

COLORADO ASSOCIATED COMMUNITY



HEALTH INFORMATION EXCHANGE

# Technical Specifications

CACHIE Quality Information System – AHRQ Scope

**PLURALSOFT**

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## Revision History

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01-Jul-2009	PluralSoft	1.0	New document – Diabetes + Interim Tobacco Cessation Information Demand Requirements Specification
23-Jul-2009	PluralSoft	1.1	Information Supply Requirements
25-Jul-2009	PluralSoft	1.2	QIS Staging and Enterprise Datawarehouse Data Model

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## Introduction

This Technical Specifications document has been created for the CACHIE Quality Information System (“QIS”). The Project’s Client is Colorado Managed Care Network (CCMCN).

This document itemizes the formal

- **Information demand requirements** for the Data warehouse infrastructure supporting CACHIE QIS solution within the scope of the AHRQ Deliverable as defined by CCMCN.
- **Information Domains and their Attributes** required in CACHIE QIS to form the data content to be supplied from the disparate Electronic Medical Record (EMR) systems and Enterprise Practice Management (EPM) systems resident at designated participating Community Health Centers (CHCs).
- **Datawarehouse Staging Area model** required in CACHIE QIS to store the source EMR and EPM system data conformed to the Information Domains and their Attributes
- **Information supply requirements** for the disparate EMR systems and EPM systems resident at designated participating Community Health Centers (CHCs). This is the **Source-to-Stage Mapping Specifications** that form the basis for development of requisite programs that extract data out of participating CHC EMR and EPM systems and stores them in the Datawarehouse Staging Database
- **Enterprise Datawarehouse Data Model** that forms the standardized and conformed CACHIE QIS physical datawarehouse containing historical data from the various source systems ready for information consumption by CHACHIE stakeholders

*Note: This document does not formally itemize the follow-on Extract-Transform-Load (ETL) processing from Staging Area Model to Datawarehouse Data Model as well as the Information Consumption requirements at this time. As the project progresses through its plan, this document will be updated with information consumption requirements.*

The **Information demand** requirements are aimed at achieving the primary business objectives for project namely:

- Create a **robust, interoperable, unified, extensible, scalable, shared information management infrastructure (“CACHIE QIS”)** that integrates patient related demographic and clinical information from disparate EMR systems and EPM systems resident at designated participating CHCs to support:
  - Quality reporting at various levels (patient, provider, clinic site, health center, segmented population)
  - Support BPHC UDS Reporting where specifically adopted
  - Benchmarking
  - Quality improvement implementation and assessment for advocacy and funding initiatives
- Enable deployment and maintenance of a CACHIE QIS infrastructure in a centralized manner (meaning at CACHIE) and in a de-centralized manner (meaning at each CHC) to enable CACHIE to economically support a standardized QIS infrastructure yet allow a collaboration framework amongst participating CHCs. CACHIE will be able to deliver a “QIS-in-a-box”
  - centrally for those CHCs that do not have the will nor the resources (financially or technically) to support an in-house or local QIS

- locally at each participating CHC that has the will and the resources (financially or technically) to support an in-house or local QIS, have the ability to customize CACHIE standardized QIS for their own needs, and finally enable CHCs to share innovations with the rest of the CHCs under CACHIE umbrella.

The information demand requirements are used to identify the list of **Information Domains and their Attributes** so as figure out the Information Supply requirements.

Using the Information Domains and their attributes as the basis, the **Information Supply requirements** are derived through an activity called **Source Data Profiling**. Source Data Profiling that has three main objectives:

- Identify data locations for each of the Information Domains and their attributes from the source EMR and EPM systems is use at each participating CHC
- Identify the data values in each of the source EMR/EPM source data element
- Identify the source data element’s data quality in terms of completeness, consistency and accuracy

The Information Domain model is then used to also derive a CACHIE QIS datawarehouse **Staging Area Data Model**. This staging area data model is then used to develop the **Information Supply requirements** which provide the source EMR and EPM system data locations for each of the Information Domains and their attributes for each participating CHC NextGen instance. The Source EMR-EPM to Staging Area mapping is enumerated to allow development of programs to extract and store source data by participating CHC NextGen instance into the datawarehouse staging area.

The datawarehouse Staging Area, once loaded with source data extracted from a participating CHC NextGen instance, enables the remaining Extract-transform-Load (ETL) processing step of CACHIE QIS life cycle. The conceived ETL processing steps are source data validation, data quality audit, cleansing, change data capture, and finally transformations required to standardize and confirm source data into a CACHIE **Datawarehouse Data Model** so as to prepare the datawarehouse for subsequent information consumption. While this document will address and reference the Datawarehouse Data Model, as previously mentioned, the **ETL processing technical specifications** are not addressed by this document

In summary, the CACHIE QIS environment will be conceived and constructed in an iterative fashion with the expectation that all parties will learn and refine the information demand and supply requirements as the project progresses. Through the use of frequent communications with the CACHIE and designated stakeholders from participating CHCs (identified and participating as part of the Clinical Advisory Work Group or CAWG), the CACHIE QIS infrastructure will be designed and built to meet the CACHIE’s business objectives.

This document is expected to be a “living document” throughout multiple phases and iterations thereof, within CACHIE QIS roadmap. Hence the document is expected to be maintained under strict Change Control.

## Project Background Information

CACHIE is a collaborative project of Colorado Community Health Network (CCHN) and Colorado Community Managed Care Network (CCMCN). With funding from the Health Resources and Services Administration (HRSA), the Agency for Healthcare Research and Quality (AHRQ), and The Colorado Health Foundation (TCHF), Colorado Community Health Centers (CHCs) are joining forces to create a shared information technology system to support quality reporting, analysis, and improvement.

The goal of CACHIE is to promote the data-driven clinical quality improvement at 13 CHCs encompassing 115 clinic sites throughout the state of Colorado. Fundamental to this effort is the concept of interoperability, which requires information systems to efficiently communicate thereby allowing use of shared technology to achieve stated goals. This project will identify ways to share experience and knowledge gained, share costs, and collectively design and implement a system that serves multiple CHCs.

## Project Scope

The first phase of CACHIE QIS project is essentially being considered as a “proof-of-concept” of the stated primary objectives above as well as implementing a desired set of information demand requirements as stated in the AHRQ grant and involving two participating CHCs namely **Mountain Family Health Centers** (Glenwood Springs, CO) and **Clinica Campesina** (Lafayette, CO). Both CHCs use separate instance of the **NextGen EMR/EPM system**.

The AHRQ scope – a.k.a Phase 1 - of CACHIE QIS is to cater to the information demand for clinical quality improvement in

- Chronic disease management of Diabetes Mellitus
- Preventative service for Tobacco Cessation Counseling

Hence it can be concluded that the technical scope of CACHIE QIS Phase 1 consists of:

- Consolidate information demand requirements to formally itemize information supply requirements from participating CHCs
- Source requisite data from MFHC NextGen EMR and EPM system instances
- Source requisite data from CLINICA NextGen EMR and EPM system instances
- Create a consolidated, integrated Data warehouse referencing CACHIE defined Master/Reference data and Standard Medical Vocabulary (ICD9-CM, CPT4, LOINC, and HL V2.6 Code sets where applicable)
- Deliver a set of CACHIE defined common information consumption applications (reports) to be used across all participating CHCs
- Enable participating CHCs to deploy the constructed CACHIE QIS Phase 1 datawarehouse and reports locally on CHCs own infrastructure

## Definitions, Acronyms and Abbreviations

<b>Term, Acronym, Abbreviation</b>	<b>Description or Definition</b>
BPHC	Bureau of Primary Health Care, a division of HRSA
UDS	Unified Data System – A specification from BPHC
EMR	Electronic Medical Record system. Used synonymously with NextGen
EPM	Enterprise Practice Management system. Used synonymously with NextGen
HRSA	Health Resources and Services Administration division of US Dept of Health and Human Services
CAWG	Clinical Advisory Work Group

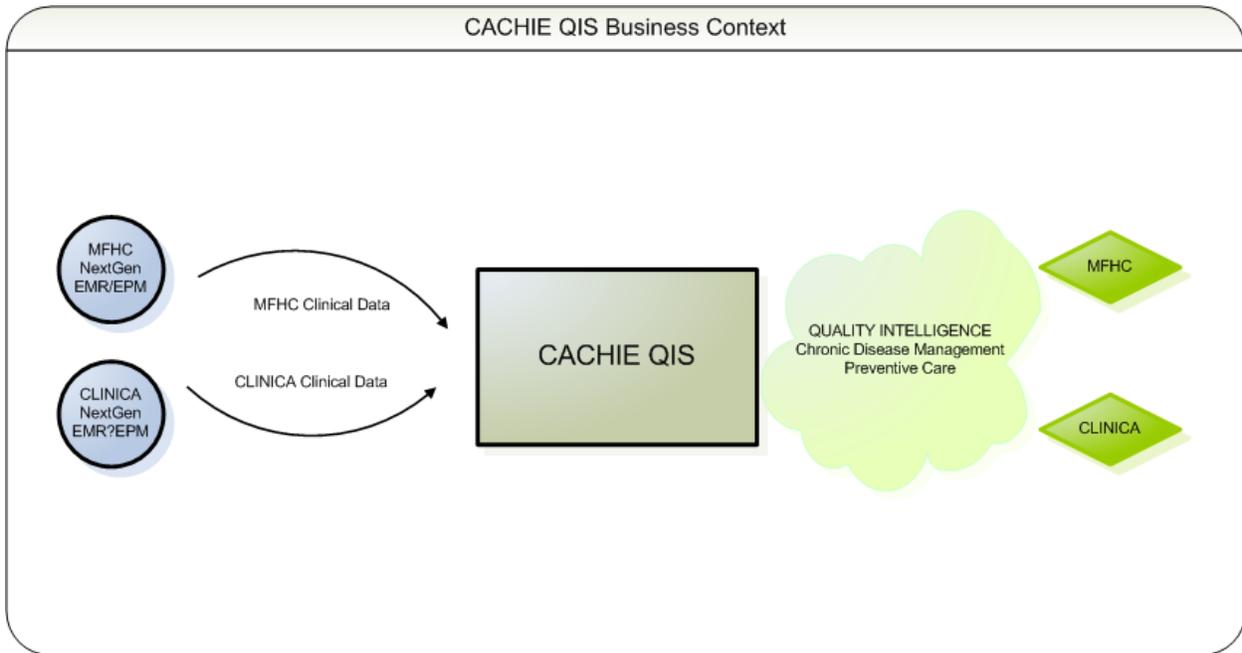
## References

The following documents were used as source materials to produce this Business Requirements document.

