Overview and Description of the Common Data Model v4.0

Mini-Sentinel

The primary goal of the Mini-Sentinel pilot is to build and operate a national public health surveillance system to monitor the safety of FDA-regulated medical products, including drugs, biologics, and devices. Mini-Sentinel is part of the Sentinel Initiative, the FDA's response to a congressional mandate to create an active surveillance system using electronic health data.

The Mini-Sentinel program will undertake three major types of activities: (1) prospective evaluation of accumulating experience about specific medical products and specific suspected safety problems; (2) evaluation of the impact of FDA actions (e.g., labeling changes) on medical practice and health outcomes; and (3) rapid assessment of past experience in response to FDA questions about specific exposures and outcomes.

Mini-Sentinel Collaborating Institutions maintain data resources and provide technical, scientific, and methodological expertise as needed to meet the public health surveillance requirements of Mini-Sentinel. The Collaborating Institutions also participate as members of the Planning Board, the Safety Science Committee, the Mini-Sentinel Operations Center (MSOC), and various Mini-Sentinel workgroups.

Mini-Sentinel Common Data Model

The MSOC Data Core coordinates the network of Mini-Sentinel Data Partners and leads development of the Mini-Sentinel Common Data Model (MSCDM), a standard data structure that allows Data Partners to quickly execute distributed programs against local data. The MSOC Data Core manages creation of the Mini-Sentinel Distributed Database (MSDD) using the MSCDM, and maintains complete documentation of the implementation and characteristics of the MSDD. The MSDD refers to the data held and maintained by the Data Partners in the MSCDM format. The MSCDM was developed in accordance with the MSCDM Guiding Principles and was modeled after the HMO Research Network Virtual Data Warehouse.

The MSCDM currently includes 11 tables that represent information for the data elements needed for Mini-Sentinel activities. Records are linked across tables by a unique person identifier, PatID. Details of the 11 tables are provided in this document. An additional 13 Summary Tables are created from the "parent tables" and are also described in this document. Revisions and enhancements to the MSCDM are expected, including the addition of clinical information, incorporation of other data types and sources, and revisions based on lessons learned from use of the MSDD. This may include adopting variables and formats developed by other programs.

This data model is freely available to all.

For more information about Mini-Sentinel visit the website at: www.mini-sentinel.org

For comments and suggestions, please email: info@mini-sentinel.org

List of Tables

Table Name	Source	Description
1. Enrollment	Created by Data Partners using Data Partner data.	The MSCDM Enrollment Table has a start/stop structure that contains one record per continuous enrollment period. Members with medical coverage, drug coverage, or both should be included. A unique combination of PatID, Enr_Start, Enr_End, MedCov, and DrugCov identifies a unique record. A break in enrollment (of at least one day) or a change in either the medical or drug coverage variables should generate a new record.
2. Demographic	Created by Data Partners using Data Partner data.	The MSCDM Demographic Table contains one record per PatID with the most recent information on Birth_Date and Sex.
3. Dispensing	Created by Data Partners using Data Partner data.	The MSCDM Outpatient Pharmacy Dispensing Table contains one record per unique combination of PatID, NDC, and RxDate. Each record represents an outpatient pharmacy dispensing. Rollback transactions and other adjustments should be processed before populating this table.
4.1 Encounter	Created by Data Partners using Data Partner data.	The MSCDM Encounter Table contains one record per PatID and EncounterID (which reflects a unique combination of PatID, ADate, Provider and EncType). Each encounter should have a single record in the MSCDM Encounter Table. Each diagnosis and procedure recorded during the encounter should have a separate record in the Diagnosis or Procedure Tables. Multiple visits to the same provider on the same day should be considered one encounter and should include all diagnoses and procedures that were recorded during those visits. Visits to different providers on the same day, such as a physician appointment that leads to a hospitalization, should be considered multiple encounters. Rollback transactions and other adjustments should be processed before populating this table.
4.2 Diagnosis	Created by Data Partners using Data Partner data.	The MSCDM Diagnosis Table contains one record per unique combination of PatID, EncounterID, DX, and DX_CodeType. This table should capture all uniquely recorded diagnoses for all encounters.
4.3 Procedure	Created by Data Partners using Data Partner data.	The MSCDM Procedure Table contains one record per unique combination of PatID, EncounterID, PX, and PX_CodeType. This table should capture all uniquely recorded procedures for all encounters.
5.1 Death	Created by Data Partners using Data Partner data.	The MSCDM Death Table contains one record per PatID.1 When legacy data have conflicting reports, please make a local determination as to which to use. There is typically a 1-2 year lag in death registry data.
5.2 Cause of Death	Created by Data Partners using Data Partner data.	The MSCDM Cause of Death Table contains one record per unique combination of PatID and COD.1 When legacy data have conflicting reports, please make a local determination as to which to use. There is typically a 1-2 year lag in death registry data.

Table Name		Description
6.1 Laboratory Result	Created by Data Partners using Data Partner data.	The MSCDM Laboratory Result Table contains one record per result/entry. Only include resulted lab tests.
6.1.1 Laboratory Result Guideline	Created by MSOC and provided to Data Partners for reference.	The MSCDM Laboratory Result Guideline Table depicts acceptable values for selected Laboratory Result Table variables. These values are test type specific. Please see the Laboratory LOINC Information Table for currently known LOINC codes for each MS_Test_Name.
6.1.2 Laboratory LOINC Info	Created by MSOC and provided to Data Partners for reference.	The MSCDM Laboratory LOINC Information Table lists the currently known LOINC codes that are associated with each MS_Test_Name, MS_Test_Sub_Category and Specimen_Source. This table is intended to be a guide and does not represent a complete list of codes for each laboratory test.
6.1.3 Laboratory CPT Info	Created by MSOC and provided to Data Partners for reference.	The MSCDM Laboratory CPT Information Table lists CPT codes that are associated with each MS_Test_Name. Because CPT codes are mostly used for billing, are not associated with actual laboratory results, and are not sufficiently granular to be routinely useful in assigning MS_Test_Names, a CPT code by itself does not suggest that the record should be included in the laboratory result table. CPT codes may be useful for rule-outs. Therefore, this table is intended to be supplemental information only and does not represent a complete list of CPT codes for each laboratory test. This list is not routinely updated.
6.1.4 Laboratory Standard Abbreviations	Created by MSOC and provided to Data Partners for reference.	The MSCDM Laboratory Standard Abbreviations Table depicts standard abbreviations for common laboratory units.
6.2 Vital Signs	Created by Data Partners using Data Partner data.	The MSCDM Vital Signs Table contains one record per result/entry.
7. State Vaccine	Created by Data Partners using external data.	The MSCDM State Vaccine Table contains vaccination records received from Immunization Information Systems for patients identified and matched from selected Data Partners. It contains one record per vaccination, per unique PatID, VaxDate, VaxCode, Provider and AdminType. The V_EncounterID serves as the unique identifier for each record.
Summary Table: Age Groups	Created by Data Partners using tables 1-7 in this document.	The MSCDM Age Groups Summary Table provides a key for the age group stratifications within each summary table. The table is used to minimize the complexity of the query created by the Mini-Sentinel Distributed Query Tool. It does not change with each data refresh but must be present in the local summary table database to enable the query process.

Table Name		Description
Summary Table: Enrollment	Created by Data Partners using tables 1-7 in this document.	The MSCDM Enrollment Summary Table provides a count of unique individuals and days covered stratified by age group, sex, year, drug coverage status, and medical coverage status. These stratified counts can be used as denominators to calculate crude prevalence rates. Individuals enrolled at least one day during the year are included. The counts are based on the MSCDM Enrollment Table.
Summary Table: Generic Drug Name	Created by Data Partners using tables 1-7 in this document.	The MSCDM Generic Drug Name Summary Table provides a count of unique individuals stratified by age group, sex, year, and year-quarter who had one or more outpatient pharmacy dispensings recorded in the MSCDM Dispensing Table with the generic drug name indicated, as well as the total number of such dispensings and the total days supplied.
Summary Table: Drug Category	Created by Data Partners using tables 1-7 in this document.	The MSCDM Drug Category Summary Table provides a count of unique individuals stratified by age group, sex, year, and year-quarter who had one or more outpatient pharmacy dispensings recorded in the MSCDM Dispensing Table with the drug category indicated, as well as the total number of such dispensings and the total days supplied.
Summary Table: 3-Digit ICD9 Diagnosis	Created by Data Partners using tables 1-7 in this document.	The MSCDM 3-Digit ICD-9 Diagnosis Summary Table provides a count of unique individuals stratified by age group, sex, year, and care setting who had one or more encounters recorded in the MSCDM Diagnosis Table with the 3 digit ICD-9-CM diagnosis code indicated, as well as the total number of such encounters.
Summary Table: 4-Digit ICD9 Diagnosis	Created by Data Partners using tables 1-7 in this document.	The MSCDM 4-Digit ICD-9 Diagnosis Summary Table provides a count of unique individuals stratified by age group, sex, year, and care setting who had one or more encounters recorded in the MSCDM Diagnosis Table with the 4 digit ICD-9-CM diagnosis code indicated, as well as the total number of such encounters.
Summary Table: 5-Digit ICD9 Diagnosis	Created by Data Partners using tables 1-7 in this document.	The MSCDM 5-digit ICD-9 Diagnosis Summary Table provides a count of unique individuals stratified by age group, sex, year, and care setting who had one or more encounters recorded in the MSCDM Diagnosis Table with the 5 digit ICD-9-CM diagnosis code indicated, as well as the total number of such encounters.
Summary Table: HCPCS	Created by Data Partners using tables 1-7 in this document.	The MSCDM HCPCS Summary Table provides a count of unique individuals stratified by age group, sex, year, and care setting who had one or more encounters recorded in the MSCDM Procedure Table with the HCPCS procedure code indicated, as well as the total number of such encounters.

Table Name		Description
Summary Table: 3-Digit ICD9 Procedure	Created by Data Partners using tables 1-7 in this document.	The MSCDM 3-Digit ICD-9 Procedure Summary Table provides a count of unique individuals stratified by age group, sex, year, and care setting who had one or more encounters recorded in the MSCDM Procedure Table with the 3 digit ICD-9-CM procedure code indicated, as well as the total number of such encounters.
Summary Table: 4-Digit ICD9 Procedure	Created by Data Partners using tables 1-7 in this document.	The MSCDM 4-Digit ICD-9 Procedure Summary Table provides a count of unique individuals stratified by age group, sex, year, and care setting who had one or more encounters recorded in the MSCDM Procedure Table with the 4 digit ICD-9-CM procedure code indicated, as well as the total number of such encounters.
Summary Table: Incident Generic Drug Name	Created by Data Partners using tables 1-7 in this document.	The MSCDM Incident Generic Drug Name Summary Table provides a count of unique members with an incident dispensing for each generic drug name of interest stratified by age group, sex, and year. Incidence is defined as a member with a dispensing with the generic drug name of interest (i.e., the index date), in the year of interest with no evidence of a dispensing for that generic drug name in the 90, 180 and 270 days (i.e., the lookback periods) before the index date. Both medical and drug coverage are required during the three possible lookback periods, allowing for eligibility gaps of <=45 days. In addition to reporting the number of members with an incident dispensing, for each such incident user a treatment episode starting on the index date is created, and the total number of dispensings with the generic drug name, days supplied and length of treatment episodes (in days) in the 90, 180, 270 days after the index date are reported. Treatment gaps of <= 15 days are allowed when building treatment episodes and no restriction on the length of treatment episodes is applied. Although a member can have multiple index events in a given calendar year the first one only is counted and used for reporting. This table also reports a count of members with index dates in each quarter which sum up to total number of members for that year.

Table Name		Description
	Created by Data Partners using tables 1-7 in this document.	The MSCDM Incident Drug Category Summary Table provides a count of unique members with an incident dispensing for each drug category of interest stratified by age group, sex, and year. Incidence is defined as a member with a dispensing with the drug category of interest (i.e., the index date), in the year of interest with no evidence of a dispensing for that drug category in the 90, 180 and 270 days (i.e., the lookback periods) before the index date. Both medical and drug coverage are required during the three possible lookback periods, allowing for eligibility gaps of <=45 days. In addition to reporting the number of members with an incident dispensing, for each such incident user a treatment episode starting on the index date is created, and the total number of dispensings with the drug category, days supplied and length of treatment episodes (in days) in the 90, 180, 270 days after the index date are reported. Treatment gaps of <= 15 days are allowed when building treatment episodes and no restriction on the length of treatment episodes is applied. Although a member can have multiple index events in a given calendar year the first one only is counted and used for reporting. This table also reports a count of members with index dates in each quarter which sum up to total number of members for that year.
	Created by Data Partners using tables 1-7 in this document.	The MSCDM Incident 3-Digit ICD-9 Diagnosis Summary Table provides a count of unique members with an incident diagnosis of each 3-digit ICD-9-CM code in one of four care setting of interest, stratified by age group, sex, and year. Incidence is defined as a member with an encounter with the diagnosis of interest (i.e., the index date), in the care setting of interest, in the year of interest with no evidence of that diagnosis in the 90, 180 and 270 days (i.e., the lookback periods) before the index date in any care setting. Both medical and drug coverage are required during the three possible lookback periods, allowing for eligibility gaps of <=45 days. In addition, the table reports the number of encounters in the care setting of interest with the diagnosis in the 90, 180, 270 days after the index date (including the index event). Only the first incident event/index date within each year is considered.

History of Modifications

Version	Date	Modification	By
v1.1	12/08/10	Minor text modifications	MSOC
v2.0	12/29/11	Added new tables: Laboratory, Vitals, Summary Tables	MSOC
		Revised definitions of Encounter table variables: Discharge Disposition, Discharge Status	MSOC
v2.1	01/18/12	Added List of Tables; minor text modifications	MSOC
v2.1_edits	08/03/12	Updated 6.1Laboratory table with new lab structure; Added 6.1.1Lab Details, 6.1.2Examples&Stand.Units, 6.1.3AdditionalInfo, 6.1.4LOINC Info, and 7.StateVaccine tables	MSOC
v2.2	08/21/12	Updated Laboratory Information for Influenza, including test types, subtypes, LOINCs, and specimen sources. Minor text modifications	MSOC
v2.3	09/17/12	Removed NTBAND as a value for MS_Test_Name on the 6.1Laboratory table. Removed NTBAND as a test type on the 6.1.1LabDetails table	MSOC
v2.4_EDITS	10/10/12	Updated Lab tables, MS_Test_Sub_Category values updated, edited LOINCs information	MSOC
v3.0	09/16/13	Added updated Lab tables, added Age Groups summary table, updated Summary Tables based on Query Tool documentation (v1.4, Jan 2013), added Incident Summary Tables, changed DX length to support SNOMED codes and PX length to support LOINCs ,added allowable value "IN" for the IIS variable in the State Vaccine table, added DX_CodeType and PX_CodeType allowable values, replaced all descriptions in the List of Tables and added a Source column, aligned page headers and footers with page margins, adjusted fonts to be consistent, left-aligned all table column headers, changed "Variable Format" column headers to "Variable Type and Length", changed all references of "file" to "table", changed all references of "field" to "variable", added version number to all footers, reformatted text and made other updates	MSOC
v4.0	12/03/13	Added "Chart" variable to Enrollment table and updated table description and notes; Added "ZIP" and "ZIP_Date" variables to Demographic table and updated table description; removed ALP LOINCs "16182-8" and "33063-9" from Laboratory LOINC Info; added ANC LOINCs "26499-4" and "30451-9", added D_DIMER_QN LOINC "55449-3", added HGBA1C LOINCs "62388-4" and "718875-9", and added PG_QN LOINC "2217-0" to Laboratory LOINC Info; removed Specimen_Source value "NS" from Laboratory Result table; added Specimen_Source values "NPWASH", NWASH" and "OTHER" to Laboratory Result table for INF_A, INF_AB, INF_B, and INF_NS tests; changed Specimen_Source value "NS" to "UNK" in the Laboratory Result table for INF_A, INF_AB, INF_B, and INF_NS tests; added Specimen_Source value "UNK" in the Laboratory Result table for PG_QN and PG_QL tests.	MSOC

MSCDM: Enrollment Table Structure

Description: The MSCDM Enrollment Table has a start/stop structure that contains records on continuous enrollment periods. Members with medical coverage, drug coverage, or both should be included. A unique combination of PatID, Enr_Start, Enr_End, MedCov, DrugCov, and Chart identifies a unique record. A break in enrollment (of at least one day) or a change in the medical coverage, drug coverage, or chart abstraction flag variables should generate a new record.

Variable Name	Variable Type and Length (Bytes)	Values	Definition / Comments / Guideline	Example
PatID[1]	Char (Site specific length)	Unique member identifier	Arbitrary person-level identifier. Used to link across tables. A new enrollment period generates a new record, but the same person should have the same PatID on subsequent records.	123456789012345
Enr_Start[2]	Numeric (4)	SAS date	Date of the **beginning** of the enrollment period. If the exact date is unknown, use the first day of the month. Enr_Start should not be before January 1, 2000.	1/1/2005
Enr_End[2,3]	Numeric (4)	SAS date	Date of the **end** of the enrollment period. If the exact date is unknown, use the last day of the month.	12/31/2005
MedCov	Char (1)	Y = Yes N = No U = Unknown	Mark as "Y" if the health plan has any responsibility for covering medical care for the member during this enrollment period (i.e., if you expect to observe medical care provided to this member during the enrollment period).	Y
DrugCov	Char (1)	Y = Yes N = No U = Unknown	Mark as "Y" if the health plan has any responsibility for covering outpatient prescription drugs for the member during this enrollment period (i.e., if you expect to observe outpatient pharmacy dispensings for this member during this enrollment period).	Y
Chart[4]	Char (1)	Y = Yes N = No	Chart abstraction flag to answer the question, "Are you able to *request* charts for this member?" This flag does not address chart availability. Mark as "Y" if there are no contractual restrictions between you and the member (or sponsor) that would prohibit you from requesting any chart for this member.	Y

NOTES:

1 PatID is a pseudoidentifier with a consistent crosswalk to the true identifier retained by the source Data Partner. For analytical data sets requiring patient-level data, only the pseudoidentifier is used to link across all information belonging to a patient.

