOOL_CLM_FLAG value, reset the flag to a value of 1.

b. For claims identified above, set the condition-specific flags based on the tab in which the NDC code is found (Table 10). The one exception is for NDC values that map to the non-proprietary drug name naltrexone. Since that drug is used to treat both opioid use disorder and alcohol use disorder, instead of assigning a condition flag, create a new flag NLTRXNE_RX = 1 for these claims.[7]

[6] A polysubstance disorder flag will be created at the beneficiary level for beneficiaries with more than one type of SUD flag.

[7] When claims are rolled up to the beneficiary level, these claims will be assigned to either the alcohol or opioid use disorder categories based on the presence or absence of other claims for alcohol use disorder for the beneficiary.

Table 10. BH claims-level condition flags for prescription drugs

Prescription drug code tab	Flag value
Alcohol Rx	ALCHL_SUD_DSRDR = 1
Tobacco Rx	TBCCO_SUD_DSRDR = 1
Opioids Rx	DUD_OPIOIDS_SUD_DSRDR = 1
Naltrexone Rx	DUD_NALTRXNE_RX = 1

6. Identify claims for PH services

a. Among the retained records, identify claims with a diagnosis code on the header record that match one of the diagnosis codes in the Physical Health Conditions sheet in the reference codes.
   i. In the IP file, look for claims with any diagnosis code from the reference codes list in the diagnosis codes (DGNS_CD_1 to DGNS_CD_12) or admitting diagnosis codes (ADMTG_DGNS_CD).
   ii. In the LT file, look for claims with any diagnosis code from the reference codes list in the diagnosis codes (DGNS_CD_1 to DGNS_CD_5) or admitting diagnosis codes (ADMTG_DGNS_CD).
   iii. In the OT file, look for claims with any of the related diagnosis codes (DGNS_CD_1 and DGNS_CD_2).

b. Flag qualifying medical claims from (1) an inpatient setting (FED_SRVC_CTGRY_CD = 21), (2) inpatient psychiatric services setting (REV_CD = 0114, 0124, 0134, 0144, 0154, or 0204), or (3) professional claims with an inpatient place of service (professional claims in the OT file where POS_CD = 21 or 51), as shown in Table 11.

c. If the claim has multiple lines within the claim that meet different identification rules, the minimum qualified value for the flag should be selected. For example, if a claim header has one line-level claim that meets the criteria for an inpatient claim (PH_TOOL_CLM_FLAG = 1) and one that meets the criteria for an outpatient claim (PH_TOOL_CLM_FLAG = 2), the claim header should be assigned the minimum qualified value for the flag (PH_TOOL_CLM_FLAG = 1).

Table 11. Setting PH_TOOL_CLAIM_FLAG values

Claims qualification rule	Flag value
One qualifying medical claim from an inpatient or inpatient psychiatric services setting (1+ claims where the FED_SRVC_CTGRY_CD = 21 or REV_CD = 0114, 0124, 0134, 0144, 0154, or 0204, or professional claims in the OT file where POS_CD = 21 or 51).	PH_TOOL_CLM_FLAG = 1
Two qualifying medical claims for the same specific PH conditions on different dates of service that occurred in a non-inpatient setting (2+ claims on different dates of service that do not meet the inpatient qualification rules above).).	PH_TOOL_CLM_FLAG = 2

d. Next, loop through all headers that have the PH_TOOL_CLAIM_FLAG set and create a header-level condition-specific flag as noted in Table 12, based on the condition-specific category into which the diagnosis code on the claim falls (see the Physical Health Conditions sheet in the reference codes workbook). The condition-specific flag should be set to the same value as PH_TOOL_CLAIM_FLAG.