- CACHIE Requirements documents compiled by Lisa Schilling namely:
  - “DM\_Req\_&\_Report\_Details\_Limited\_20090612.xls”
  - “CAWG\_Tob\_20090725 FINAL.xls”
- Information Domain and Attributes Document that needs to be used with and is referenced by this document, namely:
  - “ClinicalInformationDomainAttributes-AHRQScope.pdf”
- Source Data Profiling findings documents that could be used with this document for more detailed information on Data Quality of identified source data elements and potential transformation business rules, namely:
  - “MFHC-SourceDataQualityMatrix-20090709.xlsx”
  - “CLINICA-SourceDataQualityMatrix-20090709.xlsx”
- CACHIE QIS Staging Area Physical Data Model Report that could be used with the Staging Area Logical Data Model in this document to gain more detailed information on the tables and fields that make up the Staging database schema:
  - CACHIE-Staging Reports.pdf
- CACHIE QIS Enterprise Datawarehouse (EDW) Physical Data Model Report that could be used with the EDW Logical Data Model in this document to gain more detailed information on the tables and fields that make up the EDW database schema
  - CACHIE-EDW Reports.pdf

## Business Context Diagram

The Business Context Diagram shows the interactions among business entities or participating CHCs and the CACHIE QIS system being built. The graphical components depict business entities and their connections. Each entity and connection has a corresponding textual description.



The Quality Intelligence primary business objective of CACHIE (also a functional component of the business context depicted above) sets the basis for the information demand from the participating CHCs. The information demand sets the basis for information supply from the EMR and EPM systems of various participating CHCs as well as CIIS as a data partner.

## Business Entities

The business entities in the Context Diagram are described in more detail.

Business Entity Name	Business Entity Description
MFHC NextGen EMR and EPM	Mountain Family Health Center's NextGen EMR and EPM system
CLINICA NextGen EMR and EPM	Clinica Campesina's NextGen EMR and EPM system
CACHIE QIS	The Quality Information System being built to supply required Clinical Quality Intelligence to meet the

Business Entity Name	Business Entity Description
	primary business objective of this project
MFHC	The designated stakeholders at Mountain Family Health Centers CHC who will consume Clinical Quality Intelligence generated out of CACHIE QIS
CLINICA	The designated stakeholders at Clinica Campesina CHC who will consume Clinical Quality Intelligence generated out of CACHIE QIS

### Interaction Summary

The interactions or information flow involved in the processes are described in more detail.

Interaction Name	Interaction Description
MFHC Clinical Data	Patient level Clinical data will be sourced from Mountain Family Health Center's NextGen EMR and EPM system
CLINICA Clinical Data	Patient level Clinical data will be sourced from Clinica Campesina's NextGen EMR and EPM system

## Information Demand (ID) Requirements

The Information Demand Requirements listed in the sections that follow have been prioritized by the CACHIE Steering Committee members (a.k.a Business Owners) for the project.

### Information Demand Requirement Categories

The following table lists various Information Demand Requirement Categories that will be analyzed in more detail in the following subsections.

Category #	Requirements Category Description
GN	Ability to meet common requirements across various Information Demand requirements
DM	Ability to produce various UDS related and CHC specific <u>Chronic Diabetes Management</u> clinical measures
TC	Ability to produce various <u>Tobacco Cessation Management</u> clinical measures as prescribed by CAWG

## General ID Requirements

This section describes the requirements that apply to the overall solution in scope and should be considered with each functional requirement category that is designed.

Req. #	Requirement Description	Numerator	Denominator
GN001	<p>Ability to support the following <u>Levels of Analysis</u> for all information being produced out of CACHIE QIS:</p> <ul style="list-style-type: none"> <li>▪ Patient (Age, Gender, Race, Ethnicity, Language, Zip Code)</li> <li>▪ Provider (Primary Care Physician or PCP)</li> <li>▪ Clinic or Site or Location</li> <li>▪ Practice</li> <li>▪ CHC</li> <li>▪ Time Period (Date range, Month, Quarter, Year)</li> </ul>	Not Applicable	Not Applicable
GN002	<p>Ability to collect various <u>Patient Demographics</u> such as:</p> <ul style="list-style-type: none"> <li>▪ Patient Identification key in Source System</li> <li>▪ Patient Medical Chart Number in Source System</li> <li>▪ Name</li> <li>▪ Address</li> <li>▪ Date of Birth</li> <li>▪ Phone</li> <li>▪ Alternate Phone Number</li> <li>▪ Insurer linked to each encounter</li> <li>▪ Primary Care Physician of record</li> <li>▪ Marital Status</li> </ul>	Not Applicable	Not Applicable
GN003	Ability to <u>create and maintain registries for various disease categories</u> of interest at a	Not Applicable	Not Applicable

Req. #	Requirement Description	Numerator	Denominator
	CACHIE level irrespective of registries being maintained at each CHC		
GN003.01	Ability to <u>define eligibility criteria by disease for inclusion of a patient in a disease registry.</u>	Not Applicable	Not Applicable
GN003.02	Ability to <u>define exclusion criteria by disease for removing a patient from a disease registry including tracking the reason for exclusion.</u>	Not Applicable	Not Applicable

## Chronic Diabetes Management ID Requirements

The section describes the requirements for Information Demand by CACHIE Users (participating CHCs) relating to Chronic Diabetes Management functional component of the solution.

Req. #	Requirements Description	Denominator	Numerator	Exclusion
DM001	<b>CHC Patient Population</b>	Not Applicable	All patients in the EMR – children and adults - who are not MOGEd (Moved or Gone Elsewhere) or Deceased as of reporting date	Not Applicable
DM002	<b><u>Create a registry of diabetic patients at a given point in time to support various levels of analysis as described in GN001.</u></b>	Not Applicable	Not Applicable	Not Applicable
DM002 .001	<b><u>Definition: Qualifying DM patient encounters (to be identified before identifying Qualifying DM patients)</u></b>		Any outpatient encounter with the following CPT codes: <ul style="list-style-type: none"> <li>• 92002-92014,</li> <li>• 99201-99205,</li> <li>• 99211-99215,</li> <li>• 99217-99220,</li> <li>• 99241-99245,</li> <li>• 99341-99345,</li> <li>• 99347-99350,</li> <li>• 99384-99387,</li> <li>• 99394-99397,</li> <li>• 99401-99404,</li> </ul>	

Req. #	Requirements Description	Denominator	Numerator	Exclusion
			<ul style="list-style-type: none"> <li>99411,99412,</li> <li>99420, 99429,</li> <li>99455,99456,</li> <li>99499</li> </ul>	
DM002 .002	<b>Definition: Qualifying DM patient to be included in DM Registry</b>	Not Applicable	<p>Any Type 1 or Type II Diabetic patient – child or adult including those who are MOGEEd or Deceased – with at least one qualifying encounter in the last 3 years with one or more of the following ICD9-CM diagnoses codes:</p> <ul style="list-style-type: none"> <li>250.XX</li> <li>357.2X</li> <li>362.0X</li> <li>366.41</li> <li>648.0X</li> </ul> <p>These diagnosis codes could be coded as <i>primary</i> or <i>secondary</i> or <i>tertiary</i> or <i>quaternary</i> in the encounter charge record.</p>	Not Applicable
DM003	Generate DM Registry Report containing all patients in DM Registry as of a chosen reporting date, stratified by	Not Applicable	All patients in DM Registry	<p>For reports exclude patients who:</p> <ul style="list-style-type: none"> <li>MOGEEd during report time period should not</li> </ul>

Req. #	Requirements Description	Denominator	Numerator	Exclusion
	<ol style="list-style-type: none"> <li>1. CHC → Practice → Site → Provider</li> <li>2. Time of last encounter further broken down by                             <ol style="list-style-type: none"> <li>a. ≤ 18 months</li> <li>b. &gt; 18 months</li> </ol> </li> <li>3. Age further broken down by                             <ol style="list-style-type: none"> <li>a. &lt; 18 years by December 31<sup>st</sup> of year of reporting date</li> <li>b. ≥ 18 years</li> </ol> </li> </ol>			be included in the report. <ul style="list-style-type: none"> <li>• Specifically excluded from DM Registry (see Req. # DM004 for how patients could be excluded from DM registry)</li> </ul>
DM004	Create an audit report to assist with the identification of patients with a potentially erroneous diagnosis of DM and help CHC to continue inclusion or specifically exclude patients from DM Registry	Not Applicable	All patients in DM registry as of report run date	None
DM004.001	Show group of patients stratified by ICD9-CM Diagnosis code who have no HbA1c lab test result as of report run date	Not Applicable	For list of ICD9-CM Diagnoses codes see Req. # DM002.002.  Identification of HbA1c Test results: <ul style="list-style-type: none"> <li>• CPT:83036, 83037;</li> <li>• CPT C-II: 3044F, 3045F, 3046F, 3047F;</li> <li>• LOINC: 4548-4, 4549-2, 17856-6</li> </ul>	None

Req. #	Requirements Description	Denominator	Numerator	Exclusion
			<ul style="list-style-type: none"> <li>Also use EMR specific flow sheet/ template source fields</li> </ul>	
DM004.002	Show group of patients who have 3 or fewer qualifying ICD9-CM Diagnosis codes AND less than 6 HbA1C lab test results as of report run date	Not Applicable	<p>For list of ICD9-CM Diagnoses codes see Req. # DM002.002.</p> <p>For list of codes to identify HbA1C lab test result see Req. # DM004.001</p>	None
DM004.003	Provide an ability for CHC to exclude or re-include a previously excluded patient from DM registry as of a date	Not Applicable	Not Applicable	Not Applicable
DM005	Compute a set of <b>HbA1C (Blood Sugar) Control metrics and related measures</b> supporting various <i>levels of analysis (by CHC, by Practice, by Location/Site, by PCP, by Race, by Ethnicity, by Age, and by Patient)</i> .	All patients in the DM Registry as of reporting date	For list of codes to identify HbA1C lab test result see Req. # DM004.001	<p>Exclude patients who:</p> <ul style="list-style-type: none"> <li>MOGEd during report time period should not be included in the report.</li> <li>Specifically excluded from DM Registry</li> </ul>
DM005.001	<u>Total number of patients who do not have a single HbA1c value measurement within the last 365 days</u>	See DM005	Evaluate for ZERO HbA1c results within 365 days of report	See DM005
DM005.002	<u>Percentage of patients who do not have a single HbA1c value measurement within the last 365 days</u>	See DM005	Result in DM005.001	See DM005
DM005.003	<u>Total number of patients who have at least one HbA1c value measurement within the last 365</u>	See DM005	Evaluate for ONE or more (NOT ZERO) HbA1c	See DM005

Req. #	Requirements Description	Denominator	Numerator	Exclusion
	<u>days</u>		results within 365 days of report	
DM005 .004	<u>Percentage of patients who have at least one HbA1c value measurement within the last 365 days</u>	See DM005	Result in DM005.003	See DM005
DM005 .005	<u>Total number of patients who have at least two or more HbA1c value measurements greater than 90 days apart within the last 365 days</u>	See DM005	Count patient if  1. Patient has TWO or more HbA1c results  2. If number of days elapsed between date of earliest and latest HbA1c result within 365 days is 91 days apart or more.	See DM005
DM005 .006	<u>Percentage of patients who have at least two or more HbA1c value measurements greater than 90 days apart within the last 365 days</u>	See DM005	Result in DM005.005	See DM005
DM005 .007	<u>Total number of patients whose last HbA1c value is &lt; 7% within the last 365 days.</u>	See DM005	Evaluate for most recent HbA1C test result in last 365 days from reporting date	See DM005
DM005 .007	<u>Percentage of patients whose last HbA1c value is &lt; 7% within the last 365 days.</u>	See DM005	Result in DM005.007	See DM005
DM005 .008	<u>Total number of patients whose last HbA1c value is &lt; 8% within the last 365 days.</u>	See DM005	Evaluate for most recent HbA1C test result in last 365 days from reporting	See DM005