2 Adjacent and overlapping enrollment periods with the same PatID, Enr_Start, Enr_End, MedCov, DrugCov, and Chart values should be collapsed. Enrollment periods separated by more than one day should not be bridged. For example, an Enr_End date of 1/31/2005 should be bridged with an Enr_Start date of 2/1/2005, but should not be bridged with an Enr_Start date of 2/2/2005.

3 Enr_End should not be imputed using the date of death found in the Death table.

4 Chart variable aims to identify enrollment periods for which medical charts cannot be requested. Potential scenarios include:

1) Charts cannot be requested for Medicare members (all enrollment periods for Medicare members should be assigned Chart='N')
2) Charts cannot be requested for administrative services only (ASO) populations (all ASO enrollment periods should be assigned Chart='N')

If there is no *definitive* information indicating that medical charts cannot be requested for member enrollment period(s), records should be assigned Chart = 'Y'.

MSCDM: Demographic Table Structure

Description: The MSCDM Demographic Table contains one record per PatID with the most recent information on birth date, sex, race/ethnicity, and ZIP code.

Variable Name	Variable Type and Length (Bytes)	Values	Definition / Comments / Guideline	Example
PatID[1]	Char (Site specific length)	Unique member identifier	Arbitrary person-level identifier. Used to link across tables.	123456789012345
Birth_Date	Numeric (4)	SAS date	Date of birth.	12/5/1971
Sex	Char (1)	A = Ambiguous (e.g., transgender/hermaphrodite)	Sex.	F
		F = Female		
		M = Male		
		U = Unknown		
Hispanic	Char (1)	N = No	A person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin, regardless of race.	N
		U = Unknown		
		Y = Yes		
Race	Char (1)	0 = Unknown	Please use only one race value per member.	2
		1 = American Indian or Alaska Native	A person having origins in any of the original peoples of North and South America (including Central America), and who maintains tribal affiliation or community attachment.	
		2 = Asian	A person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent including, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam.	
		3 = Black or African American	A person having origins in any of the black racial groups of Africa.	
		4 = Native Hawaiian or Other Pacific Islander	A person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands.	
		5 = White	A person having origins in any of the original peoples of Europe, the Middle East, or North Africa.	
Zip	Char (5)	Zip code	First 5 digits of the ZIP code of the member's most recent primary residence.	04090
Zip_Date	Numeric (4)	SAS date	Earliest date that the ZIP code is believed to be valid. Date will be updated/overwritten as ZIP code changes over time.	12/12/2009

NOTE:

1 PatID is a pseudoidentifier with a consistent crosswalk to the true identifier retained by the source Data Partner. For analytical data sets requiring patient-level data, only the pseudoidentifier is used to link across all information belonging to a patient.

MSCDM: Dispensing Table Structure

Description: The MSCDM Outpatient Pharmacy Dispensing Table contains one record per unique combination of PatID, NDC, and RxDate. Each record represents an outpatient pharmacy dispensing. Rollback transactions and other adjustments should be processed before populating this table.[1,2]

Variable Name	Variable Type and Length (Bytes)	Values	Definition / Comments / Guideline	Example
PatID[3]	Char (Site specific length)	Unique member identifier	Arbitrary person-level identifier. Used to link across tables.	123456789012345
RxDate	Numeric (4)	SAS date	Dispensing date (as close as possible to date the person received the dispensing).	11/29/2005
NDC	Char (11)	National Drug Code	Please expunge any place holders (e.g., '-' or extra digit).	00006007431
RxSup[2]	Numeric (4)	Days supply	Number of days that the medication supports based on the number of doses as reported by the pharmacist. This amount is typically found on the dispensings record. It should not be necessary to calculate this variable for use in the MSCDM. Positive integer values are expected.	30
RxAmt[2]	Numeric (4)	Amount dispensed	Number of units (pills, tablets, vials) dispensed. Net amount per NDC per dispensing. This amount is typically found on the dispensings record. It should not be necessary to calculate this variable for use in the MSCDM. Positive values are expected.	60

NOTES:

1 Medications distributed in other settings such as infusions given in medical practices or inpatient hospitals are captured in the utilization tables. Medication prescriptions (as opposed to dispensings) are not currently captured in the MSCDM.

2 Rollback transactions and other adjustments that are indicative of a dispensing being canceled or not picked up by the member should be processed before populating this table. This may be handled differently by Data Partners and may be affected by billing cycles.

3 PatID is a pseudoidentifier with a consistent crosswalk to the true identifier retained by the source Data Partner. For analytical data sets requiring patient-level data, only the pseudoidentifier is used to link across all information belonging to a patient.

MSCDM: Encounter Table Structure

Description: The MSCDM Encounter Table contains one record per PatID and EncounterID (which reflects a unique combination of PatID, ADate, Provider and EncType). Each encounter should have a single record in the MSCDM Encounter Table. Each diagnosis and procedure recorded during the encounter should have a separate record in the Diagnosis or Procedure Tables. Multiple visits to the same provider on the same day should be considered one encounter and should include all diagnoses and procedures that were recorded during those visits. Visits to different providers on the same day, such as a physician appointment that leads to a hospitalization, should be considered multiple encounters. Rollback transactions and other adjustments should be processed before populating this table.[1]

Variable Name	Variable Type and Length (Bytes)	Values	Definition / Comments / Guideline	Example
PatID[2]	Char (Site specific length)	Unique member identifier	Arbitrary person-level identifier. Used to link across tables.	123456789012345
EncounterID[3]	Char (Site specific length)	Unique encounter identifier	A unique combination of PatID, ADate, Provider and EncType. Used to link the Encounter, Diagnosis, and Procedure tables.	123456789012345_12 242005_99218766_IP
ADate	Numeric (4)	SAS date	Encounter or admission date.	12/24/2005
DDate	Numeric (4)	SAS date	Discharge date. Should be populated for all Inpatient Hospital Stay (IP) and Non-Acute Institutional Stay (IS) encounter types. May be populated for Emergency Department (ED) encounter types. Should be missing for ambulatory visit (AV or OA) encounter types.	12/31/2005
Provider[4]	Char (Site specific length)	Unique provider identifier	Provider code for the provider who is most responsible for this encounter. For encounters with multiple providers choose **one** so the encounter can be linked to the diagnosis and procedure tables. As with the PatID, the provider code is a pseudoidentifier with a consistent crosswalk to the real identifier.	99218766
Facility_Location	Char (3)	Geographic location (3 digit zip code)	Should be left blank if missing.	902
EncType	Char (2)	AV = Ambulatory Visit	Includes visits at outpatient clinics, same day surgeries, urgent care visits, and other same-day ambulatory hospital encounters, but excludes emergency department encounters.	IP
		ED = Emergency Department	Includes ED encounters that become inpatient stays (in which case inpatient stays would be a separate encounter). Excludes urgent care visits. ED claims should be pulled before hospitalization claims to ensure that ED with subsequent admission won't be rolled up in the hospital event.	
		IP = Inpatient Hospital Stay	Includes all inpatient stays, same-day hospital discharges, hospital transfers, and acute hospital care where the discharge is after the admission date.	
		IS = Non-Acute Institutional Stay	Includes hospice, skilled nursing facility (SNF), rehab center, nursing home, residential, overnight non-hospital dialysis and other non-hospital stays.	
		OA = Other Ambulatory Visit	Includes other non overnight AV encounters such as hospice visits, home health visits, skilled nursing facility visits, other non-hospital visits, as well as telemedicine, telephone and email consultations.	
Facility_Code	Char (Site specific length)	Servicing provider identifier	Local facility code that identifies hospital or clinic. Taken from facility claims. Used for chart abstraction and validation.	FC12345678
Discharge_ Disposition	Char (1)	A = Discharged alive E = Expired U = Unknown	Should be populated for Inpatient Hospital Stay (IP) and Non-Acute Institutional Stay (IS) encounter types. May be populated for Emergency Department (ED) encounter types. Should be missing for ambulatory visit (AV or OA) encounter types.	A

Variable Name	Variable Type and Length (Bytes)	Values	Definition / Comments / Guideline	Example
Discharge_Status	Char (2)	AF = Adult Foster Home AL = Assisted Living Facility AM = Against Medical Advice AW = Absent without leave EX = Expired HH = Home Health HO = Home / Self Care HS = Hospice IP = Other Acute Inpatient Hospital NH = Nursing Home (Includes ICF) OT = Other RH = Rehabilitation Facility RS = Residential Facility SH = Still In Hospital SN = Skilled Nursing Facility UN = Unknown	Should be populated for Inpatient Hospital Stay (IP) and Non-Acute Institutional Stay (IS) encounter types. May be populated for Emergency Department (ED) encounter types. Should be missing for ambulatory visit (AV or OA) encounter types.	SN
DRG	Char (3)	3-digit Diagnosis Related Group	Diagnosis Related Group. Should be populated for IP and IS encounter types. May be populated for ED encounter types. Should be missing for AV or OA encounters. Use leading zeroes for codes less than 100.	372
DRG_Type	Char (1)	1 = CMS-DRG (old system) 2 = MS-DRG (current system)	DRG code version. MS-DRG (current system) began on 10/1/2007. Should be populated for IP and IS encounter types. May be populated for ED encounter types. Should be missing for AV or OA encounters.	1
Admitting_Source	Char (2)	AF = Adult Foster Home AL = Assisted Living Facility AV = Ambulatory Visit ED = Emergency Department HH = Home Health HO = Home / Self Care HS = Hospice IP = Other Acute Inpatient Hospital NH = Nursing Home (Includes ICF) OT = Other RH = Rehabilitation Facility RS = Residential Facility SN = Skilled Nursing Facility UN = Unknown	Should be populated for Inpatient Hospital Stay (IP) and Non-Acute Institutional Stay (IS) encounter types. May be populated for Emergency Department (ED) encounter types. Should be missing for ambulatory visit (AV or OA) encounter types.	HH

NOTES:

1 Rollback transactions and other adjustments should be processed before populating this table. This may be handled differently by Data Partners and may be affected by billing cycles.

2 PatID is a pseudoidentifier with a consistent crosswalk to the true identifier retained by the source Data Partner. For analytical data sets requiring patient-level data, only the pseudoidentifier is used to link across all information belonging to a patient.

NOTES (cont.):

3 Medical utilization data is captured in 3 tables:

Encounter: the encounter record that characterizes the outpatient visit or hospital stay

Diagnosis: the diagnosis or other clinical code(s) associated with the encounter record

Procedure: the procedure code(s) associated with the encounter record

These 3 tables are linked by EncounterID. All diagnoses and procedures for an encounter should have the same EncounterID. It is allowable to have "orphan" diagnosis or procedure records with EncounterIDs that do not have a match in the Encounter table.

4 The provider variable must be consistent within a health plan. An inpatient stay must only have one Provider, even if multiple providers performed procedures.

MSCDM: Diagnosis Table Structure

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

Variable Name	Variable Type and Length (Bytes)	Values	Definition / Comments / Guideline	Example
PatID[1]	Char (Site specific length)	Unique member identifier	Arbitrary person-level identifier. Used to link across tables.	123456789012345
EncounterID[2]	Char (Site specific length)	Unique encounter identifier	Arbitrary encounter-level identifier. Used to link the Encounter, Diagnosis, and Procedure tables.	123456789012345_12242005_99218766_IP
ADate	Numeric (4)	SAS date	Encounter or admission date.	12/24/2005
Provider	Char (Site specific length)	Unique provider identifier	Provider code for the provider who is most responsible for this encounter. For encounters with multiple providers choose one so the encounter can be linked to the diagnosis and procedure tables. As with the PatID, the provider code is a pseudoidentifier with a consistent crosswalk to the real identifier.	99218766
EncType	Char (2)	AV = Ambulatory Visit	Includes visits at outpatient clinics, same day surgeries, urgent care visits, and other same-day ambulatory hospital encounters, but excludes emergency department encounters.	IP
		ED = Emergency Department	Includes ED encounters that become inpatient stays (in which case inpatient stays would be a separate encounter). Excludes urgent care visits. ED claims should be pulled before hospitalization claims to ensure that ED with subsequent admission won't be rolled up in the hospital event.	
		IP = Inpatient Hospital Stay	Includes all inpatient stays, same-day hospital discharges, hospital transfers, and acute hospital care where the discharge is after the admission date.	
		IS = Non-Acute Institutional Stay	Includes hospice, skilled nursing facility (SNF), rehab center, nursing home, residential, overnight non-hospital dialysis and other non-hospital stays.	
		OA = Other Ambulatory Visit	Includes other non overnight AV encounters such as hospice visits, home health visits, skilled nursing facility visits, other non-hospital visits, as well as telemedicine, telephone and email consultations.	
DX[3]	Char (18)	Diagnosis code	For ICD codes this variable can include decimal points or not. Remove site specific suffixes and prefixes. Other codes should be listed as recorded in the source data.	761.5
Dx_Codetype[4]	Char (2)	09 = ICD-9-CM 10 = ICD-10-CM 11 = ICD-11-CM SM = SNOMED CT OT = Other	Diagnosis code type. This field combined with the DX field should be used to capture any type of diagnosis or clinical concept available in the source data. We provide values for ICD and SNOMED code types. Other code types will be added as new terminologies are used.	09
OrigDX	Char (Site specific length)	Original diagnosis from source table, if different	Used if Data Partner has to map internal codes to standard codes.	

Variable Name	Variable Type and Length (Bytes)	Values	Definition / Comments / Guideline	Example
PDX	Char (1)	P = Principal	Principal discharge diagnosis flag. Relevant only on IP and IS encounters. For ED, AV, and OA encounter types, mark as missing. One principal diagnosis is expected, although in some instances more than one diagnosis may be flagged as principal.	P
		S = Secondary		
		X = Unable to Classify		

NOTES:

1 PatID is a pseudoidentifier with a consistent crosswalk to the true identifier retained by the source Data Partner. For analytical data sets requiring patient-level data, only the pseudoidentifier is used to link across all information belonging to a patient.

2 For efficiency medical utilization data is captured in 3 tables:

Encounter: the encounter record that characterizes the outpatient visit or hospital stay

Diagnosis: the diagnosis code(s) associated with the encounter record

Procedure: the procedure code(s) associated with the encounter record

These 3 tables are linked by EncounterID. All diagnoses and procedures for an encounter should have the same EncounterID. It is allowable to have "orphan" diagnosis or procedure records with EncounterIDs that do not have a match in the Encounter table.

3 For ICD codes, some Data Partners will have a decimal point in the DX variable and others will not. We recommend that users of the data strip the decimal point during data analyses.

4 For those who collect SNOMED CT codes as part of routine care, those codes can be stored in this table, using the "SM" DX_CodeType

MSCDM: Procedure Table Structure

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

Variable Name	Variable Type and Length (Bytes)	Values	Definition / Comments / Guideline	Example
PatID[1]	Char (Site specific length)	Unique member identifier	Arbitrary person-level identifier. Used to link across tables.	123456789012345
EncounterID[2]	Char (Site specific length)	Unique encounter identifier	Arbitrary encounter-level identifier. Used to link the Encounter, Diagnosis, and Procedure tables.	123456789012345_12 262005_99218766_IP
ADate	Numeric (4)	SAS date	Encounter or admission date.	12/26/2005
Provider	Char (Site specific length)	Unique provider identifier	Provider code for the provider who is most responsible for this encounter. For encounters with multiple providers choose one so the encounter can be linked to the diagnosis and procedure tables. As with the PatID, the provider code is a pseudoidentifier with a consistent crosswalk to the real identifier.	99218766
EncType	Char (2)	AV = Ambulatory Visit	Includes visits at outpatient clinics, same day surgeries, urgent care visits, and other same-day ambulatory hospital encounters, but excludes emergency department encounters.	IP
		ED = Emergency Department	Includes ED encounters that become inpatient stays (in which case inpatient stays would be a separate encounter). Excludes urgent care visits. ED claims should be pulled before hospitalization claims to ensure that ED with subsequent admission won't be rolled up in the hospital event.	
		IP = Inpatient Hospital Stay	Includes all inpatient stays, same-day hospital discharges, hospital transfers, and acute hospital care where the discharge is after the admission date.	
		IS = Non-Acute Institutional Stay	Includes hospice, skilled nursing facility (SNF), rehab center, nursing home, residential, overnight non-hospital dialysis and other non-hospital stays.	
		OA = Other Ambulatory Visit	Includes other non overnight AV encounters such as hospice visits, home health visits, skilled nursing facility visits, other non-hospital visits, as well as telemedicine, telephone and email consultations.	
PX	Char (11)	Procedure code	Convert local codes to standard codes.	76815
PX_CodeType	Char (2)	09 = ICD-9-CM 10 = ICD-10-CM 11 = ICD-11-CM C2 = CPT Category II C3 = CPT Category III C4 = CPT-4 (i.e., HCPCS Level I) H3 = HCPCS Level III HC = HCPCS (i.e., HCPCS Level II) LC = LOINC LO = Local homegrown ND = NDC OT = Other RE = Revenue	Procedure code type.	C4

Procedure Table Structure (cont.)