Table 12. PH claims-level condition flags values

Diagnosis code category	Flag name
Hyperlipidemia	HYPRLPDMA_PH
Diabetes	DBTS_PH
Asthma	ASTHMA_PH
Obesity	OBSTY_PH
Ischemic heart disease	ISC_HRT_PH
Acute myocardial infarction	AMI_PH
Heart failure	HF_PH
Cancer, Colorectal	CNCR_CLRCTL_PH
Cancer, Endometrial	CNCR_ENDMTRL_PH
Cancer, Breast	CNCR_BRST_PH
Cancer, Lung	CNCR_LNG_PH
Cancer, Prostate	CNCR_PROST_PH
Cancer, Other	CNCR_OTHR_PH
Chronic obstructive pulmonary disease (COPD) and Bronchiectasis	COPD_PH
Human Immunodeficiency Virus and/or Acquired Immunodeficiency Syndrome (HIV/AIDS)	HIV_AIDS_PH
Viral hepatitis, General	VRLHPTS_PH
Fibromyalgia, chronic pain and fatigue	CHRNC_PAIN_PH
Chronic kidney disease	CHRNC_KIDNY_PH
Liver Disease, cirrhosis and other liver conditions (except viral hepatitis)	LVRCRR_PH
RA/OA (Rheumatoid Arthritis/ Osteoarthritis)	ARTHRTS_PH
Stroke /Transient Ischemic Attack	STROKE_PH
Migraine and chronic headache	HEADACHE_PH
Hip/pelvic fracture	HIP_PELV_FRCT_PH
Traumatic Brain Injury and Nonpsychotic Mental Disorders due to Brain Damage	TRM_BRN_PH
Hypertension	HYPRTNSN_PH

7. De-duplicate claims to count no more than one qualifying BH (SUD or MH) or PH claim per day

a. Stack the IP, LT, RX, and OT files into a single file, keeping only the claims with a non-missing BH_TOOL_CLM_FLG or RX_CLM_FLAG value.

b. For any IP, LT, and OT claims within a file that share the same SUBMTG_STATE_CD, MSIS_ID, and standard service date and have a non-missing BH_TOOL_CLM_FLAG, collapse the claims to a single record and ensure that record takes

   i. The minimum value of the BH_TOOL_CLM_FLAG across all collapsed claims

   ii. The minimum non-missing value for each condition-specific flag

8. Identify beneficiaries who meet the criteria for BH specific conditions

a. Loop through the flagged claims and assign new beneficiary-level condition-specific flags called POP_1_CNDTN_* if the beneficiary meets any one or more of the following criteria:

   i. At least one claim with a condition-specific flag set to 1 (for instance, POP_1_CNDTN_ANXTY_MH = 1)

ii. At least one pharmacy claims that meet the behavioral health claims qualification rules (RX_CLM_FLAG = 1)
iii. At least two claims with different dates of service with both condition-specific flags set to 2 (for instance, POP_1_CNDTN_ANXTY_MH = 2 on both claims)
iv. At least two claims with different dates of service, with the condition-specific flag set to 2 on at least one claim and to 3 on at least one other claim (for instance, POP_1_CNDTN_ANXTY_MH = 2 on the first claim and POP_1_CNDTN_ANXTY_MH = 3 on the second claim)
v. Apply this logic to all *_SUD_DSRDR flags and *_MH_DSRDR flags.

b. For beneficiaries with one or more claims where DUD_NLTRXNE_RX = 1, use the following logic to set the beneficiary-level condition-specific flags:
   i. If POP_1_CONDTN_AUD is set to zero or missing, then set POP_1_CNDTN_OUD = 1
   ii. If POP_1_CONDTN_AUD = 1, then keep POP_1_CONDTN_AUD = 1 and do not change the value of this flag
c. Set POP_1_PLYSBSTNCE_SUD = 1 for all beneficiaries with DUD_CNDTN_*_SUD flags for more than one condition type (for instance, if DUD_CNNBS_SUD_DSRDR = 1 and POP_1_PLYSBSTNCE_SUD = 1). A beneficiary with only two DUD_CNDTN_*_SUD flags of the same type would not be assigned the POP_1_PLYSBSTNCE_SUD flag.
d. For all beneficiaries with a beneficiary-level condition-specific POP_1_CNDTN_*_SUD flag set to 1, also set POP_1_SUD = 1.
e. For all beneficiaries with at least one beneficiary-level condition-specific POP_1_CNDTN_*_MH flag set to 1, also set POP_1_MH = 1.
f. Set POP_1_FLAG = 1 for any beneficiary that meets one or more of the following criteria:
   i. One claim with a BH-specific flag set to 1 (for instance, BH_TOOL_CLM_FLAG = 1)
   ii. One pharmacy claim (RX_CLM_FLAG = 1)
   iii. Two claims with different dates of service with both BH-specific flags set to 2 (for instance, BH_TOOL_CLM_FLAG = 2 on both claims)
   iv. Two claims with different dates of service, with the BH-specific flag set to 2 on one claim and to 3 on the other (for instance, BH_TOOL_CLM_FLAG = 2 on the first claim and BH_CLM_FLAG = 3 on the second claim)

9. Flag beneficiaries who meet the criteria for receiving BH services and one of the selected co-occurring physical conditions[8]