Req. #	Requirements Description	Denominator	Numerator	Exclusion
			date	
DM005 .009	<u>Percentage of patients whose last HbA1c value is &lt; 8% within the last 365 days.</u>	See DM005	Result in DM005.008	See DM005
DM005 .010	<u>Total number of patients whose last HbA1c value is &gt; 9% within the last 365 days.</u>	See DM005	Evaluate for most recent HbA1C test result in last 365 days from reporting date	See DM005
DM005 .011	<u>Percentage of patients whose last HbA1c value is &gt; 9% within the last 365 days.</u>	See DM005	Result in DM005.010	See DM005
DM005 .012	<u>Total number of patients whose last HbA1c value &gt;= 7% and &lt; 8% within the last 365 days</u>	See DM005	Evaluate for most recent HbA1C test result in last 365 days from reporting date	See DM005
DM005 .013	<u>Percentage of patients whose last HbA1c value &gt;= 7% and &lt; 8% within the last 365 days</u>	See DM005	Result in DM005.012	See DM005
DM005 .014	<u>Total number of patients whose last HbA1c value &gt;= 8% and &lt;= 9% within the last 365 days</u>	See DM005	Evaluate for most recent HbA1C test result in last 365 days from reporting date	See DM005
DM005 .015	<u>Percentage of patients whose last HbA1c value &gt;= 8% and &lt;= 9% within the last 365 days</u>	See DM005	Result in DM005.014	See DM005
DM005 .016	<u>Total number of patients who have Poor control of HbA1c within last 365 days</u>	See DM005	Evaluate for <ul style="list-style-type: none"> <li>most recent HbA1C test result in last 365 days from reporting date &gt; 9% OR</li> </ul>	See DM005

Req. #	Requirements Description	Denominator	Numerator	Exclusion
			<ul style="list-style-type: none"> <li>ZERO HbA1c test results in last 365 days from reporting date</li> </ul>	
DM005 .016	<u>Percentage of patients who have Poor control of HbA1c within last 365 days</u>	See DM005	Result in DM005.016	See DM005
DM006	Compute a set of <b>Blood Pressure (BP) Control metrics and related measures</b> supporting various <i>levels of analysis (by CHC, by Practice, by Location / Site, by PCP, by Race, by Ethnicity, by Age, and by Patient)</i> .	All patients in the DM Registry as of reporting date	Both Systolic Blood Pressure (SBP) and Diastolic Blood Pressure (DBP) values should be recorded on the same date in the appropriate flow sheet / template / vital signs screen in EMR	Exclude patients who: <ul style="list-style-type: none"> <li>MOGED during report time period should not be included in the report.</li> <li>Specifically excluded from DM Registry</li> </ul>
DM006 .001	<u>Total number of patients with at least one SBP and DBP documented within the last 365 days</u>	All patients in the DM Registry as of reporting date	DM Registry patients with at least ONE (not ZERO) SBP and DBP recorded on the same encounter date within last 365 days.	See DM006
DM006 .002	<u>Percentage of patients with SBP and DBP documented within the last 365 days</u>	All patients in the DM Registry as of reporting date	Result in DM006.001	See DM006
DM006 .003	<u>Total number of patients with NO SBP and DBP documented within the last 365 days</u>	All patients in the DM Registry as of reporting date	DM Registry patients with ZERO SBP and DBP recorded on the same encounter date within last 365 days. This includes patients for whom there may be SBP recorded but no DBP or vice versa on the same	See DM006

Req. #	Requirements Description	Denominator	Numerator	Exclusion
			encounter date	
DM006 .004	<u>Percentage of patients with NO SBP and DBP documented within the last 365 days</u>	All patients in the DM Registry as of reporting date	Result in DM006.003	See DM006
DM006 .005	<u>Total number of patients with BP &lt; 140/90 within the last 365 days</u>	Patients with at least one SBP and DBP documented in the last 365 days.  Result in DM006.001	Assess the lowest SBP and DBP reading on the most recent SBP and DBP measurement date and count if SBP < 140 AND DBP < 90.	See DM006
DM006 .006	<u>Percentage of patients with BP &lt; 140/90 within the last 365 days</u>	Result in DM006.001	Result in DM006.005	See DM006
DM006 .007	<u>Total number of patients with BP &lt; 130/80 within the last 365 days</u>	Patients with at least one SBP and DBP documented in the last 365 days.  Result in DM006.001	Assess the lowest SBP and DBP reading on the most recent SBP and DBP measurement date and count if SBP < 130 AND DBP < 80.	See DM006
DM006 .008	<u>Percentage of patients with BP &lt; 130/80 within the last 365 days</u>	Result in DM006.001	Result in DM006.007	See DM006
DM006 .009	<u>Total number of patients with BP &gt;= 140/90 within the last 365 days</u>	Patients with at least one SBP and DBP documented in the last 365 days.  Result in DM006.001	Assess the lowest SBP and DBP reading on the most recent SBP and DBP measurement date and count if SBP >= 140 AND DBP >= 90.	See DM006
DM006	<u>Percentage of patients with BP &gt;= 140/90</u>	Result in DM006.001	Result in DM006.009	See DM006

Req. #	Requirements Description	Denominator	Numerator	Exclusion
.0010	<u>within the last 365 days</u>			
DM006 .0011	<u>Total number of patients with BP &gt;= 130/80 within the last 365 days</u>	Patients with at least one SBP and DBP documented in the last 365 days.  Result in DM006.001	Assess the lowest SBP and DBP reading on the most recent SBP and DBP measurement date and count if SBP >= 130 AND DBP >= 80.	See DM006
DM006 .0012	<u>Percentage of patients with BP &gt;= 130/80 within the last 365 days</u>	Result in DM006.001	Result in DM006.0011	See DM006
DM007	Compute a set of <b>LDL Control metrics and related measures</b> supporting various <i>levels of analysis (by CHC, by Practice, by Location/Site, by PCP, by Race, by Ethnicity, by Age, and by Patient).</i>	All patients in the DM Registry as of reporting date  See DM005	Identification of LDL lab results maybe done in the following ways: <ul style="list-style-type: none"> <li>• CPT: 80061, 83700, 83701, 83704, 83721;</li> <li>• CPT C-II: 3048F, 3049F, 3050F;</li> <li>• LOINC: 2089-1, 12773-8, 13457-7, 18261-8, 18262-6, 22748-8, 24331-1, 39469-2, 49132-4;</li> <li>• Also use EMR specific flow sheet/ template source fields</li> </ul>	Exclude patients who: <ul style="list-style-type: none"> <li>• MOGED during report time period should not be included in the report.</li> <li>• Specifically excluded from DM Registry</li> </ul>
DM007 .001	<u>Total number of patients with at least one LDL result documented within the last 365 days</u>	See DM007	DM Registry patients with at least ONE (not ZERO) LDL test result recorded within	See DM007

Req. #	Requirements Description	Denominator	Numerator	Exclusion
			last 365 days.	
DM007 .002	<u>Percentage of patients with at least one LDL result documented within the last 365 days</u>	See DM007	Result in DM007.001	See DM007
DM007 .003	<u>Total number of patients with NO LDL result documented within the last 365 days</u>	See DM007	DM Registry patients with ZERO LDL test results recorded within last 365 days.	See DM007
DM007 .004	<u>Percentage of patients with NO LDL result documented within the last 365 days</u>	See DM007	Result in DM007.003	See DM007
DM007 .005	<u>Total number of patients with LDL &gt; 130 within the last 365 days</u>	Patients with at least one LDL test result documented in the last 365 days.  Result in DM007.001	Assess the LDL test result on the most recent measurement date within last 365 days and count if LDL > 130.	See DM007
DM007 .006	<u>Percentage of patients with LDL &gt; 130 within the last 365 days</u>	Result in DM007.001	Result in DM007.005	See DM007
DM007 .007	<u>Total number of patients with LDL &gt;= 100 and &lt;= 130 within the last 365 days</u>	Patients with at least one LDL test result documented in the last 365 days.  Result in DM007.001	Assess the LDL test result on the most recent measurement date within last 365 days and count if LDL >= 100 AND <= 130.	See DM007
DM007 .008	<u>Percentage of patients with LDL &gt;= 100 and &lt;= 130 within the last 365 days</u>	Result in DM007.001	Result in DM007.007	See DM007
DM007 .009	<u>Total number of patients with LDL &lt; 100 within the last 365 days</u>	Patients with at least one LDL test result documented in the last 365 days.	Assess the LDL test result on the most recent measurement date within last 365 days and count if	See DM007

Req. #	Requirements Description	Denominator	Numerator	Exclusion
		Result in DM007.001	LDL < 100.	
DM007.0010	<u>Percentage of patients with LDL &lt; 100 within the last 365 days</u>	Result in DM007.001	Result in DM007.009	See DM007
DM007.0011	<u>Total number of patients with Poor Control of LDL within the last 365 days</u>	See DM007	<p>Assess the LDL test result on the most recent measurement date within last 365 days and count if:</p> <ul style="list-style-type: none"> <li>• LDL &gt; 130 OR</li> <li>• ZERO LDL test results in last 365 days from reporting date</li> </ul> <p>Essentially sum of results in DM007.003 and DM007.005</p>	See DM007
DM007.0012	<u>Percentage of patients with Poor Control of LDL within the last 365 days</u>	See DM007	Result in DM007.0011	See DM007
DM008	Compute a set of <b>Self management goal metrics and related measures</b> in registry supporting various <i>levels of analysis</i> .	<p>All patients in the DM Registry as of reporting date</p> <p>See DM005</p>	<p>Source is flow sheets (such as DM, HTN, Obesity etc). Most of CHCs have general template for self management goals applicable for all chronic diseases and not necessarily for each chronic disease. Most CHCs time stamp the entry.</p>	<p>Exclude patients who:</p> <ul style="list-style-type: none"> <li>• MOGED during report time period should not be included in the report.</li> <li>• Specifically excluded from DM Registry</li> </ul>

Req. #	Requirements Description	Denominator	Numerator	Exclusion
DM008.001	<u>Total number of patients who have established one or more self-management goals to control diabetes within the last 365 days.</u>	See DM008	Count if Self Management goal is set and the date when established/generated or revised/updated is within last 365 days	See DM008
DM008.002	<u>Percentage of patients who have established one or more self management goals to control diabetes within the last 365 days.</u>	See DM008	Result in DM008.001	See DM008
DM009	Compute a set of <b>Retinal/Eye exam status metrics and related measures</b> supporting various <i>levels of analysis</i> .	All patients in the DM Registry as of reporting date See DM005	<i>Note: Retinal exam defined as retinal or dilated exam by an eye care professional, including retinal photo screening exam if reviewed by eye care professional.</i>  Source is DM flow sheets / template.  OR  CPT Codes: 67028, 67030, 67031, 67036, 67038-67040, 67101, 67105, 67107, 67108, 67110;	Exclude patients who: <ul style="list-style-type: none"> <li>• MOGED during report time period should not be included in the report.</li> <li>• Specifically excluded from DM Registry</li> </ul>
DM009.001	<u>Number of patients who are eligible for a retinal/eye exam</u>	See DM005 with exclusions	All patients in DM Registry except those who are accounted for as	See DM009 PLUS <ul style="list-style-type: none"> <li>• Those who had a normal retinal exam in</li> </ul>