Variable Name	Variable Type and Length (Bytes)	Values	Definition / Comments / Guideline	Example
OrigPX	Char (Site specific length)	Original procedure code from source table, if different.	Used if Data Partner has to map internal codes to standard codes.	

NOTES:

1 PatID is a pseudoidentifier with a consistent crosswalk to the true identifier retained by the source Data Partner. For analytical data sets requiring patient-level data, only the pseudoidentifier is used to link across all information belonging to a patient.

2 For efficiency medical utilization data is captured in 3 tables:

Encounter: the encounter record that characterizes the outpatient visit or hospital stay

Diagnosis: the diagnosis code(s) associated with the encounter record

Procedure: the procedure code(s) associated with the encounter record

These 3 tables are linked by EncounterID. All diagnoses and procedures for an encounter should have the same EncounterID. It is allowable to have "orphan" diagnosis or procedure records with EncounterIDs that do not have a match in the Encounter table.

MSCDM: Death Table Structure

Description: The MSCDM Death Table contains one record per PatID.[1,2] When legacy data have conflicting reports, please make a local determination as to which to use. There is typically a 1-2 year lag in death registry data.

Variable Name	Variable Type and Length (Bytes)	Values	Definition / Comments / Guideline	Example
PatID[2]	Char (Site specific length)	Unique member identifier	Arbitrary person-level identifier. Used to link across tables.	123456789012345
DeathDt	Numeric (4)	SAS date	Date of death.	1/1/2006
DtImpute	Char (1)	B = Both month and day imputed	When DeathDt is imputed, this variable indicates which parts of the date were imputed.	N
		D = Day imputed		
		M = Month imputed		
		N = Not imputed		
Source	Char (1)	L = Other, locally defined	Source of death information.	S
		N = National Death Index		
		S = State Death files		
		T = Tumor data		
Confidence	Char (1)	E = Excellent	Confidence that the patient drawn from the Source data represents the actual patient (contrasts with Confidence in the Cause of Death table).	E
		F = Fair		
		P = Poor		

NOTE:

1 For efficiency death data is captured in 2 tables:

Death: the record that characterizes the death date and source of that information

Cause of Death: the cause(s) of death associated with the death record

These 2 tables are linked by PatID. All Cause of Death records have a matching PatID in the Death Table.

2 PatID is a pseudoidentifier with a consistent crosswalk to the true identifier retained by the source Data Partner. For analytical data sets requiring patient-level data, only the pseudoidentifier is used to link across all information belonging to a patient.

MSCDM: Cause of Death Table Structure

Description: The MSCDM Cause of Death Table contains one record per unique combination of PatID and COD.[1,2] When legacy data have conflicting reports, please make a local determination as to which to use. There is typically a 1-2 year lag in death registry data.

Variable Name	Variable Type and Length (Bytes)	Values	Definition / Comments / Guideline	Example
PatID[2]	Char (Site specific length)	Unique member identifier	Arbitrary person-level identifier. Used to link across tables.	123456789012345
COD	Char (8)	Diagnosis code	Cause of death code. Please include the decimal point in ICD codes (if any).	J18.0
CodeType	Char (2)	09 = ICD-9 10 = ICD-10	Cause of death code type.	09
CauseType	Char (1)	C = Contributory I = Immediate/Primary O = Other U = Underlying	Cause of death type. There should be only one underlying cause of death.	C
Source	Char (1)	L = Other, locally defined N = National Death Index S = State Death files T = Tumor data	Source of cause of death information.	S
Confidence	Char (1)	E = Excellent F = Fair P = Poor	Confidence in the accuracy of the cause of death based on source, match, number of reporting sources, discrepancies, etc.	E

NOTE:

1 For efficiency death data is captured in 2 tables:

Death: the record that characterizes the death date and source of that information

Cause of Death: the cause(s) of death associated with the death record

These 2 tables are linked by PatID. All Cause of Death records have a matching PatID in the Death Table.

2 PatID is a pseudoidentifier with a consistent crosswalk to the true identifier retained by the source Data Partner. For analytical data sets requiring patient-level data, only the pseudoidentifier is used to link across all information belonging to a patient.

MSCDM: Laboratory Result Table Structure

Description: The MSCDM Laboratory Result Table contains 1 record per result/entry. Only include resulted lab tests.[1]

Variable Name	Variable Type and Length (Bytes)	Values	Definition / Comments / Guideline	Example
PatID[2]	Char (Site specific length)	Unique member identifier	Arbitrary person-level identifier. Used to link across tables.	123456789012345
MS_Test_Name	Char (10)	ALP = alkaline phosphatase ALT = alanine aminotransferase ANC = absolute neutrophil count BILI_TOT = total bilirubin CK = creatine kinase total CK_MB = creatine kinase MB CK_MBI = creatine kinase MB/creatine kinase total CREATININE = creatinine D_DIMER_QL = d-dimer (qualitative) D_DIMER_QN = d-dimer (quantitative) GLUCOSE = glucose HGB = hemoglobin HGBA1C = glycosylated hemoglobin INF_A = influenza virus A INF_AB = influenza virus A + B INF_B = influenza virus B INF_NS = influenza virus not specified INR = international normalized ratio LIPASE = lipase PG_QL = pregnancy test (qualitative) PG_QN = pregnancy test (quantitative) PLATELETS = platelet count TROP_I = troponin I cardiac TROP_T_QL = troponin T cardiac (qualitative) TROP_T_QN = troponin T cardiac (quantitative)	Abbreviation for the type of test. Several LOINC codes (LOINC) and/or local codes (LOCAL_CD) can point to one MS_Test_Name.	ALP

Variable Name	Variable Type and Length (Bytes)	Values	Definition / Comments / Guideline	Example
MS_Test_Sub_Category	Char (6)	BHCG = beta human choriogonadotropin DDU = d-dimer units EIA = enzyme immunoassay FEU = fibrinogen equivalent units FST = fasting HCG = human choriogonadotropin IF = immunofluorescence NS = not specified PCR = probe and target amplification RAN = random VTC = organism-specific culture	Sub-category for MS_Test_Name. Not all MS_Test_Names have sub-categories. Please see the Laboratory Result Guideline Table for additional details on how to populate this variable.	FST
Specimen_Source	Char (6)	BAL = bronchoalveolar lavage BALBX = bronchoalveolar biopsy BLOOD = blood CSF = cerebrospinal fluid NPH = nasopharyngeal swab NPWASH = nasopharyngeal wash NSWAB = nasal swab or nose specimen NWASH = nasal wash OTHER = other PLASMA = plasma PPP = platelet poor plasma SERUM = serum SPUTUM = sputum SR_PLS = serum/plasma THRT = throat swab, oropharyngeal swab UNK = unknown or missing URINE = urine	Specimen source. All MS_Test_Names have a specimen source; some tests have several possible values for Specimen_Source. Please see the Laboratory Result Guideline Table for additional details on how to populate this variable.	SERUM
LOINC	Char (10)	LOINC code	Logical Observation Identifiers, Names, and Codes (LOINC) from the Regenstrief Institute. Results with local versions of LOINC codes (e.g., LOINC candidate codes) should be included in the table but the LOINC variable should be set to missing. Current LOINC codes are from 3-7 characters long but Regenstrief suggests a length of 10 for future growth. The last digit of the LOINC code is a check digit and is always preceded by a hyphen. All parts of the LOINC code, including the hyphen, must be included. Do not pad the LOINC code with leading zeros. Please see the Laboratory LOINC Information Table for known LOINC codes for each MS_Test_Name.	16182-8
Stat	Char (1)	E = Expedite R = Routine S = Stat U = Unknown or missing	Immediacy of test. The intent of this variable is to determine whether the test was obtained as part of routine care or as an emergent/urgent diagnostic test (designated as Stat or Expedite).	E

Laboratory Result Table Structure (cont.)

Variable Name	Variable Type and Length (Bytes)	Values	Definition / Comments / Guideline	Example
Pt_Loc	Char (1)	E = Emergency department H = Home I = Inpatient O = Outpatient U = Unknown or missing	Patient location where the lab specimen was obtained.	O
Result_Loc	Char (1)	L = Lab P = Point of Care	Location of the test result. Point of Care locations may include anticoagulation clinic, newborn nursery, finger stick in provider office, or home. The default value is 'L' unless the result is Point of Care. There should not be any missing values.	L
LOCAL_CD	Char (Site specific length)	Unique to each Data Partner	Local code (non-LOINC) related to an individual lab test. This variable will not be used in queries, but may be used by local programmers to associate a record with a particular MS_Test_Name.	
BATTERY_CD	Char (Site specific length)	Unique to each Data Partner	Local code (non-LOINC) related to a battery or panel of lab tests. This variable will not be used in queries, but may be used by local programmers to associate a record with a particular MS_Test_Name.	
PX	Char (Site specific length)	Procedure code	Optional variable for local and standard procedure codes.	76815
PX_CodeType	Char (2)	09 = ICD-9-CM 10 = ICD-10-CM 11 = ICD-11-CM C2 = CPT Category II C3 = CPT Category III C4 = CPT-4 (i.e., HCPCS Level I) H3 = HCPCS Level III HC = HCPCS (i.e., HCPCS Level II) LO = Local homegrown OT = Other RE = Revenue	Procedure code type.	C4
Order_dt	Numeric (4)	SAS date	Date test was ordered.	11/29/2005
Lab_dt	Numeric (4)	SAS date	Date specimen collected.	11/29/2005
Lab_tm	Numeric (4)	SAS time	Time specimen collected.	
Result_dt	Numeric (4)	SAS date	Result date.	12/1/2005
Result_tm	Numeric (4)	SAS time	Result time.	
Orig_Result	Char (8)	Text	The original test result value as seen in your source data. Values may include a decimal point, a sign or text (e.g., POSITIVE, NEGATIVE, DETECTED). The symbols >, <, >=, <= should be removed from the value and stored in the Modifier variable instead.	+
MS_Result_C	Char (12)	BORDERLINE NEGATIVE POSITIVE UNDETERMINED	Standardized result for qualitative results. This variable should be left blank for quantitative results. Please see the Laboratory Result Guideline Table for additional details and information on acceptable values for each qualitative MS_Test_Name.	POSITIVE
MS_Result_N	Numeric (8)	Numeric	Standardized/converted result for quantitative results. This variable should be left blank for qualitative results. Please see the Laboratory Result Guideline Table for additional details.	100

Variable Name	Variable Type and Length (Bytes)	Values	Definition / Comments / Guideline	Example
Modifier	Char (2)	EQ = equal GE = greater than or equal to GT = greater than LE = less than or equal to LT = less than TX = text	Modifier for result values. Any symbols in the original source data value should be reflected in the Modifier variable. For example, if the original source data value is "<=200" then Orig_Result = 200 and Modifier = LE. If the original source data value is text then Modifier = TX. If the original source data value is a numeric value then Modifier = EQ.	LE
Orig_Result_unit	Char (11)	Text	Original units for the result in your source data.	MILLIGRAM/DL
Std_Result_unit	Char (11)	Text	Standardized units for the result. All text values for Orig_Result_unit should be converted to uppercase. Standard abbreviations should be used. Please see the Laboratory Standard Abbreviations Table for additional details.	MG/DL
MS_Result_unit	Char (11)	Text	Converted/standardized units for the result. Please see the Laboratory Result Guideline Table for additional details.	G/L
Norm_Range_low	Char (8)	Text	Lower bound of the normal range assigned by the laboratory. Value should only contain the value of the lower bound. The symbols >, <, >=, <= should be removed. For example, if the normal range for a test is >100 and <300, then "100" should be entered.	100
Modifier_low	Char (2)	EQ = equal GE = greater than or equal to GT = greater than	Modifier for Norm_Range_low values. For numeric results one of the following needs to be true: 1) Both Modifier_low and Modifier_high contain EQ (e.g. normal values fall in the range 3-10) 2) Modifier_low contains GT or GE and Modifier_high contains blank (e.g. normal values are >3 with no upper boundary) 3) Modifier_high contains LT or LE and Modifier_low contains blank (e.g. normal values are <=10 with no lower boundary)	EQ
Norm_Range_high	Char (8)	Text	Upper bound of the normal range assigned by the laboratory. Value should only contain the value of the upper bound. The symbols >, <, >=, <= should be removed. For example, if the normal range for a test is >100 and <300, then "300" should be entered.	300
Modifier_high	Char (2)	EQ = equal LE = less than or equal to LT = less than	Modifier for Norm_Range_high values. For numeric results one of the following needs to be true: 1) Both Modifier_low and Modifier_high contain EQ (e.g. normal values fall in the range 3-10) 2) Modifier_low contains GT or GE and Modifier_high contains blank (e.g. normal values are >3 with no upper boundary) 3) Modifier_high contains LT or LE and Modifier_low contains blank (e.g. normal values are <=10 with no lower boundary)	GT

Variable Name	Variable Type and Length (Bytes)	Values	Definition / Comments / Guideline	Example
Abn_ind	Char (2)	AB = abnormal AH = abnormally high AL = abnormally low CH = critically high CL = critically low CR = critical IN = inconclusive NL = normal UN = unknown	Abnormal result indicator. This value comes from the source data; do not apply logic to create it. If you have questions about how to fit your source values into the list shown, please contact MSOC.	AB
Order_dept	Char (Site Specific length)	Unique to each Data Partner	Local code for ordering provider department.	
Facility_Code	Char (Site Specific length)	Servicing provider identifier	Local facility code that identifies the hospital or clinic. Taken from facility claims.	FC12345678

NOTES:

1 Only records with actual lab results should be included in this table. If the result suggests that the test was run (e.g., result is "borderline" or "inconclusive") include it. But if the test is not resulted for any reason (specimen not sufficient, patient did not show) then do not include it.

2 PatID is a pseudoidentifier with a consistent crosswalk to the true identifier retained by the source Data Partner. For analytical data sets requiring patient-level data, only the pseudoidentifier is used to link across all information belonging to a patient.

MSCDM: Laboratory Result Guideline Table

Description: The MSCDM Laboratory Result Guideline Table depicts acceptable values for selected Laboratory Result Table variables. These values are test type specific. ***Please see the Laboratory LOINC Information Table for currently known LOINC codes for each MS_Test_Name.***

Test Type	Variable Name	Variable Type and Length (Bytes)	Values	Definition / Comments / Guideline
Alkaline phosphatase	MS_Test_Name	Char (10)	ALP	
	MS_Test_Sub_Category	Char (6)		This should be left blank.
	Specimen_Source	Char (6)	PLASMA = plasma SERUM = serum SR_PLS = serum/plasma UNK = unknown or missing	If you find other specimen sources in your data for this test, please contact MSOC for guidance.
	MS_Result_C	Char (12)		ALP should have only numeric results. But if Orig_Result contains text (e.g., "POSITIVE") then set MS_Result_C = Orig_Result so that the result value is retained. This guidance may change in the future.
	MS_Result_N	Numeric (8)		Numeric result in U/L. MSOC will provide guidance on how to convert results with other units; until then set MS_Result_N = Orig_Result and set MS_Result_unit equal to the units in your source data.
	MS_Result_unit	Char (11)	U/L	Units per liter. For this test, IU/L means the same thing as U/L.
Alanine aminotransferase	MS_Test_Name	Char (10)	ALT	Serum glutamic-pyruvic transaminase (SGPT) is an older name for this enzyme.
	MS_Test_Sub_Category	Char (6)		This should be left blank.
	Specimen_Source	Char (6)	BLOOD = blood PLASMA = plasma SERUM = serum SR_PLS = serum/plasma UNK = unknown or missing	If you find other specimen sources in your data for this test, please contact MSOC for guidance.
	MS_Result_C	Char (12)		ALT should have only numeric results. But if Orig_Result contains text (e.g., "POSITIVE") then set MS_Result_C = Orig_Result so that the result value is retained. This guidance may change in the future.
	MS_Result_N	Numeric (8)		Numeric result in U/L. MSOC will provide guidance on how to convert results with other units; until then set MS_Result_N = Orig_Result and set MS_Result_unit equal to the units in your source data.
	MS_Result_unit	Char (11)	U/L	Units per liter. For this test, IU/L means the same thing as U/L.
Absolute neutrophil count	MS_Test_Name	Char (10)	ANC	
	MS_Test_Sub_Category	Char (6)		This should be left blank.
	Specimen_Source	Char (6)	BLOOD = blood UNK = unknown or missing	If you find other specimen sources in your data for this test, please contact MSOC for guidance.
	MS_Result_C	Char (12)		ANC should have only numeric results. But if Orig_Result contains text (e.g., "POSITIVE") then set MS_Result_C = Orig_Result so that the result value is retained. This guidance may change in the future.
	MS_Result_N	Numeric (8)		Numeric result in K/UL. MSOC will provide guidance on how to convert results with other units; until then set MS_Result_N = Orig_Result and set MS_Result_unit equal to the units in your source data.
	MS_Result_unit	Char (11)	K/UL	One thousand per microliter. One thousand per microliter is equivalent to one billion per liter (i.e., K/UL = 10*9/L). One microliter is equivalent to one cubic millimeter (i.e., UL = MM*3).