Flag beneficiaries who received BH services who also received services for one of the select co-occurring physical conditions (POP_2_FLAG = 1) if the beneficiary

a. received services for any BH condition (POP_1_FLAG = 1), and
b. meets any one of the following criteria:
   i. One claim with PH condition flag equal to one (for instance, HYPRTNSN_PH =1), or

[8] The flags in this section should only be applied to claims for beneficiaries identified with having received a BH service.

ii. Two claims with different dates of service with both condition-specific flags set to 2 (for instance, HYPRTNSN_PH = 2 on both claims)

10. Flag beneficiaries whose BH service use includes only prescription drugs

Flag beneficiaries as having no eligible medical claims for BH services (set POP_3_FLAG = 1) if the beneficiary

a. meets the criteria for receiving BH specific condition (POP_1_FLAG = 1),
b. has claims where the prescription claim-specific flag(s) are greater than zero (RX_CLM_FLAG = 1), and
c. has no claims that meets the criteria for receiving BH specific condition (POP_1_FLAG = 1) based on the BH_TOOL_CLM_FLAG algorithm.

11. Create population flags

a. Generate a variable ANY_MH_COND. Set ANY_MH_COND = 1 if POP_1_ADHD_MH_DSRDR = 1 or POP_1_DPRSV_MH_DSRDR = 1 or POP_1_ANXTY_MH_DSRDR = 1 or POP_1_BPLR_MH_DSRDR = 1 or POP_1_SCHZPR_MH_DSRDR = 1 or POP_1_PTSD_MH_DSRDR = 1 or POP_1_PRSNLTY_MH_DSRDR = 1 or POP_1_OTHER_MH_DSRDR = 1

b. Generate a variable ANY_SUD_COND (this is. our pop1_sud flag). Set ANY_SUD_COND = 1 if POP_1_DUD_OPIOIDS_SUD_DSRDR = 1 or POP_1_ALCHL_SUD_DSRDR = 1 or POP_1_ALCHL_SUD_DSRDR = 1 or POP_1_DUD_STMLNTS_SUD_DSRDR or POP_1_DUD_CNNBS_SUD_DSRDR = 1 or POP_1_DUD_CFFNE_SUD_DSRDR = 1or POP_1_DUD_HLLCNGN_SUD_DSRDR = 1 or POP_1_DUD_INHLNTS_SUD_DSRDR = 1 or POP_1_DUD_SHA_SUD_DSRDR = 1 or POP_1_DUD_OTHER_SUD_DSRDR = 1 or POP_1_PLYSBSTNCE_SUD_DSRDR = 1

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IV. Limitations

These technical specifications rely on administrative claims data to identify beneficiaries receiving physical and/or behavioral health-related services. The use of administrative claims data has advantages, such as ease of access and accuracy regarding type and timing of services. However, there are important limitations to using administrative claims data to identify physical and/or behavioral services.

- **The algorithm only includes Medicaid and CHIP beneficiaries who received treatment for a PH and/or BH condition as part of a Medicaid- or CHIP-funded service.** Treatment for BH conditions includes inpatient, outpatient, long-term care, and medication-related services. State Medicaid and CHIP programs vary widely in terms of which BH-related services are covered and in which settings. For example, some state Medicaid and CHIP programs cover all FDA-approved medications for treating OUD, whereas other programs cover only some of these medications.

- **Results from administrative claims data are likely to underestimate the proportion of Medicaid recipients with a BH condition.** Despite concerted efforts to combat the stigma associated with a BH condition, some clinicians may be reluctant to list a BH diagnosis on a medical claim and many individuals with BH conditions do not seek treatment. In addition, beneficiaries who only require a lower level of treatment for their MH condition and/or SUD may not be captured by our methodology. Thus, results from administrative claims data are likely to underestimate the proportion of Medicaid recipients with a BH condition.

- **Coding errors and data quality issues can affect the accuracy of the results.** The logic of the algorithm assumes that the procedure codes, diagnosis codes, and revenue codes are used correctly; however, there is evidence of coding errors and other limitations in some states' TAF RIF data. Errors in the data will result in the misclassification of beneficiaries. In addition, the accuracy of diagnoses listed on claims depends on the provider's clinical knowledge of PH and/or BH conditions, the resources available to the provider for evaluating the patient's conditions, and administrative factors, such as accurate transcription from medical records/notes to electronic billing systems. Further, data quality issues introduced by states during the federal reporting process may affect the accuracy of the results. States with serious data quality issues are not included in the final Medicaid public use file output.