Req. #	Requirements Description	Denominator	Numerator	Exclusion
			"exclusions".	the prior 12 months <ul style="list-style-type: none"> <li>• Those who were specifically excluded from a retinal exam (MFHC &amp; CLINICA capture retinal exam exclusions in DM Flow sheet)</li> <li>• CPT C-II 3072 F indicates that "no evidence of retinopathy in a dilated retinal exam performed within the last 12 months", so if used in the prior year this is an exclusion. "blindness" is not an exclusion due to errors in coding, inability to distinguish legal vs. complete blindness</li> </ul>
DM009.002	<u>Total number of diabetic patients who have had a retinal exam within the last 365 days.</u>	DM Registry patients eligible for a retinal exam in last 365 days  Result in DM009.001	Eligible patients in DM Registry that have Retinal exam recorded (as mentioned in DM009 above) with the date exam done within last 365 days of report date.	See DM009.001 above

Req. #	Requirements Description	Denominator	Numerator	Exclusion
DM009.003	<u>Percentage of diabetic patients who have had a retinal exam within the last 365 days.</u>	Result in DM009.001	Result in DM009.002	See DM009.001 above
DM010	Compute a set of <b>Monofilament exam metrics and related measures</b> supporting various <i>levels of analysis</i> .	All patients in the DM Registry as of reporting date  See DM005	<i>Note: Monofilament exam is not the same as Foot exam.</i>  Source is DM flow sheets / template.	Exclude patients who: <ul style="list-style-type: none"> <li>• MOGED during report time period should not be included in the report.</li> <li>• Specifically excluded from DM Registry</li> </ul>
DM010.001	<u>Number of patients who are eligible for a monofilament exam</u>	See DM010 with exclusions	All patients in DM Registry except those who are accounted for as “exclusions”.	See DM010 PLUS <ul style="list-style-type: none"> <li>• Patients diagnosed with diabetic polyneuropathy (ICD9-CM code 357.2) or as documented as “excluded” in the flow sheet/template.</li> </ul> <i>Note: There is no diagnosis code for bilateral foot amputations, therefore we will not try to find this exclusion.</i>
DM010.002	<u>Total number of diabetic patients who have had a retinal exam within the last 365 days.</u>	DM Registry patients eligible for a monofilament exam in last 365 days  Result in DM010.001	Eligible patients in DM Registry that have Monofilament exam recorded (as mentioned in DM009 above) with the date exam done within last 365 days of report date.	See DM010.001 above

Req. #	Requirements Description	Denominator	Numerator	Exclusion
DM010.003	<u>Percentage of diabetic patients who have had a retinal exam within the last 365 days.</u>	Result in DM010.001	Result in DM010.002	See DM010.001 above
DM011	Compute a set of <b>Nephropathy – Renal Screening metrics and related measures</b> supporting various <i>levels of analysis</i> .	All patients in the DM Registry as of reporting date  See DM005	Source is DM flow sheets / template  OR  LOINC Codes for Nephropathy Screening: 753-3, 1754-1, 1755-8, 1757-4, 2887-8, 2888-6, 2889-4, 2890-2, 9318-7, 11218-5, 12842-1, 13801-6, 14956-7, 14957-5, 14958-3, 14959-1, 13705-9, 14585-4, 18373-1, 20621-9, 21059-1, 21482-5, 26801-1, 27298-9, 30000-4, 30001-2, 30003-8, 32209-9, 32294-1, 32551-4, 34366-5, 34535-5, 35663-4, 40486-3, 40662-9, 40663-7, 43605-5, 43606-3, 43607-1, 44292-1	Exclude patients who: <ul style="list-style-type: none"> <li>• MOGED during report time period should not be included in the report.</li> <li>• Specifically excluded from DM Registry</li> </ul>
DM011.001	<u>Number of diabetic patients who are eligible for nephropathy exam</u>	See DM011 with exclusions	All patients in DM Registry except those who are accounted for as “exclusions”.	See DM011 PLUS <ul style="list-style-type: none"> <li>• Patients who were documented as “excluded” in the flow</li> </ul>

Req. #	Requirements Description	Denominator	Numerator	Exclusion
				sheet/template.
DM011 .002	<u>Total number of diabetic patients who have had at least one Microalbumin test or Microalbumin- Creatinine Ratio (MAC) test within the last 365 days.</u>	Number of eligible diabetic patients  Result in DM011.001	Assess for patients with at least ONE Microalbumin test or Microalbumin- Creatinine Ratio (MAC) test within the last 365 days – the required test identified as described in DM011 above	See DM011.001 above
DM011 .003	<u>Percentage of diabetic patients who have had at least one Microalbumin test or Microalbumin- Creatinine Ratio (MAC) test within the last 365 days.</u>	Result in DM011.001	Result in DM011.002	See DM011.001 above
DM011 .004	<u>Total number of diabetic patients who have had at least one Creatinine test within the last 365 days.</u>	Number of eligible diabetic patients  Result in DM011.001	Assess for patients with at least ONE Creatinine test within the last 365 days – the required test identified either as documented in DM Flow sheet or through LOINC Code 38483-4	See DM011.001 above
DM011 .005	<u>Percentage of diabetic patients who have had at least one Creatinine test within the last 365 days.</u>	Result in DM011.001	Result in DM011.004	See DM011.001 above
DM012	Compute a set of <b>Tobacco Cessation metrics and related measures</b> supporting various <i>levels of analysis</i> .	All patients in the DM Registry as of reporting date  See DM005	Source is DM or Tobacco Cessation Flow sheets / templates or Social History screens	Exclude patients who: <ul style="list-style-type: none"> <li>• MOGED during report time period should not be included in the</li> </ul>

Req. #	Requirements Description	Denominator	Numerator	Exclusion
				report. <ul style="list-style-type: none"> <li>Specifically excluded from DM Registry</li> </ul>
DM012 .001	<u>Total number of diabetic patients who were asked about their smoking status within last 365 days</u>	All patients in the DM Registry with exclusions as of reporting date  See DM005	Count if patient's DM or Tobacco Flow sheet/ template or Social History has the smoking status documented (Yes or No / Current or Former or Never) with a recorded date within last 365 days of reporting date.  <i>Note: Some CHCs record this at every encounter and hence found in DM or Tobacco Flow sheets while some record it once in Social History. This also depends on EMR functionality available</i>	See DM012 above
DM012 .002	<u>Percentage of diabetic patients who were asked about their smoking status within last 365 days</u>	See denominator in DM012.001 above	Result in DM012.001	See DM012 above
DM012 .003	<u>Total number of diabetic patients who are current smokers</u>	See denominator in DM012.001 above	Count if patient's DM or Tobacco Flow sheet/ template or Social History has the smoking status documented as "Yes" or "Current" with a recorded date within last 365 days of	See DM012 above

Req. #	Requirements Description	Denominator	Numerator	Exclusion
			reporting date	
DM012 .004	<u>Percentage of diabetic patients who are current smokers</u>	See denominator in DM012.001 above	Result in DM012.003	See DM012 above
DM012 .005	<u>Total number of diabetic patients who are current smokers and who were advised to quit</u>	See current smoker patient population DM012.003 above	Count if patient's DM or Tobacco Flow sheet/ template or Social History has the smoking cessation advice documented as "Yes" with the date of advise within last 365 days of reporting date.	See DM012 above
DM012 .006	<u>Percentage of diabetic patients who are current smokers and who were advised to quit</u>	See current smoker patient population DM012.003 above	Result in DM012.005	See DM012 above

## Tobacco Cessation Management ID Requirements

The section describes the requirements for Information Demand by CACHIE Users (participating CHCs) relating to Tobacco Cessation Management functional component of the solution.

Req. #	Requirements Description	Denominator	Numerator	Exclusion
TC001	<b>Definition: Active CHC Patient Population</b>	Not Applicable	<p>All patients in the EMR – children and adults - who</p> <ul style="list-style-type: none"> <li>are not MOGE (Moved or Gone Elsewhere) or Deceased as of reporting date</li> <li>has a qualifying clinical encounter in the last 18 months</li> </ul>	Not Applicable
TC002	<b>Definition: Qualifying TC patient encounters</b>		<p>Any outpatient encounter with the following CPT codes:</p> <ul style="list-style-type: none"> <li>92002-92014,</li> <li>99201-99205,</li> <li>99211-99215,</li> <li>99217-99220,</li> <li>99241-99245,</li> <li>99341-99345,</li> <li>99347-99350,</li> <li>99384-99387,</li> <li>99394-99397,</li> <li>99401-99404,</li> </ul>	

Req. #	Requirements Description	Denominator	Numerator	Exclusion
			<ul style="list-style-type: none"> <li>• 99411,99412,</li> <li>• 99420, 99429,</li> <li>• 99455,99456,</li> <li>• 99499</li> </ul>	
TC003	Compute a set of <b>ASKED step of Tobacco Cessation related metrics and measures</b> supporting various <i>levels of analysis</i> .	See TC001 and TC002 where applicable	Source is Tobacco Cessation Flow sheets/templates or Social History screen in CHC EMR	None
TC003.001	<u>Number of distinct/unduplicated CHC patients age =&gt; 15 yrs of age with a qualifying encounter within 18 months of report date.</u>	TC002 and TC001	Patient to be 15 years of age by Dec 31 of Reporting Year	None
TC003.002	<u>Number of encounters for patients &gt;= 15 years who were ASKED about tobacco use at any encounter within last 18 months</u>	Result in TC003.001	Count if patient's Tobacco Flow sheet/ template has the smoking status documented (Yes or No / Current or Former or Never) with an encounter date within last 18 months of reporting date and who will be 15 years of age by Dec 31 of Reporting Year.  <i>Note: Some CHCs record this at every encounter and hence found in Tobacco Flow sheets while some record it once in Social History. This requirement is not valid if recorded only once in</i>	None

Req. #	Requirements Description	Denominator	Numerator	Exclusion
			<i>Social History</i>	
TC003.0 03	<u>Number of distinct/unduplicated patients <math>\geq</math> 15 years who were ASKED about tobacco use at any encounter within last 18 months</u>	Result in TC003.002  Result in TC003.001	Count distinct/unduplicated patient if patient's Tobacco Flow sheet/ template has the smoking status documented (Yes or No / Current or Former or Never) with an encounter date within last 18 months of reporting date and who will be 15 years of age by Dec 31 of Reporting Year.  If CHC records only once in Social History, then count distinct/unduplicated patient if patient's Social History screen has the smoking status documented (Yes or No / Current or Former or Never) with a recorded date within last 18 months of reporting date and who will be 15 years of age by Dec 31 of Reporting Year.	None
TC003.0 04	Number of distinct/unduplicated CHC patients age < 15 yrs of age with a qualifying encounter within 18 months of report date.	TC002 and TC001	Patient to be 14 years of age by Dec 31 of Reporting Year	None