Test Type	Variable Name	Variable Type and Length (Bytes)	Values	Definition / Comments / Guideline
Total bilirubin	MS_Test_Name	Char (10)	BILI_TOT	Do not include cord blood bilirubin results.
	MS_Test_Sub_Category	Char (6)		This should be left blank.
	Specimen_Source	Char (6)	BLOOD = blood PLASMA = plasma SERUM = serum SR_PLS = serum/plasma UNK = unknown or missing	If you find other specimen sources in your data for this test, please contact MSOC for guidance.
	MS_Result_C	Char (12)		BILI_TOT should have only numeric results. But if Orig_Result contains text (e.g., "POSITIVE") then set MS_Result_C = Orig_Result so that the result value is retained. This guidance may change in the future.
	MS_Result_N	Numeric (8)		Numeric result in MG/DL. MSOC will provide guidance on how to convert results with other units; until then set MS_Result_N = Orig_Result and set MS_Result_unit equal to the units in your source data.
	MS_Result_unit	Char (11)	MG/DL	Milligrams per deciliter. Some results may be reported as millimoles per liter (MMOL/L). MSOC will provide guidance on how to convert MMOL/L to MG/DL; until then set MS_Result_unit = MMOL/L.
Creatine kinase total	MS_Test_Name	Char (10)	CK	Creatine phosphokinase (CPK) is an older name for this enzyme.
	MS_Test_Sub_Category	Char (6)		This should be left blank.
	Specimen_Source	Char (6)	BLOOD = blood PLASMA = plasma SERUM = serum SR_PLS = serum/plasma UNK = unknown or missing	If you find other specimen sources in your data for this test, please contact MSOC for guidance.
	MS_Result_C	Char (12)		CK should have only numeric results. But if Orig_Result contains text (e.g., "POSITIVE") then set MS_Result_C = Orig_Result so that the result value is retained. This guidance may change in the future.
	MS_Result_N	Numeric (8)		Numeric result in U/L. MSOC will provide guidance on how to convert results with other units; until then set MS_Result_N = Orig_Result and set MS_Result_unit equal to the units in your source data.
	MS_Result_unit	Char (11)	U/L	Units per liter.
Creatine kinase-MB	MS_Test_Name	Char (10)	CK_MB	
	MS_Test_Sub_Category	Char (6)		This should be left blank.
	Specimen_Source	Char (6)	BLOOD = blood PLASMA = plasma SERUM = serum SR_PLS = serum/plasma UNK = unknown or missing	If you find other specimen sources in your data for this test, please contact MSOC for guidance.
	MS_Result_C	Char (12)		CK_MB should have only numeric results. But if Orig_Result contains text (e.g., "POSITIVE") then set MS_Result_C = Orig_Result so that the result value is retained. This guidance may change in the future.
	MS_Result_N	Numeric (8)		Numeric result in U/L or NG/ML. MSOC will provide guidance on how to convert results with other units; until then set MS_Result_N = Orig_Result and set MS_Result_unit equal to the units in your source data.
	MS_Result_unit	Char (11)	U/L or NG/ML	Units per liter for enzymatic activity tests (e.g., LOINCs 2154-3, 32673-6). Nanograms per milliliter for mass/volume tests (e.g., LOINCs 13969-1, 49551-5). Nanograms per milliliter is equivalent to micrograms per liter (i.e., NG/ML = UG/L).

Test Type	Variable Name	Variable Type and Length (Bytes)	Values	Definition / Comments / Guideline
Creatine kinase MB/creatine kinase total	MS_Test_Name	Char (10)	CK_MBI	
	MS_Test_Sub_Category	Char (6)		This should be left blank.
	Specimen_Source	Char (6)	BLOOD = blood	If you find other specimen sources in your data for this test, please contact MSOC for guidance.
			PLASMA = plasma	
			SERUM = serum	
			SR_PLS = serum/plasma	
			UNK = unknown or missing	
	MS_Result_C	Char (12)		CK_MBI should have only numeric results. But if Orig_Result contains text (e.g., "POSITIVE") then set MS_Result_C = Orig_Result so that the result value is retained. This guidance may change in the future.
	MS_Result_N	Numeric (8)		Numeric result as an integer with up to 1 decimal place. For example, if the original result value is "5.1%" then MS_Result_N should be "5.1" and not "0.051".
	MS_Result_unit	Char (11)	PERCENT	Percent.
Creatinine	MS_Test_Name	Char (10)	CREATININE	Do not include creatinine results pre-, during, or post-dialysis.
	MS_Test_Sub_Category	Char (6)		This should be left blank.
	Specimen_Source	Char (6)	BLOOD = blood	If you find other specimen sources in your data for this test, please contact MSOC for guidance.
			PLASMA = plasma	
			SERUM = serum	
			SR_PLS = serum/plasma	
			UNK = unknown or missing	
	MS_Result_C	Char (12)		CREATININE should have only numeric results. But if Orig_Result contains text (e.g., "POSITIVE") then set MS_Result_C = Orig_Result so that the result value is retained. This guidance may change in the future.
	MS_Result_N	Numeric (8)		Numeric result in MG/DL. MSOC will provide guidance on how to convert results with other units; until then set MS_Result_N = Orig_Result and set MS_Result_unit equal to the units in your source data.
	MS_Result_unit	Char (11)	MG/DL	Milligrams per deciliter.
D-dimer (qualitative)	MS_Test_Name	Char (10)	D_DIMER_QL	
	MS_Test_Sub_Category	Char (6)		This should be left blank.
	Specimen_Source	Char (6)	BLOOD = blood	If you find other specimen sources in your data for this test, please contact MSOC for guidance.
			PPP = platelet poor plasma	
			UNK = unknown or missing	
	MS_Result_C	Char (12)	NEGATIVE	
			POSITIVE	
			UNDETERMINED	
	MS_Result_N	Numeric (8)		This should be left blank.
	MS_Result_unit	Char (11)		This should be left blank.

Test Type	Variable Name	Variable Type and Length (Bytes)	Values	Definition / Comments / Guideline
D-dimer (quantitative)	MS_Test_Name	Char (10)	D_DIMER_QN	
	MS_Test_Sub_Category	Char (6)	DDU = d-dimer units FEU = fibrinogen equivalent units NS = not specified	Original result units may indicate whether the sub-category is DDU or FEU. This information can sometimes be determined from the LOINC code.
	Specimen_Source	Char (6)	BLOOD = blood PPP = platelet poor plasma UNK = unknown or missing	If you find other specimen sources in your data for this test, please contact MSOC for guidance.
	MS_Result_C	Char (12)		D_DIMER_QN should have only numeric results. But if Orig_Result contains text (e.g., "POSITIVE") then set MS_Result_C = Orig_Result so that the result value is retained. This guidance may change in the future.
	MS_Result_N	Numeric (8)		Numeric result in NG/ML. MSOC will provide guidance on how to convert results with other units; until then set MS_Result_N = Orig_Result and set MS_Result_unit equal to the units in your source data.
	MS_Result_unit	Char (11)	NG/ML	Nanograms per milliliter. Nanograms per milliliter is equivalent to micrograms per liter (i.e., NG/ML = UG/L). Do not include "FEU" or "DDU" in MS_Result_unit.
Glucose	MS_Test_Name	Char (10)	GLUCOSE	Do not include cord blood glucose results.
	MS_Test_Sub_Category	Char (6)	FST = fasting RAN = random	For results that are not designated FST please code as RAN.
	Specimen_Source	Char (6)	BLOOD = blood PLASMA = plasma SERUM = serum SR_PLS = serum/plasma UNK = unknown or missing	If you find other specimen sources in your data for this test, please contact MSOC for guidance.
	MS_Result_C	Char (12)		GLUCOSE should have only numeric results. But if Orig_Result contains text (e.g., "POSITIVE") then set MS_Result_C = Orig_Result so that the result value is retained. This guidance may change in the future.
	MS_Result_N	Numeric (8)		Numeric result in MG/DL. MSOC will provide guidance on how to convert results with other units; until then set MS_Result_N = Orig_Result and set MS_Result_unit equal to the units in your source data.
	MS_Result_unit	Char (11)	MG/DL	Milligrams per deciliter.
Hemoglobin	MS_Test_Name	Char (10)	HGB	Do not include cord blood hemoglobin results.
	MS_Test_Sub_Category	Char (6)		This should be left blank.
	Specimen_Source	Char (6)	BLOOD = blood UNK = unknown or missing	If you find other specimen sources in your data for this test, please contact MSOC for guidance.
	MS_Result_C	Char (12)		HGB should have only numeric results. But if Orig_Result contains text (e.g., "POSITIVE") then set MS_Result_C = Orig_Result so that the result value is retained. This guidance may change in the future.
	MS_Result_N	Numeric (8)		Numeric result in G/DL. MSOC will provide guidance on how to convert results with other units; until then set MS_Result_N = Orig_Result and set MS_Result_unit equal to the units in your source data.
	MS_Result_unit	Char (11)	G/DL	Grams per deciliter.

Test Type	Variable Name	Variable Type and Length (Bytes)	Values	Definition / Comments / Guideline
Glycosylated hemoglobin	MS_Test_Name	Char (10)	HGBA1C	
	MS_Test_Sub_Category	Char (6)		This should be left blank.
	Specimen_Source	Char (6)	BLOOD = blood	If you find other specimen sources in your data for this test, please contact MSOC for guidance.
			UNK = unknown or missing	
	MS_Result_C	Char (12)		HGBA1C should have only numeric results. But if Orig_Result contains text (e.g., "POSITIVE") then set MS_Result_C = Orig_Result so that the result value is retained. This guidance may change in the future.
	MS_Result_N	Numeric (8)		Numeric result as an integer with up to 1 decimal place. For example, if the original result value is "5.1%" then MS_Result_N should be "5.1" and not "0.051".
	MS_Result_unit	Char (11)	PERCENT	Percent.
Influenza virus A	MS_Test_Name	Char (10)	INF_A	Do not include antibody test results, only antigen test results.
	MS_Test_Sub_Category	Char (6)	EIA = enzyme immunoassay	For sub-category EIA, Specimen_Source is expected to be NPH, NPWASH, NSWAB, NWASH, OTHER, THRT, or UNK.
			IF = immunofluorescence	For sub-category IF, Specimen_Source is expected to be BAL, NPH, NPWASH, NSWAB, NWASH, OTHER, THRT, or UNK.
			NS = not specified	For sub-category NS, Specimen_Source is expected to be BAL, NPH, NPWASH, NSWAB, NWASH, OTHER, THRT, or UNK.
			PCR = probe and target amplification	For sub-category PCR, Specimen_Source is expected to be NPH, NPWASH, NWASH, OTHER, or UNK.
			VTC = organism-specific culture	For sub-category VTC, Specimen_Source is expected to be NPH, NPWASH, NWASH, OTHER, THRT, or UNK.
	Specimen_Source	Char (6)	BAL = bronchoalveolar lavage	For specimen source BAL, MS_Test_Sub_Category is expected to be IF or NS.
			NPH = nasopharyngeal swab	For specimen source NPH, MS_Test_Sub_Category is expected to be EIA, IF, NS, PCR, or VTC.
			NPWASH = nasopharyngeal wash	For specimen source NPWASH, MS_Test_Sub_Category is expected to be EIA, IF, NS, PCR, or VTC.
			NSWAB = nasal swab or nose specimen	For specimen source NSWAB, MS_Test_Sub_Category is expected to be EIA, IF, or NS.
			NWASH = nasal wash	For specimen source NWASH, MS_Test_Sub_Category is expected to be EIA, IF, NS, PCR, or VTC.
			OTHER	For specimen source OTHER, MS_Test_Sub_Category is expected to be EIA, IF, NS, PCR, or VTC.
			THRT = throat swab, oropharyngeal swab	For specimen source THRT, MS_Test_Sub_Category is expected to be EIA, IF, NS, or VTC.
			UNK = unknown or missing	For specimen source UNK, MS_Test_Sub_Category is expected to be EIA, IF, NS, PCR, or VTC.
				If you find other specimen sources in your data for this test, please contact MSOC for guidance.
	MS_Result_C	Char (12)	NEGATIVE	
			POSITIVE	
			UNDETERMINED	
	MS_Result_N	Numeric (8)		This should be left blank.
	MS_Result_unit	Char (11)		This should be left blank.

Test Type	Variable Name	Variable Type and Length (Bytes)	Values	Definition / Comments / Guideline
Influenza virus A + B	MS_Test_Name	Char (10)	INF_AB	Do not include antibody test results, only antigen test results.
	MS_Test_Sub_Category	Char (6)	EIA = enzyme immunoassay	For sub-category EIA, Specimen_Source is expected to be NPH, NPWASH, NSWAB, NWASH, OTHER, THRT, or UNK.
			IF = immunofluorescence	For sub-category IF, Specimen_Source is expected to be BAL, NPH, NPWASH, NSWAB, NWASH, OTHER, THRT, or UNK.
			NS = not specified	For sub-category NS, Specimen_Source is expected to be BAL, NPH, NPWASH, NSWAB, NWASH, OTHER, THRT, or UNK.
			PCR = probe and target amplification	For sub-category PCR, Specimen_Source is expected to be NPH, NPWASH, NWASH, OTHER, or UNK.
			VTC = organism-specific culture	For sub-category VTC, Specimen_Source is expected to be NPH, NPWASH, NWASH, OTHER, THRT, or UNK.
	Specimen_Source	Char (6)	BAL = bronchoalveolar lavage	For specimen source BAL, MS_Test_Sub_Category is expected to be IF or NS.
			NPH = nasopharyngeal swab	For specimen source NPH, MS_Test_Sub_Category is expected to be EIA, IF, NS, PCR, or VTC.
			NPWASH = nasopharyngeal wash	For specimen source NPWASH, MS_Test_Sub_Category is expected to be EIA, IF, NS, PCR, or VTC.
			NSWAB = nasal swab or nose specimen	For specimen source NSWAB, MS_Test_Sub_Category is expected to be EIA, IF, or NS.
			NWASH = nasal wash	For specimen source NWASH, MS_Test_Sub_Category is expected to be EIA, IF, NS, PCR, or VTC.
			OTHER	For specimen source OTHER, MS_Test_Sub_Category is expected to be EIA, IF, NS, PCR, or VTC.
			THRT = throat swab, oropharyngeal swab	For specimen source THRT, MS_Test_Sub_Category is expected to be EIA, IF, NS, or VTC.
			UNK = unknown or missing	For specimen source UNK, MS_Test_Sub_Category is expected to be EIA, IF, NS, PCR, or VTC.
				If you find other specimen sources in your data for this test, please contact MSOC for guidance.
	MS_Result_C	Char (12)	NEGATIVE	
			POSITIVE	
			UNDETERMINED	
	MS_Result_N	Numeric (8)		This should be left blank.
	MS_Result_unit	Char (11)		This should be left blank.
Influenza virus B	MS_Test_Name	Char (10)	INF_B	Do not include antibody test results, only antigen test results.
	MS_Test_Sub_Category	Char (6)	EIA = enzyme immunoassay	For sub-category EIA, Specimen_Source is expected to be NPH, NPWASH, NSWAB, NWASH, OTHER, THRT, or UNK.
			IF = immunofluorescence	For sub-category IF, Specimen_Source is expected to be BAL, NPH, NPWASH, NSWAB, NWASH, OTHER, THRT, or UNK.
			NS = not specified	For sub-category NS, Specimen_Source is expected to be BAL, NPH, NPWASH, NSWAB, NWASH, OTHER, THRT, or UNK.
			PCR = probe and target amplification	For sub-category PCR, Specimen_Source is expected to be NPH, NPWASH, NWASH, OTHER, or UNK.
			VTC = organism-specific culture	For sub-category VTC, Specimen_Source is expected to be NPH, NPWASH, NWASH, OTHER, THRT, or UNK.
	Specimen_Source	Char (6)	BAL = bronchoalveolar lavage	For specimen source BAL, MS_Test_Sub_Category is expected to be IF or NS.
			NPH = nasopharyngeal swab	For specimen source NPH, MS_Test_Sub_Category is expected to be EIA, IF, NS, PCR, or VTC.
			NPWASH = nasopharyngeal wash	For specimen source NPWASH, MS_Test_Sub_Category is expected to be EIA, IF, NS, PCR, or VTC.
			NSWAB = nasal swab or nose specimen	For specimen source NSWAB, MS_Test_Sub_Category is expected to be EIA, IF, or NS.
			NWASH = nasal wash	For specimen source NWASH, MS_Test_Sub_Category is expected to be EIA, IF, NS, PCR, or VTC.
			OTHER	For specimen source OTHER, MS_Test_Sub_Category is expected to be EIA, IF, NS, PCR, or VTC.
			THRT = throat swab, oropharyngeal swab	For specimen source THRT, MS_Test_Sub_Category is expected to be EIA, IF, NS, or VTC.
			UNK = unknown or missing	For specimen source UNK, MS_Test_Sub_Category is expected to be EIA, IF, NS, PCR, or VTC.
				If you find other specimen sources in your data for this test, please contact MSOC for guidance.
	MS_Result_C	Char (12)	NEGATIVE	
			POSITIVE	
			UNDETERMINED	
	MS_Result_N	Numeric (8)		This should be left blank.
	MS_Result_unit	Char (11)		This should be left blank.