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Appendix. Key flags generated by algorithm

Flag Name	Flag description
Claim-level	
BH_TOOL_CLM_FLAG	Indicates how many claims are needed for a beneficiary to qualify as having a specific BH condition. The algorithm identifies a beneficiary as having a treated MH and/or SUD if the individual has one inpatient claim for MH and/or SUD treatment, one prescription drug claim for SUD treatment, or two outpatient or residential claims for MH and/or SUD treatment on different dates of service. Certain screening codes identified in the reference codes can count as one qualifying non-inpatient BH service but must be paired with another non-screening service in order to include the beneficiary in the BH population. Depending on what rule the claim meets, the flag can take on the value of 1, 2, or 3.
RX_CLM_FLAG	Identifies pharmacy claims that meet the behavioral health claims qualification rules. This flag is always set equal to 1 for prescription fills for drugs primarily used to treat substance use disorders.
*_MH_DSRDR	MH condition-specific flags based on specific BH diagnoses (see Mental Health Disorders sheet in the reference codes workbook). These condition-specific flags should be set equal to the value of the BH_TOOL_CLM_FLAG.
*_SUD_DSRDR	SUD category condition-specific flags based on specific BH diagnoses (see Substance Use Disorders sheet in the reference codes workbook). These condition-specific flags should be set equal to the value of the BH_TOOL_CLM_FLAG.
ALCHL_SUD_DSRDR; TBCCO_SUD_DSRDR; DUD_OPIOIDS_SUD_DSRDR	Identifies BH prescriptions claims for alcohol, tobacco, or opioid condition-specific NDC codes (see Alcohol Rx, Tobacco Rx, and Opioids Rx sheets in the reference codes workbook). If any line of the claims contains the specific NDC value, the flag takes a value of 1.
DUD_NALTRXNE_RX	Since naltrexone is used to treat both opioid use disorder and alcohol use disorder, instead of assigning a condition flag, we created a new flag for these claims specifically. Flag identifies BH prescriptions claims for naltrexone condition-specific NDC codes (see Naltrexone Rx sheet in the reference codes workbook for specific NDC codes). If any line of the claims contains the specific NDC value, the flag takes a value of 1.
PH_TOOL_CLM_FLAG	Identifies medical claims that meet the qualification rules for the selected PH conditions included in the PBHI algorithm. The flag takes a value of 1 for inpatient claims and a value of 2 for all other claims.
*_PH	PH category condition-specific flags based on specific PH diagnoses (see Physical Health Conditions sheet in the reference codes workbook). These condition-specific flags should be set equal to the value of the PH_TOOL_CLM_FLAG.
Beneficiary-level	
POP_1_CNDTN_*	BH condition-specific flags based on specific BH diagnoses (see Mental Health Disorders and Substance Use Disorders sheets in the reference codes workbook) and any one or more of the criteria outlined in step 10a. Depending on the criteria met, the flag can take on the value of 1, 2, or 3.
POP_1_SUD	Identifies all beneficiaries with SUD based on SUD condition-specific flags (POP_1_CNDTN_*_SUD). This flag should be set to 1 if any of the SUD condition-specific flags are set to 1.
POP_1_MH	Identifies all beneficiaries with MH disorders based on MH disorders condition-specific flags (POP_1_CNDTN_*_MH). This flag should be set to 1 if any of the MH disorders condition-specific flags are set to 1.
POP_1_FLAG	Identifies beneficiaries who received services for any BH condition meeting one or more of the criteria outlined in step 10f. If one or more of the criteria are met, this flag should be set to 1.

Appendix (*continued*)

Flag Name	Flag description
POP_2_CNDTN_*	PH condition-specific flags based on specific PH diagnoses (see Physical Health Conditions sheet in the reference codes workbook) and any of the criteria outlined in step 12a. Depending on the criteria met, the flag can take on the value of 1 or 2.
POP_2_FLAG	Identifies beneficiaries who received BH services and also received services for one of the select co-occurring physical conditions. If any PH condition-specific flags (POP_2_CNDTN_*) are equal to 1, this flag should also be set to 1.
POP_3_FLAG	Identifies beneficiaries whose BH service use includes only prescription drugs. If the criteria are met, this flag should be set to 1.

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"Identifying Medicaid and CHIP Beneficiaries Who Could Benefit from Integrated Physical and Behavioral Health Care: Technical Specifications." Baltimore, MD: CMS, January 2023.

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