Req. #	Requirements Description	Denominator	Numerator	Exclusion
TC003.0 05	<u>Number of encounters for patients &lt; 15 years who or whose family was ASKED about Second Hand Smoke (SHS) exposure at any encounter within last 18 months</u>	Result in TC003.004	Count if patient's Tobacco Flow sheet/ template has the SHS exposure documented (Yes or No) with an encounter date within last 18 months of reporting date and who will be 14 years of age by Dec 31 of Reporting Year.  <i>Note: Some CHCs record this at every encounter and hence found in Tobacco Flow sheets while some record it once in Social History. This requirement is not valid if recorded only once in Social History</i>	None
TC003.0 06	<u>Number of distinct/unduplicated patients &lt; 15 years who or whose family was ASKED about SHS exposure at any encounter within last 18 months</u>	Result in TC003.005  Result in TC003.004	Count distinct/unduplicated patient if patient's Tobacco Flow sheet/ template has the SHS exposure documented (Yes or No) with an encounter date within last 18 months of reporting date and who will be 14 years of age by Dec 31 of Reporting Year.  If CHC records only once in Social History, then count	None





Req. #	Requirements Description	Denominator	Numerator	Exclusion
TC004.0 03	<p><b>Current Tobacco User Encounters</b></p> <p><u>Number of distinct/unduplicated patients who were identified as Current Tobacco Users at most recent encounter within last 18 months where tobacco status was addressed.</u></p>	Result in TC003.002	<p>Count patient encounter if patient’s Tobacco Flow sheet/ template has the smoking status documented as “Yes” or “Current” in the most recent encounter within last 18 months of reporting date and who will be 15 years of age by Dec 31 of Reporting Year.</p> <p><i>Note: Some CHCs record this at every encounter and hence found in Tobacco Flow sheets while some record it once in Social History. This requirement is not valid if recorded only once in Social History</i></p>	None
TC004.0 04	<p><b>Current SHS exposure Encounters</b></p> <p><u>Number of distinct/unduplicated patients who were identified as currently having SHS exposure at most recent encounter within last 18 months where SHS exposure was addressed</u></p>	Result in TC003.005	<p>Count distinct/unduplicated patient if patient’s Tobacco Flow sheet/ template has the SHS exposure documented as “Yes” in the most recent encounter within last 18 months of reporting date and who will be 14 years of age by Dec 31 of Reporting Year.</p> <p><i>Note: Some CHCs record this at</i></p>	None

Req. #	Requirements Description	Denominator	Numerator	Exclusion
			<i>every encounter and hence found in Tobacco Flow sheets while some record it once in Social History. This requirement is not valid if recorded only once in Social History</i>	
TC005	Compute a set of <b>ADVISED step of Tobacco Cessation related metrics and measures</b> supporting various <i>levels of analysis</i> .	TC004.001, TC004.002, TC004.003, TC004.004 as applicable	See below	None
TC005.0 01	<u>Number of current tobacco users ADVISED to quit within last 18 months of reporting date</u>	Current Tobacco Users within last 18 months  See TC004.001	Within the denominator population, count distinct/unduplicated current tobacco user if patient's Tobacco Flow sheet/ template has the appropriate "Advised to quit" field documented as "Yes".	None
TC005.0 02	<u>Number of encounters across all current tobacco users where the user was ADVISED to quit within last 18 months of reporting date</u>	Current Tobacco User encounters within last 18 months  See TC004.003	Within the denominator population, count encounter if patient's Tobacco Flow sheet/ template has the appropriate "Advised to quit" field documented as "Yes".	None
TC005.0 03	<u>Number of Patients/Patients' family ADVISED of harm for CURRENT SHS exposure within last</u>	Current SHS Exposure patients within last 18 months	Within the denominator population, count	None

Req. #	Requirements Description	Denominator	Numerator	Exclusion
	<u>18 months of reporting date</u>	See TC004.002	distinct/unduplicated current SHS patient if patient's Tobacco Flow sheet/ template has the appropriate "Advised of SHS harm" field documented as "Yes".	
TC005.0 04	<u>Number of encounters across all current SHS Exposure patients where the patient/family was ADVISED of harm for CURRENT SHS exposure within last 18 months of reporting date</u>	Current SHS Exposure encounters within last 18 months  See TC004.004	Within the denominator population, count encounter if patient's Tobacco Flow sheet/ template has the appropriate "Advised of SHS harm" field documented as "Yes".	None
TC006	Compute a set of <b>ASSESSED step of Tobacco Cessation related metrics and measures</b> supporting various <i>levels of analysis</i> .	TC004.001, TC004.003 as applicable	See below	None
TC006.0 01	<u>Number of current tobacco users ASSESSED for readiness to quit nicotine within last 18 months of reporting date</u>	Current Tobacco Users within last 18 months  See TC004.001	Within the denominator population, count distinct/unduplicated current tobacco user if patient's Tobacco Flow sheet/ template has the appropriate "Assessed for readiness to quit" field documented as "Yes".	None
TC006.0	<u>Number of encounters across all current tobacco</u>	Current Tobacco User	Within the denominator	None

Req. #	Requirements Description	Denominator	Numerator	Exclusion
02	<u>users where the user was ASSESSED for readiness to quit nicotine within last 18 months of reporting date</u>	encounters within last 18 months  See TC004.003	population, count encounter if patient's Tobacco Flow sheet/ template has the appropriate "Assessed for readiness to quit" field documented as "Yes".	
TC007	Compute a set of <b>REFER/ASSISTED step of Tobacco Cessation related metrics and measures</b> supporting various <i>levels of analysis</i> .	TC004.001, TC004.003 as applicable	See below	None
TC007.0 01	<u>Number of current tobacco users REFERRED/ ASSISTED to quit nicotine within last 18 months of reporting date</u>	Current Tobacco Users within last 18 months  See TC004.001	Within the denominator population, count distinct/unduplicated current tobacco user if patient's Tobacco Flow sheet/ template has the appropriate "Referred/ Assisted to quit" field documented as "Yes".	None
TC007.0 02	<u>Number of encounters across all current tobacco users where the user was REFERRED/ ASSISTED to quit nicotine within last 18 months of reporting date</u>	Current Tobacco User encounters within last 18 months  See TC004.003	Within the denominator population, count encounter if patient's Tobacco Flow sheet/ template has the appropriate "Referred/ Assisted to quit" field documented as "Yes".	None
TC008	Compute <b>QUIT RATE</b> metric  Number of distinct/unduplicated patients with	Current Tobacco Users within last 18 months	Within the denominator population, count	

Req. #	Requirements Description	Denominator	Numerator	Exclusion
	status change from current to former tobacco user	See TC004.001	distinct/unduplicated current tobacco user if patient's Tobacco Flow sheet/ template has the "Tobacco status" field changed from "Current"/"Yes" to "Former" / "No" anytime within the last 18 months	

## Information Domains and Attributes

Based on the Information Demand Requirements listed in the preceding sections, Information Domains or Subject Areas and their attributes have been derived. These Information Domains and Attributes enable the subsequent task of Source Data Profiling which results in identifying the Information Supply Requirements

### Information Domains and Attributes

The following table lists various Information Domains and their attributes that allow identification of appropriate candidate source data locations.

Information Domain	Attribute Name	Data Type	LEN	Nullable	Comments
<b>ORGANIZATION</b>					
	Source System ID	Varchar	10	No	Based on source system ("MFHC", "CLINICA", "MCPN", "DENVHEALTH", "PEAKVISTA", "IPNAVISTA", "VALLEYWIDE", "QHN", "CORHIO", etc)
	Organization Source ID	Varchar	40	No	Primary Key for Organization at source system
	Organization Name	Varchar	50	No	
	Practice Source ID	Varchar	40	No	Primary Key for Practice at source system
	Practice Name	Varchar	50	No	
	Address Line 1	Varchar	55	Yes	
	Address Line 2	Varchar	55	Yes	
	City	Varchar	35	Yes	
	State	Varchar	3	Yes	

Information Domain	Attribute Name	Data Type	LEN	Nullable	Comments
	ZIP Code	Varchar	9	Yes	
	Delete Indicator	Char	1	No	
	Create Timestamp	Varchar	25	No	Valid values: "Y" or "N"; Default to "N" in initial file; Change extracts have 'Y' when deleted at source
	Modify Timestamp	Varchar	25	No	Format: YYYY-MM-DD HH:MM:SS
	Row Timestamp	Varchar	40	No	Hexadecimal number
<b>LOCATION / FACILITY</b>					
	Source System ID	Varchar	10	No	Based on source system ("MFHC", "CLINICA", "MCPN", "DENVHEALTH", "PEAKVISTA", "IPNAVISTA", "VALLEYWIDE", "QHN", "CORHIO", etc)
	Location Source Identifier	Varchar	40	No	Primary Key for Location at source system
	Location Name	Varchar	40	No	
	Location Address Line 1	Varchar	55	Yes	
	Location Address Line 2	Varchar	55	Yes	
	Location City	Varchar	35	No	
	Location State	Varchar	3	No	
	Location Zip Code	Varchar	9	No	
	Delete Indicator	Char	1	No	Valid values: "Y" or "N"; Default to "N" in initial file; Change extracts

Information Domain	Attribute Name	Data Type	LEN	Nullable	Comments
					have 'Y' when deleted at source
	Create Timestamp	Varchar	25	No	Format: YYYY-MM-DD HH:MM:SS
	Modify Timestamp	Varchar	25	No	Format: YYYY-MM-DD HH:MM:SS
	Row Timestamp	Varchar	40	No	Hexadecimal number
<b>PRACTICE LOCATION</b>					
	Source System ID	Varchar	10	No	Based on source system ("MFHC", "CLINICA", "MCPN", "DENVHEALTH", "PEAKVISTA", "IPNAVISTA", "VALLEYWIDE", "QHN", "CORHIO", etc)
	Practice Source ID	Varchar	40	No	Primary Key for Practice at source system
	Location Source ID	Varchar	40	No	Primary Key for Location at source system
	Create Timestamp	Varchar	25	No	Valid values: "Y" or "N"; Default to "N" in initial file; Change extracts have 'Y' when deleted at source
	Modify Timestamp	Varchar	25	No	Format: YYYY-MM-DD HH:MM:SS
	Row Timestamp	Varchar	40	No	Hexadecimal number
<b>PROVIDER/STAFF</b>					
	Source System ID	Varchar	10	No	Based on source system ("MFHC", "CLINICA", "MCPN", "DENVHEALTH", "PEAKVISTA", "IPNAVISTA", "VALLEYWIDE", "QHN", "CORHIO", etc)

Information Domain	Attribute Name	Data Type	LEN	Nullable	Comments
	Staff Source Identifier	Varchar	40	No	Primary Key for Staff at source system
	Staff First Name	Varchar	30	No	
	Staff Middle Initial	Varchar	30	Yes	
	Staff Last Name	Varchar	30	No	
	Provider Indicator	Char	1	No	Valid values: "Y" for Provider (per UDS definition) or "N" for non-provider
	Staff Type Description	Varchar	255	Yes	See Staff Types worksheet for valid values
	Primary Speciality	Varchar	255	Yes	
	National Provider Identifier	Varchar	20	Yes	
	Provider Care Team	Varchar	255	Yes	
	Delete Indicator	Char	1	No	Valid values: "Y" or "N"; Default to "N" in initial file; Change extracts have 'Y' when deleted at source
	Create Timestamp	Varchar	25	No	Format: YYYY-MM-DD HH:MM:SS
	Modify Timestamp	Varchar	25	Yes	Format: YYYY-MM-DD HH:MM:SS