Test Type	Variable Name	Variable Type and Length (Bytes)	Values	Definition / Comments / Guideline
Influenza virus not specified	MS_Test_Name	Char (10)	INF_NS	Do not include antibody test results, only antigen test results.
	MS_Test_Sub_Category	Char (6)	NS = not specified	For sub-category NS, Specimen_Source is expected to be UNK.
			PCR = probe and target amplification	For sub-category PCR, Specimen_Source is expected to be NPH, NPWASH, NWASH, OTHER, or UNK.
			VTC = organism-specific culture	For sub-category VTC, Specimen_Source is expected to be NPWASH, NWASH, OTHER, SPUTUM, THRT, or UNK.
	Specimen_Source	Char (6)	NPH = nasopharyngeal swab	For specimen source NPH, MS_Test_Sub_Category is expected to be PCR.
			NPWASH = nasopharyngeal wash	For specimen source NPWASH, MS_Test_Sub_Category is expected to be NS, PCR, or VTC.
			NWASH = nasal wash	For specimen source NWASH, MS_Test_Sub_Category is expected to be NS, PCR, or VTC.
			OTHER	For specimen source OTHER, MS_Test_Sub_Category is expected to be NS, PCR, or VTC.
			SPUTUM = sputum	For specimen source SPUTUM, MS_Test_Sub_Category is expected to be VTC.
			THRT = throat swab, oropharyngeal swab	For specimen source THRT, MS_Test_Sub_Category is expected to be VTC.
			UNK = unknown or missing	For specimen source UNK, MS_Test_Sub_Category is expected to be NS, PCR, or VTC.
				If you find other specimen sources in your data for this test, please contact MSOC for guidance.
	MS_Result_C	Char (12)	NEGATIVE	
			POSITIVE	
			UNDETERMINED	
	MS_Result_N	Numeric (8)		This should be left blank.
	MS_Result_unit	Char (11)		This should be left blank.
International normalized ratio	MS_Test_Name	Char (10)	INR	
	MS_Test_Sub_Category	Char (6)		This should be left blank.
	Specimen_Source	Char (6)	BLOOD = blood	If you find other specimen sources in your data for this test, please contact MSOC for guidance.
			PPP = platelet poor plasma	
			UNK = unknown or missing	
	MS_Result_C	Char (12)		INR should have only numeric results. But if Orig_Result contains text (e.g., "POSITIVE") then set MS_Result_C = Orig_Result so that the result value is retained. This guidance may change in the future.
	MS_Result_N	Numeric (8)		Numeric result as an integer with up to 1 decimal place.
	MS_Result_unit	Char (11)		This should be left blank.
Lipase	MS_Test_Name	Char (10)	LIPASE	Total lipase in blood
	MS_Test_Sub_Category	Char (6)		This should be left blank.
	Specimen_Source	Char (6)	BLOOD = blood	If you find other specimen sources in your data for this test, please contact MSOC for guidance.
			PLASMA = plasma	
			SERUM = serum	
			SR_PLS = serum/plasma	
			UNK = unknown or missing	
	MS_Result_C	Char (12)		LIPASE should have only numeric results. But if Orig_Result contains text (e.g., "POSITIVE") then set MS_Result_C = Orig_Result so that the result value is retained. This guidance may change in the future.
	MS_Result_N	Numeric (8)		Numeric result in U/L. MSOC will provide guidance on how to convert results with other units; until then set MS_Result_N = Orig_Result and set MS_Result_unit equal to the units in your source data.
	MS_Result_unit	Char (11)	U/L	Units per liter.

Test Type	Variable Name	Variable Type and Length (Bytes)	Values	Definition / Comments / Guideline
Pregnancy test (qualitative)	MS_Test_Name	Char (10)	PG_QL	
	MS_Test_Sub_Category	Char (6)	BHCG = beta human choriogonadotropin	For sub-category BHCG, Specimen_Source should be SERUM or URINE.
			HCG = human choriogonadotropin	For sub-category HCG, Specimen_Source should be SERUM or URINE.
	Specimen_Source	Char (6)	SERUM = serum	For specimen source SERUM, MS_Test_Sub_Category should be BHCG or HCG.
			URINE = urine	For specimen source URINE, MS_Test_Sub_Category should be BHCG or HCG.
			UNK = unknown or missing	For specimen source UNK, MS_Test_Sub_Category should be BHCG or HCG.
				If you find other specimen sources in your data for this test, please contact MSOC for guidance.
	MS_Result_C	Char (12)	BORDERLINE	
			NEGATIVE	
			POSITIVE	
			UNDETERMINED	
	MS_Result_N	Numeric (8)		This should be left blank.
	MS_Result_unit	Char (11)		This should be left blank.
Pregnancy test (quantitative)	MS_Test_Name	Char (10)	PG_QN	
	MS_Test_Sub_Category	Char (6)	BHCG = beta human choriogonadotropin	For sub-category BHCG, Specimen_Source should be SERUM or URINE.
			HCG = human choriogonadotropin	For sub-category HCG, Specimen_Source should be SERUM.
	Specimen_Source	Char (6)	SERUM = serum	For specimen source SERUM, MS_Test_Sub_Category should be BHCG or HCG.
			URINE = urine	For specimen source URINE, MS_Test_Sub_Category should be BHCG.
			UNK = unknown or missing	For specimen source UNK, MS_Test_Sub_Category should be BHCG or HCG.
				If you find other specimen sources in your data for this test, please contact MSOC for guidance.
	MS_Result_C	Char (12)		PG_QN should have only numeric results. But if Orig_Result contains text (e.g., "POSITIVE") then set MS_Result_C = Orig_Result so that the result value is retained. This guidance may change in the future.
	MS_Result_N	Numeric (8)		Numeric result in MIU/ML. MSOC will provide guidance on how to convert results with other units; until then set MS_Result_N = Orig_Result and set MS_Result_unit equal to the units in your source data.
	MS_Result_unit	Char (11)	MIU/ML	Milli-international units per milliliter.
Platelet count	MS_Test_Name	Char (10)	PLATELETS	Do not include results for estimates of platelets, only those for exact counts.
	MS_Test_Sub_Category	Char (6)		This should be left blank.
	Specimen_Source	Char (6)	BLOOD = blood	If you find other specimen sources in your data for this test, please contact MSOC for guidance.
			PLASMA = plasma	
			UNK = unknown or missing	
	MS_Result_C	Char (12)		PLATELETS should have only numeric results. But if Orig_Result contains text (e.g., "POSITIVE") then set MS_Result_C = Orig_Result so that the result value is retained. This guidance may change in the future.
	MS_Result_N	Numeric (8)		Numeric result in K/UL. MSOC will provide guidance on how to convert results with other units; until then set MS_Result_N = Orig_Result and set MS_Result_unit equal to the units in your source data.
	MS_Result_unit	Char (11)	K/UL	One thousand per microliter. One thousand per microliter is equivalent to one billion per liter (i.e., K/UL = 10*9/L). One microliter is equivalent to one cubic millimeter (i.e., UL = MM*3).

Test Type	Variable Name	Variable Type and Length (Bytes)	Values	Definition / Comments / Guideline
Troponin I cardiac	MS_Test_Name	Char (10)	TROP_I	
	MS_Test_Sub_Category	Char (6)		This should be left blank.
	Specimen_Source	Char (6)	BLOOD = blood	If you find other specimen sources in your data for this test, please contact MSOC for guidance.
			PLASMA = plasma	
			SERUM = serum	
			SR_PLS = serum/plasma	
			UNK = unknown or missing	
	MS_Result_C	Char (12)		TROP_I should have only numeric results. But if Orig_Result contains text (e.g., "POSITIVE") then set MS_Result_C = Orig_Result so that the result value is retained. This guidance may change in the future.
	MS_Result_N	Numeric (8)		Numeric result in NG/ML. MSOC will provide guidance on how to convert results with other units; until then set MS_Result_N = Orig_Result and set MS_Result_unit equal to the units in your source data.
	MS_Result_unit	Char (11)	NG/ML	Nanograms per milliliter. Nanograms per milliliter is equivalent to micrograms per liter (i.e., NG/ML = UG/L).
Troponin T cardiac (qualitative)	MS_Test_Name	Char (10)	TROP_T_QL	
	MS_Test_Sub_Category	Char (6)		This should be left blank.
	Specimen_Source	Char (6)	BLOOD = blood	If you find other specimen sources in your data for this test, please contact MSOC for guidance.
			PLASMA = plasma	
			SERUM = serum	
			SR_PLS = serum/plasma	
			UNK = unknown or missing	
	MS_Result_C	Char (12)	NEGATIVE	
			POSITIVE	
			UNDETERMINED	
	MS_Result_N	Numeric (8)		This should be left blank.
	MS_Result_unit	Char (11)		This should be left blank.
Troponin T cardiac (quantitative)	MS_Test_Name	Char (10)	TROP_T_QN	
	MS_Test_Sub_Category	Char (6)		This should be left blank.
	Specimen_Source	Char (6)	BLOOD = blood	If you find other specimen sources in your data for this test, please contact MSOC for guidance.
			PLASMA = plasma	
			SERUM = serum	
			SR_PLS = serum/plasma	
			UNK = unknown or missing	
	MS_Result_C	Char (12)		TROP_T_QN should have only numeric results. But if Orig_Result contains text (e.g., "POSITIVE") then set MS_Result_C = Orig_Result so that the result value is retained. This guidance may change in the future.
	MS_Result_N	Numeric (8)		Numeric result in NG/ML. MSOC will provide guidance on how to convert results with other units; until then set MS_Result_N = Orig_Result and set MS_Result_unit equal to the units in your source data.
	MS_Result_unit	Char (11)	NG/ML	Nanograms per milliliter. Nanograms per milliliter is equivalent to micrograms per liter (i.e., NG/ML = UG/L).

MSCDM: Laboratory LOINC Information Table

Description: The MSCDM Laboratory LOINC Information Table lists the currently known LOINC codes that are associated with each MS_Test_Name, MS_Test_Sub_Category and Specimen_Source. *This table is intended to be a guide and does not represent a complete list of codes for each laboratory test.*

MS_Test_Name	MS_Test_Sub_Category	Specimen_Source	LOINC	Comments
ALP		BLOOD	1783-0	
ALP		SERUM, PLASMA, or SR_PLS	6768-6	
ALT		SERUM, PLASMA, or SR_PLS	1742-6	
ALT		SERUM, PLASMA, or SR_PLS	1743-4	
ALT		SERUM, PLASMA, or SR_PLS	1744-2	
ALT		SERUM, PLASMA, or SR_PLS	44785-4	
ANC		BLOOD	751-8	
ANC		BLOOD	753-4	
ANC		BLOOD	768-2	Segmented.
ANC		BLOOD	26499-4	Segmented.
ANC		BLOOD	30451-9	Segmented.
BILI_TOT		SERUM, PLASMA, or SR_PLS	14631-6	
BILI_TOT		SERUM, PLASMA, or SR_PLS	1975-2	
BILI_TOT		SERUM, PLASMA, or SR_PLS	33898-8	
BILI_TOT		SERUM, PLASMA, or SR_PLS	33899-6	
BILI_TOT		SERUM, PLASMA, or SR_PLS	34543-9	Battery, direct and total panel.
BILI_TOT		SERUM, PLASMA, or SR_PLS	35194-0	
BILI_TOT		BLOOD	42719-5	
BILI_TOT		SERUM, PLASMA, or SR_PLS	50189-0	Neonatal panel.
CK		SERUM, PLASMA, or SR_PLS	2157-6	
CK		BLOOD	50756-6	This code is "discouraged".
CK_MB		SERUM, PLASMA, or SR_PLS	13969-1	
CK_MB		SERUM, PLASMA, or SR_PLS	2154-3	
CK_MB		SERUM, PLASMA, or SR_PLS	32673-6	
CK_MB		BLOOD	49551-5	
CK_MBI		SERUM, PLASMA, or SR_PLS	12187-1	
CK_MBI		SERUM, PLASMA, or SR_PLS	12189-7	
CK_MBI		SERUM, PLASMA, or SR_PLS	20569-0	
CK_MBI		SERUM, PLASMA, or SR_PLS	49136-5	Rarely used.
CK_MBI				Do not use LOINC code 15049-0, as this is a ratio for CK-MM instead of CK-MB.
CREATININE		SERUM, PLASMA, or SR_PLS	14682-9	
CREATININE		BLOOD	21232-4	

MS_Test_Name	MS_Test_Sub_Category	Specimen_Source	LOINC Code	Comments
CREATININE		SERUM, PLASMA, or SR_PLS	2160-0	
CREATININE		SERUM, PLASMA, or SR_PLS	35203-9	
CREATININE		BLOOD	38483-4	
CREATININE		SERUM, PLASMA, or SR_PLS	44784-7	
CREATININE		SERUM	54052-6	HEDIS 2009 code.
CREATININE		BLOOD	59826-8	
D_DIMER_QL		PPP	15179-5	
D_DIMER_QL		PPP	29280-5	
D_DIMER_QL		PPP	3247-4	Deprecated, map to 29280-5.
D_DIMER_QN	DDU	PPP	48058-2	
D_DIMER_QN	DDU	PPP	48066-5	
D_DIMER_QN	FEU	PPP	48065-7	
D_DIMER_QN	FEU	PPP	48067-3	
D_DIMER_QN	FEU	PPP	55449-3	
D_DIMER_QN	NS	PPP	15129-0	Deprecated.
D_DIMER_QN	NS	PPP	30240-6	Deprecated.
D_DIMER_QN	NS	PPP	3246-6	
D_DIMER_QN	NS	PPP	38898-3	
D_DIMER_QN	NS	PPP	55398-2	FEU and DDU panel.
D_DIMER_QN	NS	PPP	7799-0	
GLUCOSE	FST	SERUM, PLASMA, or SR_PLS	10450-5	
GLUCOSE	FST	BLOOD	14770-2	
GLUCOSE	FST	SERUM, PLASMA, or SR_PLS	14771-0	
GLUCOSE	FST	SERUM, PLASMA, or SR_PLS	1554-5	
GLUCOSE	FST	BLOOD	1556-0	
GLUCOSE	FST	BLOOD	1557-8	
GLUCOSE	FST	SERUM, PLASMA, or SR_PLS	1558-6	
GLUCOSE	FST	SERUM, PLASMA, or SR_PLS	17865-7	
GLUCOSE	FST	SERUM, PLASMA, or SR_PLS	35184-1	
GLUCOSE	FST	BLOOD	41604-0	
GLUCOSE	RAN	BLOOD	14743-9	
GLUCOSE	RAN	SERUM, PLASMA, or SR_PLS	14749-6	
GLUCOSE	RAN	BLOOD	15074-8	
GLUCOSE	RAN	BLOOD	2339-0	
GLUCOSE	RAN	BLOOD	2340-8	
GLUCOSE	RAN	BLOOD	2341-6	
GLUCOSE	RAN	SERUM, PLASMA, or SR_PLS	2345-7	
GLUCOSE	RAN	BLOOD	32016-8	
GLUCOSE	RAN	SERUM, PLASMA, or SR_PLS	35211-2	

MS_Test_Name	MS_Test_Sub_Category	Specimen_Source	LOINC Code	Comments
GLUCOSE	RAN	BLOOD	39480-9	
GLUCOSE	RAN	BLOOD	39481-7	
GLUCOSE	RAN	BLOOD	41651-1	
GLUCOSE	RAN	BLOOD	41652-9	
GLUCOSE	RAN	BLOOD	41653-7	
GLUCOSE	RAN	BLOOD	51596-5	
GLUCOSE				Do not use LOINC code 47995-6, as this is a test for cord blood glucose.
HGB		BLOOD	14775-1	
HGB		BLOOD	20509-6	
HGB		BLOOD	24360-0	HGB and HCT panel - keep only the HGB results, e.g., those with units "g/dl" instead of "%".
HGB		BLOOD	30313-1	
HGB		BLOOD	30350-3	
HGB		BLOOD	30351-1	
HGB		BLOOD	30352-9	
HGB		BLOOD	55782-7	
HGB		BLOOD	59260-0	
HGB		BLOOD	718-7	
HGBA1C		BLOOD	17855-8	
HGBA1C		BLOOD	17856-6	
HGBA1C		BLOOD	43150-2	
HGBA1C		BLOOD	4548-4	
HGBA1C		BLOOD	4549-2	
HGBA1C		BLOOD	59261-8	
HGBA1C		BLOOD	62388-4	
HGBA1C		BLOOD	71875-9	
HGBA1C		BLOOD	62388-4	
HGBA1C		BLOOD	71875-9	
INF_A	EIA	NPH	46082-4	Antigen.
INF_A	EIA	NS	5862-8	Antigen.
INF_A	EIA	NSWAB	44564-3	Antigen.
INF_A	EIA	THRT	5860-2	Antigen.
INF_A	IF	BAL	44559-3	Antigen.
INF_A	IF	NPH	44558-5	Antigen.
INF_A	IF	NS	5863-6	Antigen.
INF_A	IF	NSWAB	44560-1	Antigen.
INF_A	IF	THRT	5861-0	Antigen.
INF_A	NS	BAL	44562-7	Antigen.
INF_A	NS	NPH	43874-7	Antigen.
INF_A	NS	NS	31859-2	Antigen.

MS_Test_Name	MS_Test_Sub_Category	Specimen_Source	LOINC Code	Comments
INF_A	NS	NSWAB	44563-5	Antigen.
INF_A	NS	THRT	31858-4	Antigen.
INF_A	PCR	NS	34487-9	RNA.
INF_A	PCR	NS	38381-0	cDNA.
INF_A	PCR	NS	39025-2	Hemagglutinin cDNA.
INF_A	PCR	NS	39102-9	Hemagglutinin cDNA.
INF_A	PCR	NS	39103-7	Neuraminidase cDNA.
INF_A	PCR	NS	40981-3	Deprecated, map to 34487-9.
INF_A	PCR	NS	44263-2	RNA.
INF_A	PCR	NS	53250-7	RNA.
INF_A	PCR	NS	55463-4	Swine origin RNA.
INF_A	PCR	NS	55464-2	Swine origin RNA.
INF_A	PCR	NS	55465-9	H1 2009 pandemic RNA.
INF_A	PCR	NS	59423-4	Hemagglutinin type RNA.
INF_A	PCR	NS	61101-2	Neuraminidase RNA.
INF_A	VTC	NS	48310-7	
INF_AB	EIA	NS	6437-8	Antigen.
INF_AB	EIA	NS	6441-0	Antigen.
INF_AB	EIA	THRT	6435-2	Antigen.
INF_AB	EIA	THRT	6439-4	Antigen.
INF_AB	IF	NS	61102-0	Antigen.
INF_AB	IF	NS	6438-6	Antigen.
INF_AB	IF	NS	6442-8	Antigen.
INF_AB	IF	THRT	6436-0	Antigen.
INF_AB	IF	THRT	6440-2	Antigen.
INF_AB	NS	BAL	44566-8	Antigen.
INF_AB	NS	NPH	33535-6	Antigen.
INF_AB	NS	NS	24015-0	Antigen.
INF_AB	NS	NS	31862-6	Antigen.
INF_AB	NS	NSWAB	44567-6	Antigen.
INF_AB	NS	THRT	31860-0	Antigen.
INF_AB	NS	THRT	31861-8	Antigen.
INF_AB	PCR	NS	48509-4	RNA.
INF_AB	PCR	NS	62462-7	RNA.
INF_B	EIA	NPH	46083-2	Antigen.
INF_B	EIA	NS	5866-9	Antigen.
INF_B	EIA	NSWAB	44575-9	Antigen.
INF_B	EIA	THRT	5864-4	Antigen.

MS_Test_Name	MS_Test_Sub_Category	Specimen_Source	LOINC Code	Comments
INF_B	NS	NSWAB	44577-5	Antigen.
INF_B	NS	THRT	31863-4	Antigen.
INF_B	PCR	NS	40982-1	RNA.
INF_B	IF	BAL	44572-6	Antigen.
INF_B	IF	NPH	44571-8	Antigen.
INF_B	IF	NS	5867-7	Antigen.
INF_B	IF	NSWAB	44573-4	Antigen.
INF_B	IF	THRT	5865-1	Antigen.
INF_B	NS	BAL	44576-7	Antigen.
INF_B	NS	NPH	43895-2	Antigen.
INF_B	NS	NS	31864-2	Antigen.
INF_B	PCR	NS	53251-5	RNA.
INF_B	VTC	NS	38382-8	
INF_NS	NS	NS	54240-7	Antigen.
INF_NS	NS	NS	54244-9	
INF_NS	PCR	NS	54243-1	RNA.
INF_NS	VTC	NS	6604-3	
INF_NS	VTC	SPUTUM	6601-9	
INF_NS	VTC	SPUTUM	6602-7	
INF_NS	VTC	THRT	6603-5	
INR		BLOOD	34714-6	
INR		BLOOD	46418-0	
INR		PPP	6301-6	
LIPASE		SERUM, PLASMA, or SR_PLS	2572-6	
LIPASE		SERUM, PLASMA, or SR_PLS	3040-3	
PG_QL	BHCG	SERUM	2110-5	
PG_QL	BHCG	URINE	2112-1	
PG_QL	HCG	SERUM	2116-2	
PG_QL	HCG	SERUM	2118-8	
PG_QL	HCG	URINE	2106-3	
PG_QN	BHCG	SERUM	20415-6	
PG_QN	BHCG	URINE	2114-7	
PG_QN	BHCG	SERUM	2115-4	
PG_QN	BHCG	SERUM	21198-7	
PG_QN	BHCG	SERUM	45194-8	
PG_QN	HCG	SERUM	19080-1	
PG_QN	HCG	SERUM	2117-0	
PLATELETS		BLOOD	24361-8	Deprecated; Hemogram, platelets & differential panel.
PLATELETS		BLOOD	26515-7	

MS_Test_Name	MS_Test_Sub_Category	Specimen_Source	LOINC Code	Comments
PLATELETS		BLOOD	777-3	
PLATELETS		BLOOD	778-1	
PLATELETS				Do not use LOINC code 49497-1, as this is an estimate of platelets, not an exact count.
TROP_I		SERUM, PLASMA, or SR_PLS	10839-9	
TROP_I		SERUM, PLASMA, or SR_PLS	16255-2	
TROP_I		BLOOD	42757-5	
TROP_I		SERUM, PLASMA, or SR_PLS	49563-0	
TROP_T_QL		SERUM, PLASMA, or SR_PLS	33204-9	
TROP_T_QL		BLOOD	48426-1	
TROP_T_QN		BLOOD	48425-3	
TROP_T_QN		BLOOD	6597-9	
TROP_T_QN		SERUM, PLASMA, or SR_PLS	6598-7	

MSCDM: Laboratory CPT Information Table

Description: The MSCDM Laboratory CPT Information Table lists CPT codes that are associated with each MS_Test_Name. Because CPT codes are mostly used for billing, are not associated with actual laboratory results, and are not sufficiently granular to be routinely useful in assigning MS_Test_Names, a CPT code by itself does not suggest that the record should be included in the laboratory result table. CPT codes may be useful for rule-outs. ***Therefore, this table is intended to be supplemental information only and does not represent a complete list of CPT codes for each laboratory test.*** [1] ***This list is not routinely updated.***

MS_Test_Name	CPT Code	Comments
ALP	80050	Panel.
ALP	80053	Panel.
ALP	80076	Panel.
ALP	84075	
ALT	80050	Panel.
ALT	80053	Panel.
ALT	80076	Panel.
ALT	84460	
ANC	85048	
BILI_TOT	80050	Panel.
BILI_TOT	80053	Panel.
BILI_TOT	80076	Panel.
BILI_TOT	82247	
CK	82550	
CK_MB	82553	
CK_MBI	82550	
CK_MBI	82553	
CREATININE	80047	Panel.
CREATININE	80048	Panel.
CREATININE	80050	Panel.
CREATININE	80053	Panel.
CREATININE	80069	Panel.
CREATININE	82565	
CREATININE	82575	
D_DIMER_QL	85362	
D_DIMER_QL	85378	
D_DIMER_QL	85379	
D_DIMER_QN	85362	
D_DIMER_QN	85378	
D_DIMER_QN	85379	

Laboratory CPT Information Table (cont.)

MS_Test_Name	CPT Code	Comments
GLUCOSE	80047	Panel.
GLUCOSE	80048	Panel.
GLUCOSE	80050	Panel.
GLUCOSE	80053	Panel.
GLUCOSE	80069	Panel.
GLUCOSE	82947	
GLUCOSE		CPT code and panels for glucose do not differentiate between random and fasting sub-categories.
HGB	80050	Panel.
HGB	80053	Panel.
HGB	83026	
HGB	85018	
HGB	85025	Panel.
HGB	85027	Panel.
HGBA1C	83036	
HGBA1C	83037	
INR	85610	This code is for prothrombin time but includes INR.
LIPASE	83690	
PLATELETS	80050	Panel.
PLATELETS	80053	Panel.
TROP_I	84484	
TROP_T_QL	84512	
TROP_T_QN	84484	

NOTES:

1 Regenstrief Institute, the organization that has developed and maintains the LOINC system, has completed a partial mapping of LOINC to CPT codes. The mapping is publicly available on the US National Library of Medicine's webpage at the following link (valid as of March 1, 2013): http://www.nlm.nih.gov/research/umls/mapping_projects/loinc_to_cpt_map.html.

MSCDM: Laboratory Standard Abbreviations Table

Description: The MSCDM Laboratory Standard Abbreviations Table depicts standard abbreviations for common laboratory units.

Unit Type	Standard abbreviation	Definition / Comments / Guideline
Billion	BIL	Billion is often written as "10*9".
Cells	CELL	
Decigram	DG	
Deciliter	DL	
Gram	G	
International Units	IU	Do not confuse "1U" (one unit) or "/U" (per unit) with "IU" (international units).
Thousand	K	Thousand is often written as "10*3".
Liter	L	
Milligram	MG	
Milli-international units	MIU	
Milliliter	ML	
Nanogram	NG	Nanogram per milliliter is equivalent to microgram per liter (i.e., NG/ML = UG/L).
Nanoliter	NL	
Percent	PERCENT	
Ratio	RATIO	
Units	U	
Microgram	UG	Microgram is often written as "MCG".
Cubic Millimeter	UL	One cubic millimeter of blood is equivalent to one microliter. Cubic millimeter is often written as "MM*3" or "CU MM".
Microliter	UL	Do not confuse "UL" (microliter) with "U/L" (units per liter).

MSCDM: Vital Signs Table Structure

Description: The MSCDM Vital Signs Table contains one record per result/entry.

Variable Name	Variable Type and Length (Bytes)	Values	Definition / Comments / Guideline	Example
PatID[1]	Char (Site specific length)	Unique member identifier	Arbitrary person-level identifier. Used to link across tables.	123456789012345
Measure_Date	Numeric (4)	SAS date	Date the vital signs were measured.	12/1/2005
Measure_Time	Numeric (4)	SAS time	Time associated with the vital signs record. This may be the time an actual blood pressure measurement was taken or it may be a check-in time from encounter.	
HT	Numeric (8)	Height (in inches)	####.## = If HT can be represented in inches. Only populated if height was taken on this date. If missing, leave blank.	60.2
WT	Numeric (8)	Weight (in lbs)	####.## = If WT can be represented in pounds. Only populated if weight was taken on this date. If missing, leave blank.	170.2
Diastolic	Numeric (4)	Diastolic blood pressure	### = If Diastolic can be represented in mmHg. Only populated if diastolic blood pressure was taken on this date. If missing, leave blank.	70
Systolic	Numeric (4)	Systolic blood pressure	### = If Systolic can be represented in mmHg. Only populated if systolic blood pressure was taken on this date. If missing, leave blank.	120
BP_Type	Char (1)	E = Extended M = Multiple O = Orthostatic R = Rooming	Type of blood pressure taken.	E
Position	Char (1)	1 = Sitting 2 = Standing 3 = Supine	Position for orthostatic blood pressure. If unknown, leave blank.	1
Tobacco	Numeric (1)	1 = Current user 2 = Never 3 = Quit/former user 4 = Passive 5 = Environmental exposure 6 = Not asked 7 = Conflicting	Tobacco status as of the visit date. Unknown values should be left blank. The "Not asked" value should be used only when it is a valid response from your system (e.g. this is a valid value for EPIC). The "Conflicting" value should be used when you receive tobacco information from multiple sources that disagree.	3
Tobacco_Type	Numeric (1)	1 = Cigarettes only 2 = Other tobacco only 3 = Cigarettes and other tobacco 4 = None	Type of tobacco used. Unknown values should be left blank.	4

NOTE:

1 PatID is a pseudoidentifier with a consistent crosswalk to the true identifier retained by the source Data Partner. For analytical data sets requiring patient-level data, only the pseudoidentifier is used to link across all information belonging to a patient.

MSCDM: State Vaccine Table Structure

Description: The MSCDM State Vaccine Table contains vaccination records received from Immunization Information Systems for patients identified and matched from selected Data Partners. It contains one record per vaccination, per unique PatID, VaxDate, VaxCode, Provider and AdminType. The V_EncounterID serves as the unique identifier for each record.

Variable Name	Variable Type and Length (Bytes)	Values	Comments	Example
V_EncounterID	Char (Site specific length)	Unique vaccine encounter identifier	Arbitrary unique identifier for each vaccination record in the table. Analogous to the EncounterID used in the Mini-Sentinel Common Data Model but should have values that do not overlap with the EncounterID.	
PatID[1]	Char (Site specific length)	Unique member identifier	Arbitrary person-level identifier. Used to link across tables.	123456789012345
IIS	Char (3)	AZ = Arizona FL = Florida IN = Indiana MI = Michigan MN = Minnesota NYS = New York NYC = New York City PA = Pennsylvania VA = Virginia WI = Wisconsin		NYC
VaxDate	Numeric (4)	SAS date	Vaccine administration date.	12/26/2005
Provider	Char (Site specific length)	Unique provider identifier	Provider code for the provider who is most responsible for this encounter. For encounters with multiple providers choose one so the encounter can be linked to the diagnosis and procedure tables. As with the PatID, the provider code is a pseudoidentifier with a consistent crosswalk to the real identifier.	99218766
AdminType	Char (2)	IP = Inpatient Hospital Stay	Inpatient Hospital Stay. Includes all inpatient stays, same-day hospital discharges, hospital transfers, observation bed, and acute hospital care where the discharge is after the admission date. Inpatient events are identified based on Room & Board and Observation Bed charges (UB92 and homegrown codes). Multiple claims per event rolled into unique admissions based on dates overlap and the same providers.	IP
		ED = Emergency Department	Emergency Department encounter. Includes ED encounters that became inpatient stays (in which case inpatient stays would be a separate encounter). Excludes urgent care visits. ED visits are identified based on CPT, UB92 and homegrown codes. ED claims pulled before hospitalization claims to insure that ED with subsequent admission won't be rolled up in the hospital event.	ED
		AV = Ambulatory Visit	Ambulatory Visit. Includes visits at outpatient clinics, same day surgeries, urgent care visits, and other same-day ambulatory hospital encounters, but excludes emergency department encounters and observation beds). If claim was not selected for inpatient events including OB or ED or Ambulance/DME then it was considered for Ambulatory Visit event based on CPT codes and location.	AV

State Vaccine Table Structure (cont.)

Variable Name	Variable Type and Length (Bytes)	Values	Comments	Example
AdminType (cont.)	Char (2)	IS = Institutional Stay	Non-acute institutional stay. Includes nursing homes, skilled nursing facilities, and long-term care facilities.	IS
		SC = School	Schools. Includes school-based health centers, public and private schools, and colleges and universities.	SC
		CC = Child Care	Child care settings. Includes public and private (e.g., Head Start) child care settings.	CC
		FP = Family Planning	Family planning facilities. Includes family planning clinics (e.g., Planned Parenthood), sexually transmitted disease centers.	FP
		PH = Pharmacy	Retail pharmacy.	PH
		HD = Health department	State or local public health department.	HD
		EM = Employer clinic	Employer and worksite-based immunization.	EM
		MC = Mass clinic	Non employer-based mass clinic and dispensing clinic-based immunization.	MC
		NA = Not applicable	Not applicable. Codes for administrators who access the system to, e.g., run reports, perform de-duplication, and manage orders. We do not expect any vaccine records with this category, but included it for completeness with respect to certain "facility types" that do not actually administer vaccines.	NA
		OT = Other	Other administration type.	OT
		UN = Unknown	Unknown administration type.	UN
VaxCode	Char (6)	Clinical Code	Codes as received from IIS.	76815
VaxCodetype	Char (2)	09 = ICD-9-CM	Clinical code type.	C4
		10 = ICD-10-CM		
		C4 = CPT-4 (i.e., HCPCS Level I)		
		HC = HCPCS (i.e., HCPCS Level II)		
		H3 = HCPCS Level III		
		RE = Revenue		
		VX = CVX		
		LO = Local homegrown		
		OT = Other		
MFR	Char (3)	Vaccine Manufacturer	Standard abbreviation for vaccine manufacturer. Based on document available at http://www.cdc.gov/vaccinesafety/vaxtech/visi/standard_vaccine_manufacturer_abbreviations.doc or "UNK" = not known.	
Lot	Char (15)	Vaccine Lot Number	Manufacturer's lot number or <blank> if not known nor supplied.	

NOTES:

1 PatID is a pseudoidentifier with a consistent crosswalk to the true identifier retained by the source Data Partner. For analytical data sets requiring patient-level data, only the pseudoidentifier is used to link across all information belonging to a patient.

MSCDM: Age Groups Summary Table Structure

Description: The MSCDM Age Groups Summary Table[1] provides a key for the age group stratifications within each summary table. The table is used to minimize the complexity of the query created by the Mini-Sentinel Distributed Query Tool. It does not change with each data refresh but must be present in the local summary table database to enable the query process.

Variable Name	Values	Definition / Comments / Guideline	Example
ID	1 - 10	A unique Age Group ID for the ten following age groups: '0-1', '2-4', '5- 9', '10-14', '15-18', '19-21', '22-44', '45-64', '65-74' and '75+'.	9
Strat10_name	0-1, 2-4, 5-9, 10-14, 15-18, 19-21, 22-44, 45-64, 65-74, 75+	Name for each age group within a 10-level age stratification.	65-74
Strat10_sort_order	10, 20, 30, 40, 50, 60, 70, 80, 90, 100	Numeric sort order for the age group names within a 10-level age stratification.	90
Strat7_name	0-4, 5-9, 10-18, 19-21, 22-44, 45-64, 65+	Name for each age group within a 7-level age stratification.	65+
Strat7_sort_order	10, 20, 30, 40, 50, 60, 70	Numeric sort order for the age group names within a 7-level age stratification.	70
Strat4_name	0-21, 22-44, 45-64, 65+	Name for each age group within a 4-level age stratification.	65+
Strat4_sort_order	10, 20, 30, 40	Numeric sort order for the age group names within a 4-level age stratification.	40
Strat2_name	Under 65, 65+	Name for each age group within a 2-level age stratification.	65+
Strat2_sort_order	10, 20	Numeric sort order for the age group names within a 2-level age stratification.	20

NOTE:

1 This table is created by the MSOC and distributed to all Data Partners. Refer to the Data Activities section at www.mini-sentinel.org for more information on the summary tables and their uses.