Information Domain	Attribute Name	Data Type	LEN	Nullable	Comments
	Row Timestamp	Varchar	40	No	Hexadecimal number
<b>PRACTICE PROVIDER</b>					
	Source System ID	Varchar	10	No	
	Organization Source Identifier	Varchar	40	No	Primary Key for Organization at source system
	Practice Source Identifier	Varchar	40	No	Primary Key for Practice at source system
	Staff Source Identifier	Varchar	40	No	Primary Key for Staff at source system
	Rendering Provider Indicator	Char	1	No	Valid values: "Y", "N"
	Create Timestamp	Varchar	25	No	Format: YYYY-MM-DD HH:MM:SS
	Modify Timestamp	Varchar	25	Yes	Format: YYYY-MM-DD HH:MM:SS
	Row Timestamp	Varchar	40	No	Hexadecimal number
<b>PAYER</b>					
	Source System ID	Varchar	10	No	Based on source system ("MFHC", "CLINICA", "MCPN", "DENVHEALTH", "PEAKVISTA", "IPNAVISTA", "VALLEYWIDE", "QHN", "CORHIO", etc)
	Payer Source Identifier	Varchar	40	No	Primary Key for Payer at source system

Information Domain	Attribute Name	Data Type	LEN	Nullable	Comments
	Payer Name	Varchar	40	No	
	Payer Class	Varchar	50	Yes	See Payer Class worksheet for valid values
	Payer Street Address Line 1	Varchar	60	No	
	Payer Street Address Line 2	Varchar	60	Yes	
	Payer City	Varchar	35	No	
	Payer State	Varchar	3	No	
	Payer Zip Code	Varchar	9	No	
	Group Name	Varchar	40	Yes	
	Insurance Type	Varchar	255	Yes	
	Claim Type	Varchar	255	Yes	
	Plan Type	Varchar	255	Yes	

Information Domain	Attribute Name	Data Type	LEN	Nullable	Comments
	Delete Indicator	Char	1	No	Valid values: "Y" or "N"; Default to "N" in initial file; Change extracts have 'Y' when deleted at source
	Create Timestamp	Varchar	25	No	Format: YYYY-MM-DD HH:MM:SS
	Modified Timestamp	Varchar	25	No	Format: YYYY-MM-DD HH:MM:SS
	Row Timestamp	Varchar	40	No	Hexadecimal number
<b>PATIENT</b>					
	Source System ID	Varchar	10	No	Based on source system ("MFHC", "CLINICA", "MCPN", "DENVHEALTH", "PEAKVISTA", "IPNAVISTA", "VALLEYWIDE", "QHN", "CORHIO", etc)
	Organization Source ID	Varchar	40	No	Primary Key for Organization at source system
	Practice Source ID	Varchar	40	No	Primary Key for Practice at source system
	Patient Source Identifier	Varchar	40	No	Primary Key for Patient at source system
	Alternate Source Identifier	Varchar	40	Yes	Alternate Key for Patient at "DENHEALTH" source system

Information Domain	Attribute Name	Data Type	LEN	Nullable	Comments
	Registered Location Source Identifier	Varchar	40	No	Assigned default location for the patient. Used for grouping patients by location irrespective of location where a care was rendered for a given encounter.
	Medical Record Number	Varchar	25	Yes	
	Prefix	Varchar	12	Yes	
	First Name	Varchar	60	No	Note: Optional if PHI cannot be shared with CACHIE
	Middle Initial	Varchar	25	Yes	
	Last Name	Varchar	60	No	Note: Optional if PHI cannot be shared with CACHIE
	Suffix	Varchar	25	Yes	
	Gender	Char	1	No	
	Date of Birth	Varchar	10	No	
	Patient Address Line 1	Varchar	60	No	Note: Optional if PHI cannot be shared with CACHIE
	Patient Address Line 2	Varchar	60	Yes	
	City	Varchar	60	No	
	State	Varchar	3	No	

Information Domain	Attribute Name	Data Type	LEN	Nullable	Comments
	Zip Code	Varchar	9	No	
	Home Phone number	Varchar	10	Yes	
	Day Phone Number	Varchar	10	Yes	
	Alternate Phone Number	Varchar	10	Yes	
	Race	Varchar	255	Yes	Valid Races lookup
	Ethnicity	Varchar	255	Yes	Valid Ethnicity lookup
	Primary Language	Varchar	255	Yes	Valid Language lookup
	Marital Status	Char	1	Yes	Valid values are: "M"(Married), "S" (Single), "U" (Unknown), "D" (Divorced), "W" (Widowed), "N"(Not Applicable)
	Expired Indicator	Char	1	No	Valid values: "Y" or "N"
	Expired Date	Varchar	10	Yes	Preferable if "Expired Indicator" = "Y"; Format: YYYY-MM-DD
	Religion	Varchar	255	Yes	
	Veteran Status	Char	1	No	Valid values: "Y" or "N"

Information Domain	Attribute Name	Data Type	LEN	Nullable	Comments
	Patient Consent	Varchar	255	No	Valid values: "Y" or "N"; If only consented patient information to be sent then default expected is "Y" (Delete if it does not exist in MFHC?)
	Patient Status	Varchar	60	No	Valid values: "Active", "Inactive", "MOGE", "Deceased"
	Primary Care Physician Staff Source Identifier	Varchar	40	No	Primary Key for PCP at source system
	Mothers First Name	Varchar	60	Yes	Note: Optional if PHI cannot be shared with CACHIE
	Mothers Last Name	Varchar	60	Yes	Note: Optional if PHI cannot be shared with CACHIE
	Mothers Middle Initial	Varchar	25	Yes	Note: Optional if PHI cannot be shared with CACHIE
	Emergency Contact Phone	Varchar	10	Yes	Note: Optional if PHI cannot be shared with CACHIE

Information Domain	Attribute Name	Data Type	LEN	Nullable	Comments
	Number				
	Social Security Number	Char	9	Yes	Note: Optional if PHI cannot be shared with CACHIE
	Student Status	Char	1	Yes	Valid values: "Y" or "N"
	Create Timestamp	Varchar	25	No	Format: YYYY-MM-DD HH:MM:SS
	Modified Timestamp	Varchar	25	No	Format: YYYY-MM-DD HH:MM:SS
	Row Timestamp	Varchar	40	No	Hexadecimal number
<b>FQHC PATIENT</b>					
	Source System ID	Varchar	10	No	Based on source system ("MFHC", "CLINICA", "MCPN", "DENVHEALTH", "PEAKVISTA", "IPNAVISTA", "VALLEYWIDE", "QHN", "CORHIO", etc)
	Organization Source ID	Varchar	40	No	Primary Key for Organization at source system
	Practice Source ID	Varchar	40	No	Primary Key for Practice at source system
	Patient Source Identifier	Varchar	40	No	Primary Key for Patient at source system
	UIDS Homeless Status	Varchar	255	Yes	Preferable

Information Domain	Attribute Name	Data Type	LEN	Nullable	Comments
	UIDS Migrant Worker Status	Varchar	255	Yes	Preferable
	UIDS Language Barrier	Varchar	255	Yes	Preferable
	Family Size	Char	2	No	Preferable
	Family Income	Char	12	Yes	Preferable
	Family information verification date	Varchar	10	Yes	Preferable, Format: YYYY-MM-DD
	Family Income Effective Date	Varchar	10	Yes	Preferable, Format: YYYY-MM-DD
	Family Income Expiry Date	Varchar	10	Yes	Preferable, Format: YYYY-MM-DD
	UIDS Primary Medical Coverage Payer Source Identifier	Varchar	40	Yes	Primary Key for Primary Payer of record at source system
	Create Timestamp	Varchar	25	No	

Information Domain	Attribute Name	Data Type	LEN	Nullable	Comments
	Modify Timestamp	Varchar	25	No	
	Row timestamp	Varchar	40	No	
<b>ENCOUNTER</b>					
	Source System ID	Varchar	10	No	Based on source system ("MFHC", "CLINICA", "MCPN", "DENVHEALTH", "PEAKVISTA", "IPNAVISTA", "VALLEYWIDE", "QHN", "CORHIO", etc)
	Organization Source ID	Varchar	40	No	Primary Key for Organization at source system
	Practice Source ID	Varchar	40	No	Primary Key for Practice at source system
	Encounter Source ID	Varchar	40	No	Primary Key for Clinical Encounter record at source system
	Patient Source ID	Varchar	40	No	Primary Key for Patient at source system
	Encounter Date	Varchar	10	No	Format: YYYY-MM-DD (Could be Appointment Date)
	Checkin Datetime	Varchar	25	No	Format: YYYY-MM-DD HH:MI:SS.nn
	Checkout Datetime	Varchar	25	No	Format: YYYY-MM-DD HH:MI:SS.nn
	Rendering Provider Source ID	Varchar	40	No	Primary Key for Provider renderring care at source system
	Primary Payer Source ID	Varchar	40	Yes	Primary Key for Location at source system

Information Domain	Attribute Name	Data Type	LEN	Nullable	Comments
	Type of Visit	Varchar	255	Yes	See "Visit Type" worksheet for valid values
	Reason for Visit	Varchar	255	Yes	Chief Complaint
	Status of Encounter	Varchar	255	Yes	
	Admission Date	Varchar	10	Yes	Format: YYYY-MM-DD
	Discharge Date	Varchar	10	Yes	Format: YYYY-MM-DD
	Encounter Billable Indicator	Char	1	No	Valid values: "Y" or "N"
	UIDS Qualified Encounter Indicator	Char	1	No	Valid values: "Y" or "N"
	PCG Qualified Encounter Indicator	Char	1	No	Valid values: "Y" or "N"
	Encounter Billing Date	Varchar	10	Yes	Format: YYYY-MM-DD
	Create Timestamp	Varchar	40	No	Format: YYYY-MM-DD HH:MI:SS.nn
	Modified Timestamp	Varchar	40	No	Format: YYYY-MM-DD HH:MI:SS.nn
	Row Timestamp	Varchar	40	No	Hexadecimal number

Information Domain	Attribute Name	Data Type	LEN	Nullable	Comments
	UB92 Encounter Indicator	Char	1	No	Valid values: "Y" or "N"
<b>CHARGES</b>					
	Source System Identifier	Varchar	10	No	Based on source system ("MFHC", "CLINICA", "MCPN", "DENVHEALTH", "PEAKVISTA", "IPNAVISTA", "VALLEYWIDE", "QHN", "CORHIO", etc)
	Charger Identifier	Varchar	40	No	
	Organization Source Identifier	Varchar	40	No	Primary Key for Organization at source system
	Practice Source Identifier	Varchar	40	No	Primary Key for Practice at source system
	Location Source Identifier	Varchar	40	No	Primary Key for Location record at source system
	Patient Source Identifier	Varchar	40	No	Primary Key for Patient at source system
	Rendering Staff Source Identifier	Varchar	40	No	Primary Key for Provider rendering care at source system
	Encounter Source Identifier	Varchar	40	No	Primary Key for Clinical Encounter record at "DENVHEALTH" source system
	Encounter Begin Date of Service	Varchar	10	No	Format: YYYY-MM-DD
	Encounter End Date of Service	Varchar	10	No	Format: YYYY-MM-DD