MSCDM: Enrollment Summary Table Structure

Description: The MSCDM Enrollment Summary Table[1] provides a count of unique individuals and days covered stratified by age group, sex, year, drug coverage status, and medical coverage status.[2] These stratified counts can be used as denominators to calculate crude prevalence rates. Individuals enrolled at least one day during the year are included. The counts are based on the MSCDM Enrollment Table.

Variable Name	Values	Definition / Comments / Guideline	Example
Age_Group	0-1, 2-4, 5-9, 10-14, 15-18, 19-21, 22-44, 45-64, 65-74, 75+	Age is defined as age at initial cohort eligibility during the period (e.g., age as of the start of coverage).	0-1
Sex	F = Female M = Male U = Unknown	Any individual not designated as male or female is categorized as unknown.	M
Year	4 digit year	Calendar year.	2005
MedCov	N = No U = Unknown Y = Yes	MedCov equals "Y" when the health plan has any responsibility for covering medical care for the member during the year.	Y
DrugCov	N = No U = Unknown Y = Yes	DrugCov equals "Y" when the health plan has any responsibility for covering outpatient prescription drugs for the member during the year. This includes members with prescription drug coverage only.	Y
Members	Numeric value	Count of members who had medical or drug coverage at any time during the year.	28
DaysCovered	Numeric value	Count of days covered for members who had medical or drug coverage at any time during the year.	5960
Age_Group_Id	Numeric value	The unique ID for the Age_Group from the Age Groups Table.	1

NOTE:

1 This summary table is created using a distributed program developed by the MSOC and executed locally by all Data Partners. Refer to the Data Activities section at www.mini-sentinel.org for more information on the summary tables and their uses.

2 For example, the table provides the number of 0-1 year old males who had at least one day of medical coverage and drug coverage in 2005.

MSCDM: Generic Drug Name Summary Table Structure

Description: The MSCDM Generic Drug Name Summary Table[1] provides a count of unique individuals stratified by age group, sex, year, and year-quarter who had one or more outpatient pharmacy dispensings recorded in the MSCDM Dispensing Table with the generic drug name indicated, as well as the total number of such dispensings and the total days supplied.[2]

Variable Name	Values	Definition / Comments / Guideline	Example
Age_Group	0-1, 2-4, 5-9, 10-14, 15-18, 19-21, 22-44, 45-64, 65-74, 75+	Age is defined as age at initial cohort eligibility during the period (e.g., age as of the start of coverage).	45-64
Sex	F = Female M = Male U = Unknown	Any individual not designated as male or female is categorized as unknown.	F
Period	4 digit year; 4 digit year and quarter	Year or year-quarter of the dispensing.	2009Q1
GenericName[3]	Generic drug name	Generic drug name.	AMOXICILLIN
Members	Numeric value	Count of members who had one or more dispensings during the period with the generic drug name.	1500
Dispensings	Numeric value	Count of dispensings during the period with the generic drug name.	2500
DaysSupply	Numeric value	Count of total days supply during the period on all dispensings with the generic drug name.	30
Age_Group_Id	Numeric value	The unique ID for the Age_Group from the Age Groups Table.	8

NOTE:

1 This summary table is created using a distributed program developed by the MSOC and executed locally by all Data Partners. Refer to the Data Activities section at www.mini-sentinel.org for more information on the summary tables and their uses.

2 For example, the table provides the number of 45-64 year old females in first quarter of 2009 who had at least one dispensing of amoxicillin and provides the total number of such dispensings and total days supplied recorded on the dispensings.

3 The generic drug name is standardized using a look-up table provided by the MSOC.

MSCDM: Drug Category Summary Table Structure

Description: The MSCDM Drug Category Summary Table[1] provides a count of unique individuals stratified by age group, sex, year, and year-quarter who had one or more outpatient pharmacy dispensings recorded in the MSCDM Dispensing Table with the drug category indicated, as well as the total number of such dispensings and the total days supplied.[2]

Variable Name	Values	Definition / Comments / Guideline	Example
Age_Group	0-1, 2-4, 5-9, 10-14, 15-18, 19-21, 22-44, 45-64, 65-74, 75+	Age is defined as age at initial cohort eligibility during the period (e.g., age as of the start of coverage).	45-64
Sex	F = Female M = Male U = Unknown	Any individual not designated as male or female is categorized as unknown.	F
Period	4 digit year; 4 digit year and quarter	Year or year-quarter of the dispensing.	2010
DrugClass[3]	Drug class	Drug class, also referred to as drug category.	Vasodilators
Members	Numeric value	Count of members who had one or more dispensings during the period with the drug category.	1400
Dispensings	Numeric value	Count of dispensings during the period with the drug category.	2500
DaysSupply	Numeric value	Count of total days supply during the period on all dispensings with the drug category.	30
Age_Group_Id	Numeric value	The unique ID for the Age_Group from the Age Groups Table.	8

NOTE:

1 This summary table is created using a distributed program developed by the MSOC and executed locally by all Data Partners. Refer to the Data Activities section at www.mini-sentinel.org for more information on the summary tables and their uses.

2 For example, the table provides the number of 45-64 year old females in 2010 who had at least one dispensing of vasodilators and provides the total number of such dispensings and total days supplied recorded on the dispensings.

3 The drug category is standardized using a look-up table provided by the MSOC.

MSCDM: 3-Digit ICD-9 Diagnosis Summary Table Structure

Description: The MSCDM 3-Digit ICD-9 Diagnosis Summary Table[1] provides a count of unique individuals stratified by age group, sex, year, and care setting who had one or more encounters recorded in the MSCDM Diagnosis Table with the 3 digit ICD-9-CM diagnosis code indicated, as well as the total number of such encounters.[2]

Variable Name	Values	Definition / Comments / Guideline	Example
Age_Group	0-1, 2-4, 5-9, 10-14, 15-18, 19-21, 22-44, 45-64, 65-74, 75+	Age is defined as age at initial cohort eligibility during the period (e.g., age as of the start of coverage).	0-1
Sex	F = Female M = Male U = Unknown	Any individual not designated as male or female is categorized as unknown.	M
Period	4 digit year	Calendar year.	2005
Code	3 digit ICD-9-CM diagnosis code	3 digit ICD-9-CM diagnosis code for each diagnosis recorded during an encounter.	493
DXname	Diagnosis name	Description of the 3 digit ICD-9-CM diagnosis code.	ASTHMA
Setting	AN = Any AV = Outpatient ED = Emergency department IP = Inpatient	Care setting based on the encounter type. "AN" includes any encounter type (EncType = AV, ED, IP, IS, or OA). "AV" includes all outpatient ambulatory visits (EncType = AV or OA). "ED" includes emergency department encounters (EncType = ED). "IP" includes acute inpatient hospital stays and non-acute institutional stays (EncType = IP or IS).	AV
Members	Numeric value	Count of members who had one or more encounters during the period with the 3 digit ICD-9-CM diagnosis code.	3000
Events	Numeric value	Count of encounters (events) during the period with the 3 digit ICD-9-CM diagnosis code.	6000
Age_Group_Id	Numeric value	The unique ID for the Age_Group from the Age Groups Table.	1

NOTE:

1 This summary table is created using a distributed program developed by the MSOC and executed locally by all Data Partners. Refer to the Data Activities section at www.mini-sentinel.org for more information on the summary tables and their uses.

2 For example, the table provides the number of 0-1 year old males in 2005 who had at least one ambulatory encounter with a diagnosis code of 493, and provides the total number of such encounters.

MSCDM: 4-Digit ICD-9 Diagnosis Summary Table Structure

Description: The MSCDM 4-Digit ICD-9 Diagnosis Summary Table[1] provides a count of unique individuals stratified by age group, sex, year, and care setting who had one or more encounters recorded in the MSCDM Diagnosis Table with the 4 digit ICD-9-CM diagnosis code indicated, as well as the total number of such encounters.[2]

Variable Name	Values	Definition / Comments / Guideline	Example
Age_Group	0-1, 2-4, 5-9, 10-14, 15-18, 19-21, 22-44, 45-64, 65-74, 75+	Age is defined as age at initial cohort eligibility during the period (e.g., age as of the start of coverage).	0-1
Sex	F = Female M = Male U = Unknown	Any individual not designated as male or female is categorized as unknown.	M
Period	4 digit year	Calendar year.	2005
Code	4 digit ICD-9-CM diagnosis code	4 digit ICD-9-CM diagnosis code for each diagnosis recorded during an encounter.	4938
DXname	Diagnosis name	Description of the 4 digit ICD-9-CM diagnosis code.	OTHER FORMS OF ASTHMA
Setting	AN = Any AV = Outpatient ED = Emergency department IP = Inpatient	Care setting based on the encounter type. "AN" includes any encounter type (EncType = AV, ED, IP, IS, or OA). "AV" includes all outpatient ambulatory visits (EncType = AV or OA). "ED" includes emergency department encounters (EncType = ED). "IP" includes acute inpatient hospital stays and non-acute institutional stays (EncType = IP or IS).	AV
Members	Numeric value	Count of members who had one or more encounters during the period with the 4 digit ICD-9-CM diagnosis code.	750
Events	Numeric value	Count of encounters (events) during the period with the 4 digit ICD-9-CM diagnosis code.	2000
Age_Group_Id	Numeric value	The unique ID for the Age_Group from the Age Groups Table.	1

NOTE:

1 This summary table is created using a distributed program developed by the MSOC and executed locally by all Data Partners. Refer to the Data Activities section at www.mini-sentinel.org for more information on the summary tables and their uses.

2 For example, the table provides the number of 0-1 year old males in 2005 who had at least one ambulatory encounter with a diagnosis code of 493.8, and provides the total number of such encounters.

MSCDM: 5-Digit ICD-9 Diagnosis Summary Table Structure

Description: The MSCDM 5-digit ICD-9 Diagnosis Summary Table[1] provides a count of unique individuals stratified by age group, sex, year, and care setting who had one or more encounters recorded in the MSCDM Diagnosis Table with the 5 digit ICD-9-CM diagnosis code indicated, as well as the total number of such encounters.[2]

Variable Name	Values	Definition / Comments / Guideline	Example
Age_Group	0-1, 2-4, 5-9, 10-14, 15-18, 19-21, 22-44, 45-64, 65-74, 75+	Age is defined as age at initial cohort eligibility during the period (e.g., age as of the start of coverage).	0-1
Sex	F = Female M = Male U = Unknown	Any individual not designated as male or female is categorized as unknown.	M
Period	4 digit year	Calendar year.	2005
Code	5 digit ICD-9-CM diagnosis code	5 digit ICD-9-CM diagnosis code for each diagnosis recorded during an encounter.	49382
DXname	Diagnosis name	Description of the 5 digit ICD-9-CM diagnosis code.	COUGH VARIANT ASTHMA
Setting	AN = Any AV = Outpatient ED = Emergency department IP = Inpatient	Care setting based on the encounter type. "AN" includes any encounter type (EncType = AV, ED, IP, IS, or OA). "AV" includes all outpatient ambulatory visits (EncType = AV or OA). "ED" includes emergency department encounters (EncType = ED). "IP" includes acute inpatient hospital stays and non-acute institutional stays (EncType = IP or IS).	ED
Members	Numeric value	Count of members who had one or more encounters during the period with the 5 digit ICD-9-CM diagnosis code.	55
Events	Numeric value	Count of encounters (events) during the period with the 5 digit ICD-9-CM diagnosis code.	74
Age_Group_Id	Numeric value	The unique ID for the Age_Group from the Age Groups Table.	1

NOTE:

1 This summary table is created using a distributed program developed by the MSOC and executed locally by all Data Partners. Refer to the Data Activities section at www.mini-sentinel.org for more information on the summary tables and their uses.

2 For example, the table provides the number of 0-1 year old males in 2005 who had at least one emergency department encounter with a diagnosis code of 493.82, and provides the total number of such encounters.

MSCDM: HCPCS Summary Table Structure

Description: The MSCDM HCPCS Summary Table[1] provides a count of unique individuals stratified by age group, sex, year, and care setting who had one or more encounters recorded in the MSCDM Procedure Table with the HCPCS procedure code indicated, as well as the total number of such encounters.[2]

Variable Name	Values	Definition / Comments / Guideline	Example
Age_Group	0-1, 2-4, 5-9, 10-14, 15-18, 19-21, 22-44, 45-64, 65-74, 75+	Age is defined as age at initial cohort eligibility during the period (e.g., age as of the start of coverage).	75+
Sex	F = Female M = Male U = Unknown	Any individual not designated as male or female is categorized as unknown.	F
Period	4 digit year	Calendar year.	2008
Code	5 digit HCPCS procedure code	5 digit HCPCS code for each procedure recorded during an encounter.	10060
PXname	Procedure name	Description of the HCPCS procedure code.	DRAINAGE OF SKIN ABSCESS
Setting	AN = Any AV = Outpatient ED = Emergency department IP = Inpatient	Care setting based on the encounter type. "AN" includes any encounter type (EncType = AV, ED, IP, IS, or OA). "AV" includes all outpatient ambulatory visits (EncType = AV or OA). "ED" includes emergency department encounters (EncType = ED). "IP" includes acute inpatient hospital stays and non-acute institutional stays (EncType = IP or IS).	IP
Members	Numeric value	Count of members who had one or more encounters during the period with the HCPCS procedure code.	650
Events	Numeric value	Count of encounters (events) during the period with the HCPCS procedure code.	1175
Age_Group_Id	Numeric value	The unique ID for the Age_Group from the Age Groups Table.	10

NOTE:

1 This summary table is created using a distributed program developed by the MSOC and executed locally by all Data Partners. Refer to the Data Activities section at www.mini-sentinel.org for more information on the summary tables and their uses.

2 For example, the table provides the number of 75+ year old females in 2008 who had at least one inpatient encounter with a HCPCS code of 10060, and provides the total number of such encounters.

MSCDM: 3-Digit ICD-9 Procedure Summary Table Structure

Description: The MSCDM 3-Digit ICD-9 Procedure Summary Table[1] provides a count of unique individuals stratified by age group, sex, year, and care setting who had one or more encounters recorded in the MSCDM Procedure Table with the 3 digit ICD-9-CM procedure code indicated, as well as the total number of such encounters.[2]

Variable Name	Values	Definition / Comments / Guideline	Example
Age_Group	0-1, 2-4, 5-9, 10-14, 15-18, 19-21, 22-44, 45-64, 65-74, 75+	Age is defined as age at initial cohort eligibility during the period (e.g., age as of the start of coverage).	45-64
Sex	F = Female M = Male U = Unknown	Any individual not designated as male or female is categorized as unknown.	F
Period	4 digit year	Calendar year.	2009
Code	3 digit ICD-9-CM procedure code	3 digit ICD-9-CM procedure code for each procedure recorded during an encounter.	381
PXname	Procedure name	Description of the 3 digit ICD-9-CM procedure code.	ENDARTERECTOMY
Setting	AN = Any	Care setting based on the encounter type. "AN" includes any encounter type (EncType = AV, ED, IP, IS, or OA).	IP
	AV = Outpatient	"AV" includes all outpatient ambulatory visits (EncType = AV or OA).	
	ED = Emergency department	"ED" includes emergency department encounters (EncType = ED).	
	IP = Inpatient	"IP" includes acute inpatient hospital stays and non-acute institutional stays (EncType = IP or IS).	
Members	Numeric value	Count of members who had one or more encounters during the period with the 3 digit ICD-9-CM procedure code.	1500
Events	Numeric value	Count of encounters (events) during the period with the 3 digit ICD-9-CM procedure code.	1750
Age_Group_Id	Numeric value	The unique ID for the Age_Group from the Age Groups Table.	8

NOTE:

1 This summary table is created using a distributed program developed by the MSOC and executed locally by all Data Partners. Refer to the Data Activities section at www.mini-sentinel.org for more information on the summary tables and their uses.

2 For example, the table provides the number of 45-64 year old females in 2009 who had at least one inpatient encounter with an ICD-9-CM procedure code of 381, and provides the total number of such encounters.

MSCDM: 4-Digit ICD-9 Procedure Summary Table Structure

Description: The MSCDM 4-Digit ICD-9 Procedure Summary Table[1] provides a count of unique individuals stratified by age group, sex, year, and care setting who had one or more encounters recorded in the MSCDM Procedure Table with the 4 digit ICD-9-CM procedure code indicated, as well as the total number of such encounters.[2]

Variable Name	Values	Definition / Comments / Guideline	Example
Age_Group	0-1, 2-4, 5-9, 10-14, 15-18, 19-21, 22-44, 45-64, 65-74, 75+	Age is defined as age at initial cohort eligibility during the period (e.g., age as of the start of coverage).	45-64
Sex	F = Female M = Male U = Unknown	Any individual not designated as male or female is categorized as unknown.	F
Period	4 digit year	Calendar year.	2009
PX_Code	4 digit ICD-9-CM procedure code	4 digit ICD-9-CM procedure code for each procedure recorded during an encounter.	3813
PXname	Procedure name	Description of the 4 digit ICD-9-CM procedure code.	ENDARTERECTOMY UPPER LIMB VESSELS
Setting	AN = Any AV = Outpatient ED = Emergency department IP = Inpatient	Care setting based on the encounter type. "AN" includes any encounter type (EncType = AV, ED, IP, IS, or OA). "AV" includes all outpatient ambulatory visits (EncType = AV or OA). "ED" includes emergency department encounters (EncType = ED). "IP" includes acute inpatient hospital stays and non-acute institutional stays (EncType = IP or IS).	IP
Members	Numeric value	Count of members who had one or more encounters during the period with the 4 digit ICD-9-CM procedure code.	1500
Events	Numeric value	Count of encounters (events) during the period with the 4 digit ICD-9-CM procedure code.	1750
Age_Group_Id	Numeric value	The unique ID for the Age_Group from the Age Groups Table.	8

NOTE:

1 This summary table is created using a distributed program developed by the MSOC and executed locally by all Data Partners. Refer to the Data Activities section at www.mini-sentinel.org for more information on the summary tables and their uses.

2 For example, the table provides the number of 45-64 year old females in 2009 who had at least one inpatient encounter with an ICD-9-CM procedure code of 381.3, and provides the total number of such encounters.

MSCDM: Incident Generic Drug Name Summary Table Structure

Description: The MSCDM Incident Generic Drug Name Summary Table[1] provides a count of unique members with an incident dispensing for each generic drug name of interest stratified by age group, sex, and year. Incidence is defined as a member with a dispensing with the generic drug name of interest (i.e., the index date), in the year of interest with no evidence of a dispensing for that generic drug name in the 90, 180 and 270 days (i.e., the lookback periods) <u>before</u> the index date. Both medical and drug coverage are required during the three possible lookback periods, allowing for eligibility gaps of <=45 days. In addition to reporting the number of members with an incident dispensing, for each such incident user a treatment episode starting on the index date is created, and the total number of dispensings with the generic drug name, days supplied and length of treatment episodes (in days) in the 90, 180, 270 days <u>after</u> the index date are reported. Treatment gaps of <= 15 days are allowed when building treatment episodes and no restriction on the length of treatment episodes is applied. Although a member can have multiple index events in a given calendar year the first one only is counted and used for reporting. This table also reports a count of members with index dates in each quarter which sum up to total number of members for that year.

Variable Name	Values	Definition / Comments / Guideline	Example
Age_Group	0-1, 2-4, 5-9, 10-14, 15-18, 19-21, 22-44, 45-64, 65-74, 75+	Age is defined as age at initial cohort eligibility during the period (e.g., age as of the start of coverage).	45-64
Sex	F = Female M = Male U = Unknown	Any individual not designated as male or female is categorized as unknown.	F
Period	4 digit year	Year of the dispensing.	2007
GenericName[2]	Generic drug name	Generic drug name.	DIGOXIN
Members90	Numeric value	Count of members who had a dispensing with the generic name during the period with no evidence of another dispensing with that generic name in the 90 days before the index date. Only the first incident event/index date within each year is considered.	671
Dispensings90	Numeric value	For members who satisfy the Members90 criteria, count of dispensings with the generic name 90 days after the index date (including the index event).	2,223
DaysSupply90	Numeric value	For members who satisfy the Members90 criteria, count of days supply on the dispensings with the generic name 90 days after the index date (including the index event).	66,961
EpisodeSpan90	Numeric value	For members who satisfy the Members90 criteria, length of treatment episodes (in days) of the dispensings with the generic name 90 days after the index date (including the index event). Treatment gaps of <= 15 days are allowed when building treatment episodes and no restriction on the length of treatment episodes is applied.	69,029
Members90Q1	Numeric value	For members who satisfy the Members90 criteria, count of members with an index date in Q1 of the year. The sum of Members90Q1 through Members90Q4 equals Members90.	204
Members90Q2	Numeric value	For members who satisfy the Members90 criteria, count of members with an index date in Q2 of the year. The sum of Members90Q1 through Members90Q4 equals Members90.	172
Members90Q3	Numeric value	For members who satisfy the Members90 criteria, count of members with an index date in Q3 of the year. The sum of Members90Q1 through Members90Q4 equals Members90.	168
Members90Q4	Numeric value	For members who satisfy the Members90 criteria, count of members with an index date in Q4 of the year. The sum of Members90Q1 through Members90Q4 equals Members90.	127
Members180	Numeric value	Count of members who had a dispensing with the generic name during the period with no evidence of another dispensing with that generic name in the 180 days before the index date. Only the first incident event/index date within each year is considered.	426
Dispensings180	Numeric value	For members who satisfy the Members180 criteria, count of dispensings with the generic name 180 days after the index date (including the index event).	1,320
DaysSupply180	Numeric value	For members who satisfy the Members180 criteria, count of days supply on the dispensings with the generic name 180 days after the index date (including the index event).	40,292

Variable Name	Values	Definition / Comments / Guideline	Example
EpisodeSpan180	Numeric value	For members who satisfy the Members180 criteria, length of treatment episodes (in days) of the dispensings with the generic name 180 days after the index date (including the index event). Treatment gaps of <= 15 days are allowed when building treatment episodes and no restriction on the length of treatment episodes is applied.	41,480
Members180Q1	Numeric value	For members who satisfy the Members180 criteria, count of members with an index date in Q1 of the year. The sum of Members180Q1 through Members180Q4 equals Members180.	121
Members180Q2	Numeric value	For members who satisfy the Members180 criteria, count of members with an index date in Q2 of the year. The sum of Members180Q1 through Members180Q4 equals Members180.	106
Members180Q3	Numeric value	For members who satisfy the Members180 criteria, count of members with an index date in Q3 of the year. The sum of Members180Q1 through Members180Q4 equals Members180.	114
Members180Q4	Numeric value	For members who satisfy the Members180 criteria, count of members with an index date in Q4 of the year. The sum of Members180Q1 through Members180Q4 equals Members180.	85
Members270	Numeric value	Count of members who had a dispensing with the generic name during the period with no evidence of another dispensing with that generic name in the 270 days before the index date. Only the first incident event/index date within each year is considered.	303
Dispensings270	Numeric value	For members who satisfy the Members270 criteria, count of dispensings with the generic name 270 days after the index date (including the index event).	968
DaysSupply270	Numeric value	For members who satisfy the Members270 criteria, count of days supply on the dispensings with the generic name 270 days after the index date (including the index event).	29,605
EpisodeSpan270	Numeric value	For members who satisfy the Members270 criteria, length of treatment episodes (in days) of the dispensings with the generic name 270 days after the index date (including the index event). Treatment gaps of <= 15 days are allowed when building treatment episodes and no restriction on the length of treatment episodes is applied.	30,370
Members270Q1	Numeric value	For members who satisfy the Members270 criteria, count of members with an index date in Q1 of the year. The sum of Members270Q1 through Members270Q4 equals Members270.	79
Members270Q2	Numeric value	For members who satisfy the Members270 criteria, count of members with an index date in Q2 of the year. The sum of Members270Q1 through Members270Q4 equals Members270.	73
Members270Q3	Numeric value	For members who satisfy the Members270 criteria, count of members with an index date in Q3 of the year. The sum of Members270Q1 through Members270Q4 equals Members270.	79
Members270Q4	Numeric value	For members who satisfy the Members270 criteria, count of members with an index date in Q4 of the year. The sum of Members270Q1 through Members270Q4 equals Members270.	72
Age_Group_Id	Numeric value	The unique ID for the Age_Group from the Age Groups Table.	

NOTE:

1 This summary table is created using a distributed program developed by the MSOC and executed locally by all Data Partners. Refer to the Data Activities section at www.mini-sentinel.org for more information on the summary tables and their uses.

2 The generic drug name is standardized using a look-up table provided by the MSOC.

MSCDM: Incident Drug Category Summary Table Structure

Description: The MSCDM Incident Drug Category Summary Table[1] provides a count of unique members with an incident dispensing for each drug category of interest stratified by age group, sex, and year. Incidence is defined as a member with a dispensing with the drug category of interest (i.e., the index date), in the year of interest with no evidence of a dispensing for that drug category in the 90, 180 and 270 days (i.e., the lookback periods) <u>before</u> the index date. Both medical and drug coverage are required during the three possible lookback periods, allowing for eligibility gaps of <=45 days. In addition to reporting the number of members with an incident dispensing, for each such incident user a treatment episode starting on the index date is created, and the total number of dispensings with the drug category, days supplied and length of treatment episodes (in days) in the 90, 180, 270 days <u>after</u> the index date are reported. Treatment gaps of <= 15 days are allowed when building treatment episodes and no restriction on the length of treatment episodes is applied. Although a member can have multiple index events in a given calendar year the first one only is counted and used for reporting. This table also reports a count of members with index dates in each quarter which sum up to total number of members for that year.

Variable Name	Values	Definition / Comments / Guideline	Example
Age_Group	0-1, 2-4, 5-9, 10-14, 15-18, 19-21, 22-44, 45-64, 65-74, 75+	Age is defined as age at initial cohort eligibility during the period (e.g., age as of the start of coverage).	15-18
Sex	F = Female M = Male U = Unknown	Any individual not designated as male or female is categorized as unknown.	M
Period	4 digit year	Year of the dispensing.	2006
DrugClass[2]	Drug class	Drug class, also referred to as drug category.	Attention Deficit-Hyperactivity (ADHD) Therapy, Stimulant-Type
Members90	Numeric value	Count of members who had a dispensing with the drug class during the period with no evidence of another dispensing with that drug class in the 90 days <u>before</u> the index date. Only the first incident event/index date within each year is considered.	1,483
Dispensings90	Numeric value	For members who satisfy the Members90 criteria, count of dispensings with the drug class 90 days <u>after</u> the index date (including the index event).	4,060
DaysSupply90	Numeric value	For members who satisfy the Members90 criteria, count of days supply on the dispensings with the drug class 90 days <u>after</u> the index date (including the index event).	119,501
EpisodeSpan90	Numeric value	For members who satisfy the Members90 criteria, length of treatment episodes (in days) of the dispensings with the drug class 90 days <u>after</u> the index date (including the index event). Treatment gaps of <= 15 days are allowed when building treatment episodes and no restriction on the length of treatment episodes is applied.	118,379
Members90Q1	Numeric value	For members who satisfy the Members90 criteria, count of members with an index date in Q1 of the year. The sum of Members90Q1 through Members90Q4 equals Members90.	466
Members90Q2	Numeric value	For members who satisfy the Members90 criteria, count of members with an index date in Q2 of the year. The sum of Members90Q1 through Members90Q4 equals Members90.	313
Members90Q3	Numeric value	For members who satisfy the Members90 criteria, count of members with an index date in Q3 of the year. The sum of Members90Q1 through Members90Q4 equals Members90.	359
Members90Q4	Numeric value	For members who satisfy the Members90 criteria, count of members with an index date in Q4 of the year. The sum of Members90Q1 through Members90Q4 equals Members90.	345

Variable Name	Values	Definition / Comments / Guideline	Example
Members180	Numeric value	Count of members who had a dispensing with the drug class during the period with no evidence of another dispensing with that drug class in the 180 days before the index date. Only the first incident event/index date within each year is considered.	1,010
Dispensings180	Numeric value	For members who satisfy the Members180 criteria, count of dispensings with the drug class 180 days after the index date (including the index event).	2,740
DaysSupply180	Numeric value	For members who satisfy the Members180 criteria, count of days supply on the dispensings with the drug class 180 days after the index date (including the index event).	80,493
EpisodeSpan180	Numeric value	For members who satisfy the Members180 criteria, length of treatment episodes (in days) of the dispensings with the drug class 180 days after the index date (including the index event). Treatment gaps of <= 15 days are allowed when building treatment episodes and no restriction on the length of treatment episodes is applied.	79,500
Members180Q1	Numeric value	For members who satisfy the Members180 criteria, count of members with an index date in Q1 of the year. The sum of Members180Q1 through Members180Q4 equals Members180.	274
Members180Q2	Numeric value	For members who satisfy the Members180 criteria, count of members with an index date in Q2 of the year. The sum of Members180Q1 through Members180Q4 equals Members180.	208
Members180Q3	Numeric value	For members who satisfy the Members180 criteria, count of members with an index date in Q3 of the year. The sum of Members180Q1 through Members180Q4 equals Members180.	237
Members180Q4	Numeric value	For members who satisfy the Members180 criteria, count of members with an index date in Q4 of the year. The sum of Members180Q1 through Members180Q4 equals Members180.	291
Members270	Numeric value	Count of members who had a dispensing with the drug class during the period with no evidence of another dispensing with that drug class in the 270 days before the index date. Only the first incident event/index date within each year is considered.	792
Dispensings270	Numeric value	For members who satisfy the Members270 criteria, count of dispensings with the drug class 270 days after the index date (including the index event).	2,183
DaysSupply270	Numeric value	For members who satisfy the Members270 criteria, count of days supply on the dispensings with the drug class 270 days after the index date (including the index event).	64,016
EpisodeSpan270	Numeric value	For members who satisfy the Members270 criteria, length of treatment episodes (in days) of the dispensings with the drug class 270 days after the index date (including the index event). Treatment gaps of <= 15 days are allowed when building treatment episodes and no restriction on the length of treatment episodes is applied.	62,669
Members270Q1	Numeric value	For members who satisfy the Members270 criteria, count of members with an index date in Q1 of the year. The sum of Members270Q1 through Members270Q4 equals Members270.	194
Members270Q2	Numeric value	For members who satisfy the Members270 criteria, count of members with an index date in Q2 of the year. The sum of Members270Q1 through Members270Q4 equals Members270.	163
Members270Q3	Numeric value	For members who satisfy the Members270 criteria, count of members with an index date in Q3 of the year. The sum of Members270Q1 through Members270Q4 equals Members270.	184
Members270Q4	Numeric value	For members who satisfy the Members270 criteria, count of members with an index date in Q4 of the year. The sum of Members270Q1 through Members270Q4 equals Members270.	251
Age_Group_Id	Numeric value	The unique ID for the Age_Group from the Age Groups Table.	5

NOTE:

1 This summary table is created using a distributed program developed by the MSOC and executed locally by all Data Partners. Refer to the Data Activities section at www.mini-sentinel.org for more information on the summary tables and their uses.

2 The drug category is standardized using a look-up table provided by the MSOC.

MSCDM: Incident 3-Digit ICD-9 Diagnosis Summary Table Structure

Description: The MSCDM Incident 3-Digit ICD-9 Diagnosis Summary Table[1] provides a count of unique members with an incident diagnosis of each 3-digit ICD-9-CM code in one of four care setting of interest, stratified by age group, sex, and year. Incidence is defined as a member with an encounter with the diagnosis of interest (i.e., the index date), in the care setting of interest, in the year of interest with no evidence of that diagnosis in the 90, 180 and 270 days (i.e., the lookback periods) before the index date in any care setting. Both medical and drug coverage are required during the three possible lookback periods, allowing for eligibility gaps of <=45 days. In addition, the table reports the number of encounters in the care setting of interest with the diagnosis in the 90, 180, 270 days after the index date (including the index event). Only the first incident event/index date within each year is considered.

Variable Name	Values	Definition / Comments / Guideline	Example
Age_Group	0-1, 2-4, 5-9, 10-14, 15-18, 19-21, 22-44, 45-64, 65-74, 75+	Age is defined as age at initial cohort eligibility during the period (e.g., age as of the start of coverage).	75+
Sex	F = Female M = Male U = Unknown	Any individual not designated as male or female is categorized as unknown.	M
Period	4 digit year	Calendar year.	2009
Code	3 digit ICD-9-CM diagnosis code	3 digit ICD-9-CM diagnosis code for each diagnosis recorded during an encounter.	362
DXname	Diagnosis name	Description of the 3 digit ICD-9-CM diagnosis code.	OTHER RETINAL DISORDERS
Setting	AN = Any AV = Outpatient ED = Emergency department IP = Inpatient	Care setting based on the encounter type. "AN" includes any encounter type (EncType = AV, ED, IP, IS, or OA). "AV" includes all outpatient ambulatory visits (EncType = AV or OA). "ED" includes emergency department encounters (EncType = ED). "IP" includes acute inpatient hospital stays and non-acute institutional stays (EncType = IP or IS).	IP
Members90	Numeric value	Count of members who had an encounter during the period in the care setting of interest with the 3 digit ICD-9-CM diagnosis code with no evidence of that diagnosis in the 90 days before the index date in any care setting. Only the first incident event/index date within each year is considered.	20
Events90	Numeric value	For members who satisfy the Members90 criteria, count of encounters (events) with the 3 digit ICD-9-CM diagnosis code 90 days after the index date (including the index event).	23
Members180	Numeric value	Count of members who had encounter during the period in the care setting of interest with the 3 digit ICD-9-CM diagnosis code with no evidence of that diagnosis in the 180 days before the index date in any care setting. Only the first incident event/index date within each year is considered.	18
Events180	spray	For members who satisfy the Members90 criteria, count of encounters (events) with the 3 digit ICD-9-CM diagnosis code 180 days after the index date (including the index event).	21
Members270	Numeric value	Count of members who had an encounter during the period in the care setting of interest with the 3 digit ICD-9-CM diagnosis code with no evidence of that diagnosis in the 270 days before the index date in any care setting. Only the first incident event/index date within each year is considered.	17
Events270	Numeric value	For members who satisfy the Members90 criteria, count of encounters (events) with the 3 digit ICD-9-CM diagnosis code 270 days after the index date (including the index event).	19
Age_Group_Id	Numeric value	The unique ID for the Age_Group from the Age Groups Table.	10

NOTE:

1 This summary table is created using a distributed program developed by the MSOC and executed locally by all Data Partners. Refer to the Data Activities section at www.mini-sentinel.org for more information on the summary tables and their uses.