Information Domain	Attribute Name	Data Type	LEN	Nullable	Comments
	Encounter Place of Service	Varchar	255	No	See "Place Of Service" worksheet for valid values
	Encounter Charge Sequence Number	Varchar	2	No	Since an encounter could have multiple services, this is a number from 1 - 99
	Primary Diagnoses	Varchar	10	No	Valid ICD9-CM Code
	Secondary Diagnoses	Varchar	10	Yes	Valid ICD9-CM Code
	Tertiary Diagnoses	Varchar	10	Yes	Valid ICD9-CM Code
	Quarternary Diagnoses	Varchar	10	Yes	Valid ICD9-CM Code
	Service Code	Varchar	10	No	CPT 4 Code
	Billed Datetime	Varchar	25	Yes	Format: YYYY-MM-DD HH:MM:SS
	Service Unit Price	Varchar	12	No	
	Service Quantity	Char	2	No	
	Charge Amount	Varchar	12	No	
	Balance Due from Primary Payer	Varchar	12	No	
	Balance Due from Secondary Payer	Varchar	12	Yes	
	Balance Due from Tertiary Payer	Varchar	12	Yes	

Information Domain	Attribute Name	Data Type	LEN	Nullable	Comments
	Balance Due from Patient	Varchar	12	No	
	Charge Voided Indicator	Char	1	No	Valid values: "Y", "N"
	Create Timestamp	Varchar	40	No	Format: YYYY-MM-DD HH:MM:SS.nn
	Modified Timestamp	Varchar	40	No	Format: YYYY-MM-DD HH:MM:SS.nn
	Row Timestamp	Varchar	40	No	Hexadecimal number
<b>VITAL SIGNS</b>					
	Source System ID	Varchar	10	No	Based on source system ("MFHC", "CLINICA", "MCPN", "DENVHEALTH", "PEAKVISTA", "IPNAVISTA", "VALLEYWIDE", "QHN", "CORHIO", etc)
	Organization Source Identifier	Varchar	40	No	Primary Key for Organization at source system
	Practice Source Identifier	Varchar	40	No	Primary Key for Practice at source system
	Encounter Source Identifier	Varchar	40	No	Primary Key for Clinical Encounter record at source system
	Patient Source Identifier	Varchar	40	No	Primary Key for Patient at source system; Needs to be added (NextGen has reference to person_id)
	Vital Signs Date Time	Varchar	25	No	Format: YYYY-MM-DD HH:MM:SS
	Height in inches	Varchar	16	No	
	Weight in Pounds	Varchar	16	No	
	Temperature	Varchar	16	Yes	

Information Domain	Attribute Name	Data Type	LEN	Nullable	Comments
	Blood Pressure Systolic Value	Varchar	16	Yes	
	Blood Pressure Diastolic Value	Varchar	16	Yes	
	Body Mass Index	Varchar	16	Yes	
	Pulse Rate	Varchar	16	Yes	
	Respiration Rate	Varchar	16	Yes	
	Head Circumference in Inches	Varchar	16	Yes	
	SpO2 Value (Oxygen Saturation Value)	Varchar	10	Yes	
	Peak Flow Value	Varchar	10	Yes	
	Pain Score	Varchar	2	Yes	
	FiO2 (Fraction of Inspired Oxygen)	Varchar	10	Yes	
	Measurement Done by Provider Indicator	Char	1		Valid values: "Y", "N"
	Create Timestamp	Varchar	40	No	Format: YYYY-MM-DD HH:MM:SS
	Modified Timestamp	Varchar	40	No	Format: YYYY-MM-DD HH:MM:SS

Information Domain	Attribute Name	Data Type	LEN	Nullable	Comments
<b>LAB RESULTS</b>					
	Source System ID	Varchar	25	No	Based on source system ("MFHC", "CLINICA", "MCPN", "DENVHEALTH", "PEAKVISTA", "IPNAVISTA", "VALLEYWIDE", "QHN", "CORHIO", etc)
	Organization Source Identifier	Varchar	40	No	Primary Key for Organization at source system
	Practice Source Identifier	Varchar	40	No	Primary Key for Practice at source system
	Patient Source Identifier	Varchar	40	No	Primary Key for Patient at source system
	Encounter Source Identifier	Varchar	40	No	Primary Key for Clinical Encounter record at source system
	Laboratory Test LOINC Code	Varchar	10		See "LOINC Codes" worksheet for valid values; Maybe lookup in worksheet against description from NextGen??
	Laboratory Test Order Number	Varchar	40	No	Primary Key for Lab Test record at source system
	Laboratory Test Line Number	Varchar	10	No	
	Laboratory Test Ordered Date	Varchar	10	No	Format: YYYY-MM-DD
	Lab Test Identifier	Varchar	60	No	
	Laboratory Test Description	Varchar	100	No	

Information Domain	Attribute Name	Data Type	LEN	Nullable	Comments
	Lab Result Coding System	Varchar	20	No	
	Laboratory Test Result Received Date	Varchar	10	No	Format: YYYY-MM-DD
	Laboratory Test Result Measurement Value	Varchar	255	No	
	Laboratory Test Result Unit of Measure	Varchar	25	No	
	Laboratory Test Result Data Type	Varchar	25	No	
	Lab Test Reference Range	Varchar	60	No	
	Lab Result Abnormal Flag	Varchar	10	Yes	Valid Values: "H"(high), "L" (Low), "A" (Abnormal); If so what about "Normal"?
	Create Timestamp	Varchar	40	No	Format: YYYY-MM-DD HH:MI:SS.nn
	Modified Timestamp	Varchar	40	No	Format: YYYY-MM-DD HH:MI:SS.nn
	Row Timestamp	Varchar	40	No	Hexadecimal number

Information Domain	Attribute Name	Data Type	LEN	Nullable	Comments
<b>REFERRAL</b>					
	Source System ID	Varchar	10	No	Based on source system ("MFHC", "CLINICA", "MCPN", "DENVHEALTH", "PEAKVISTA", "IPNAVISTA", "VALLEYWIDE", "QHN", "CORHIO", etc)
	Organization Source Identifier	Varchar	40	No	Primary Key for Organization at source system
	Practice Source Identifier	Varchar	40	No	Primary Key for Practice at source system
	Patient Source Identifier	Varchar	40	No	Primary Key for Patient at source system
	Encounter Source Identifier	Varchar	40	No	Primary Key for Clinical Encounter record at source system
	Referral Source Identifier	Varchar	40	No	Primary Key for Referral record at "DENVHEALTH" source system
	Referral Diagnosis	Varchar	10	Yes	Valid ICD9-CM code
	Referral Reason	Varchar	60	Yes	

Information Domain	Attribute Name	Data Type	LEN	Nullable	Comments
	Referral Date	Varchar	10	No	Format: YYYY-MM-DD
	Referral Physician Name	Varchar	60	Yes	
	Referral Physician Specialty	Varchar	60	Yes	
	Referral Physician Practice Name	Varchar	60	Yes	
	Referral Physician Street Address Line 1	Varchar	60	Yes	
	Referral Physician Street Address Line 2				
	Referral Physician City	Varchar	60	Yes	
	Referral Physician State	Varchar	3	Yes	
	Referral Physician Zip Code	Varchar	9	Yes	
	Referral Authorization Source Identifier	Varchar	40	No	
	Referral Scheduled Date	Varchar	9	Yes	Format: YYYY-MM-DD

Information Domain	Attribute Name	Data Type	LEN	Nullable	Comments
	Referral Completed Date	Varchar	9	Yes	Format: YYYY-MM-DD
	Rendering Staff Source Identifier	Varchar	40	No	Primary Key for Provider rendering care at source system
	Referral Status	Varchar	60	Yes	Valid values: "N" (New), "S" (Submitted), "A" (Authorized), "C" (Completed)
	Create Timestamp	Varchar	25	No	Format: YYYY-MM-DD HH:MM:SS
	Modify Timestamp	Varchar	25	No	Format: YYYY-MM-DD HH:MM:SS
<b>SOCIAL HISTORY</b>					
	Source System ID	Varchar	10	No	Based on source system ("MFHC", "CLINICA", "MCPN", "DENVHEALTH", "PEAKVISTA", "IPNAVISTA", "VALLEYWIDE", "QHN", "CORHIO", etc)
	Organization Source Identifier	Varchar	40	No	Primary Key for Organization at source system
	Practice Source Identifier	Varchar	40	No	Primary Key for Practice at source system
	Patient Source Identifier	Varchar	40	No	Primary Key for Patient at source system
	Encounter Source Identifier	Varchar	40	No	Primary Key for Clinical Encounter record at source system
	Tobacco Use Status	Varchar	25	No	Valid Values: "Former", "Current", "Never"

Information Domain	Attribute Name	Data Type	LEN	Nullable	Comments
	Tried Quitting Tobacco	Char	1	No	If "Tobacco Use Status" = "Current" then valid values: "Y", "N"
	Passive Smoke Exposure Indicator	Char	1	No	Valid values: "Y", "N"
	Packs Per Day	Varchar	5	Yes	
	Pack Years	Varchar	5	Yes	
	Alcohol Consumption Status	Varchar	25	Yes	Valid Values: "Former", "Current", "Never"
	Activity Level	Varchar	25	Yes	
	Type of Exercise	Varchar	25	Yes	
	Execercise Frequency	Varchar	25	Yes	
	Create Timestamp	Varchar	25	No	Format: YYYY-MM-DD HH:MM:SS
	Modified Timestamp	Varchar	25	No	Format: YYYY-MM-DD HH:MM:SS
<b>PATIENT REGISTRY</b>					
	Source System ID	Varchar	10	No	
	Organization Source Identifier	Varchar	40	No	
	Practice Source Identifier	Varchar	40	No	

Information Domain	Attribute Name	Data Type	LEN	Nullable	Comments
	Patient Source Identifier	Varchar	40	No	
	Disease Name	Varchar	50	No	
	Is Active in Registry	Char	1	No	
	Disease Registry Active Date	Varchar	10	Yes	
	Disease Registry Inactive Date	Varchar	10	Yes	
	Create Timestamp	Varchar	25	No	
	Modified Timestamp	Varchar	25	No	
	Row Timestamp	Varchar	25	No	
<b>TOBACCO COUNSELING</b>					
	Source System ID	Varchar	10	No	
	Organization Source Identifier	Varchar	40	No	
	Practice Source Identifier	Varchar	40	No	
	Encounter Source Identifier	Varchar	40	No	

Information Domain	Attribute Name	Data Type	LEN	Nullable	Comments
	Patient Source Identifier	Varchar	40	No	
	Tobacco Use Asked Status	Varchar	25	No	"Current", "Former", "Never"
	Second hand smoke exposure Asked Status	Varchar	60	No	"Unknown/Undocumented", "Yes", "No"
	Advised to quit indicator	Char	1		If Tobacco Use Status = 'Current'; Values are "Yes", "No"
	Advised to quit-Date	Varchar	10		If "Advised to quit" ="Yes"
	Assessed for readiness to quit indicator	Varchar	25		If Tobacco Use Status = 'Current'; Values are "Yes", "No"
	Assessed for readiness to quit- Date	Varchar	10		If "Assessed for readiness to quit" ="Yes"
	Initial Quit Date Set indicator	Char	1		If "Assessed for readiness to quit" ="Yes"; Values are "Yes", "No"
	Referred to QuitLine indicator	Char	1		If "Assisted to quit" ="Yes"; Values are "Yes", "No"
	Referred to Behavioral Therapy indicator	Char	1		If "Assisted to quit" ="Yes"; Values are "Yes", "No"
	Nicotine Therapy indicator	Char	1		If "Assisted to quit" ="Yes"; Values are "Yes", "No"
	Additional Meds indicator	Char	1		If "Assisted to quit" ="Yes"; Values are "Yes", "No"

Information Domain	Attribute Name	Data Type	LEN	Nullable	Comments
	Arranged follow-up	Char	1		If "Assisted to quit" = "Yes"
	Quit Date	Varchar	10		If "Whether Patient Quit" = "Yes"
	Advised risks of 2nd-hand smoke	Char	1		If "Second hand smoke exposure" = Yes; Values are "yes", "no"
	Advised risks of 2nd-hand smoke-Date	Varchar	10		"If Advised risks of 2nd-hand smoke" = Yes
	Create Timestamp	Varchar	25	No	
	Modified Timestamp	Varchar	25	No	
	Row Timestamp	Varchar	25	No	

## Datawarehouse Staging Area Data Model

The CACHIE QIS Datawarehouse's Staging Area is the first physical database schema/instance in the QIS information infrastructure where data from various participating CHC source EMR and EPM systems is first loaded. This Staging database is supported by a data model that is enumerated in the following sections. The Datawarehouse Staging database, once loaded with source data extracted from MFHC and CLINICA NextGen instances, enables the remaining Extract-transform-Load (ETL) processing step of CACHIE QIS life cycle which prepares the datawarehouse for subsequent "trusted information consumption" of data quality audited, standardized and conformed data.

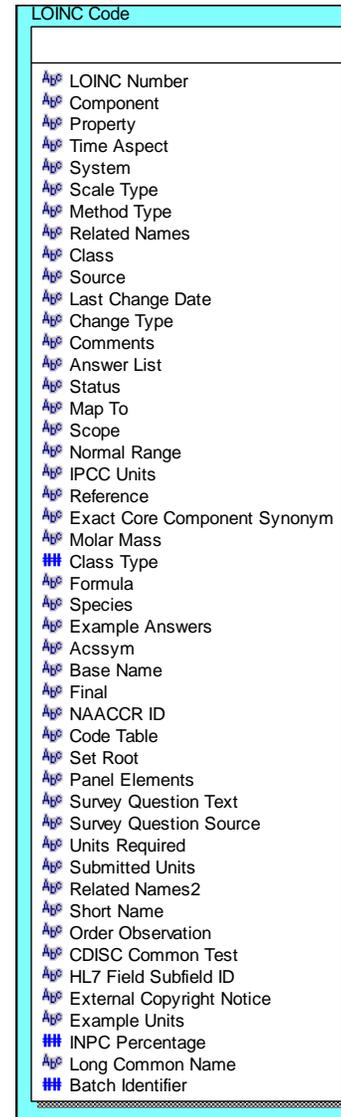
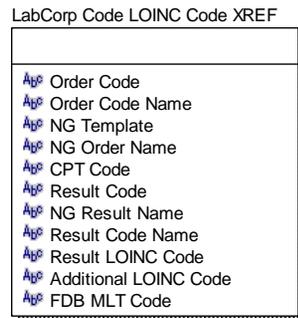
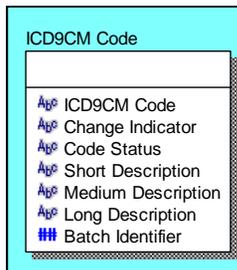
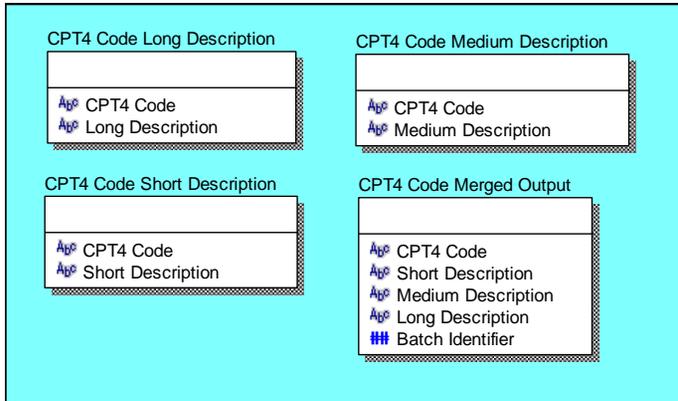
### Staging Subject Area Logical Data Model

The following Entity-Relationship diagrams provide a high-level or logical representation of the construct of Staging Area. The Logical Data Model is broken up into the following Subject Areas a.k.a Information Domains (not meant to be in any specific order):

1. Master Data
2. People & Organization
3. Patient Encounter
4. Lab Results
5. Clinical Observations
6. Provider Referrals
7. Vital Signs
8. Social History

Please note that since the Staging Area is simply to extract and store needed source system data there will be no relationship constraints placed between entities (in the logical model) or between tables (in the physical data model). Relationships amongst entities or tables will be programmed as business constraint checks and an audit of such constraint checks are logged within the ETL Audit and Logging Subject Area Logical Model described in the Enterprise Datawarehouse Data Model section at the end of this document.

## Master Data Staging Model



# People & Organization Staging Model

## Organization

- Agp Source System Code
- Agp Organization Source Code
- Agp Organization Name
- Agp Practice Source Code
- Agp Practice Name
- Agp Address Line1
- Agp Address Line2
- Agp City
- Agp State Code
- Agp ZIP Code
- Agp Delete Indicator
- ## Batch Identifier
- ⊗ Create Timestamp
- ⊗ Modify Timestamp
- ## Row Identifier

## Facility Location

- Agp Source System Code
- Agp Location Source Identifier
- Agp Location Name
- Agp Address Line1
- Agp Address Line2
- Agp City
- Agp State Code
- Agp ZIP Code
- Agp Location Type Description
- Agp Delete Indicator
- ## Batch Identifier
- ⊗ Create Timestamp
- ⊗ Modify Timestamp
- ## Row Identifier

## Practice Location XREF

- Agp Source System Code
- Agp Practice Source Code
- Agp Location Source Identifier
- ## Batch Identifier
- ⊗ Create Timestamp
- ⊗ Modify Timestamp
- ## Row Identifier

## Patient

- Agp Source System Code
- Agp Organization Source Code
- Agp Practice Source Code
- Agp Patient Source Identifier
- Agp Alternate Source Code
- Agp Medical Record Number
- Agp Registered Location Identifier
- Agp Social Security Number
- Agp Prefix
- Agp First Name
- Agp Middle Name
- Agp Last Name
- Agp Suffix
- Agp Birth Date
- Agp Gender
- Agp Address Line1
- Agp Address Line2
- Agp City
- Agp State Code
- Agp ZIP Code
- Agp Mother First Name
- Agp Mother Last Name
- Agp Mother Middle Name
- Agp Home Phone Number
- Agp Day Phone Number
- Agp Emergency Contact Phone Number
- Agp Race Description
- Agp Ethnicity Description
- Agp Primary Language Description
- Agp Marital Status Description
- Agp Expired Indicator
- Agp Expired Date
- Agp Religion Description
- Agp Veteran Status Description
- Agp Patient Consent Indicator
- Agp Patient Status Description
- Agp Source PCP Identifier
- ## Batch Identifier
- ⊗ Create Timestamp
- ⊗ Modify Timestamp
- ## Row Identifier

## FQHC Patient Information

- Agp Source System Code
- Agp Organization Source Code
- Agp Practice Source Code
- Agp Patient Source Identifier
- Agp UDS Homeless Status Description
- Agp UDS Migrant Worker Status Description
- Agp UDS Language Barrier Description
- Agp UDS Primary Medical Coverage Payer Source Identifier
- ## Family Size
- ## Annual Family Income
- Agp Family Income Verified Date
- Agp Family Income Effective Date
- Agp Family Income Expiry Date
- ## Batch Identifier
- ⊗ Create Timestamp
- ⊗ Modify Timestamp
- ## Row Identifier

## Provider

- Agp Source System Code
- Agp Provider Source Identifier
- Agp Provider Indicator
- Agp First Name
- Agp Middle Name
- Agp Last Name
- Agp Provider Type Description
- Agp Primary Specialty Description
- Agp NPIN
- Agp Provider Care Team Name
- Agp Delete Indicator
- ## Batch Identifier
- ⊗ Create Timestamp
- ⊗ Modify Timestamp
- ## Row Identifier

## Practice Provider

- Agp Source System Code
- Agp Organization Source Code
- Agp Practice Source Code
- Agp Provider Source Identifier
- Agp Rendering Provider Indicator
- ## Batch Identifier
- ⊗ Create Timestamp
- ⊗ Modify Timestamp
- ## Row Identifier

## Payer

- Agp Source System Code
- Agp Payer Source Identifier
- Agp Payer Name
- Agp Payer Class Description
- Agp Address Line1
- Agp Address Line2
- Agp City
- Agp State Code
- Agp ZIP Code
- Agp Group Name
- Agp Insurance Type Description
- Agp Claim Type Description
- Agp Plan Type Description
- Agp Delete Indicator
- ## Batch Identifier
- ⊗ Create Timestamp
- ⊗ Modify Timestamp
- ## Row Identifier

## Patient Encounter Staging Model

### Patient Encounter

A<sub>10</sub> Source System Code  
 A<sub>10</sub> Organization Source Code  
 A<sub>10</sub> Practice Source Code  
 A<sub>10</sub> Location Source Identifier  
 A<sub>10</sub> Encounter Source Identifier  
 A<sub>10</sub> Patient Source Identifier  
 A<sub>10</sub> Encounter Date  
 A<sub>10</sub> Checkin Datetime  
 A<sub>10</sub> Checkout Datetime  
 A<sub>10</sub> Rendering Provider Source Identifier  
 A<sub>10</sub> Admitting Provider Source Identifier  
 A<sub>10</sub> Consulting Provider Source Identifier  
 A<sub>10</sub> Referring Provider Source Identifier  
 A<sub>10</sub> Primary Payer Source Identifier  
 A<sub>10</sub> Visit Type Description  
 A<sub>10</sub> Visit Reason  
 A<sub>10</sub> Encounter Status Description  
 A<sub>10</sub> Admission Date  
 A<sub>10</sub> Discharge Date  
 A<sub>10</sub> Billable Encounter Indicator  
 A<sub>10</sub> UDS Qualified Encounter Indicator  
 A<sub>10</sub> PCG Qualified Encounter Indicator  
 A<sub>10</sub> UB92 Encounter Indicator  
 A<sub>10</sub> Bad Debt Status Description  
 A<sub>10</sub> Encounter Billing Date  
 ### Batch Identifier  
 ⓧ Create Timestamp  
 ⓧ Modify Timestamp  
 ### Row Timestamp

### Encounter Charge

A<sub>10</sub> Source System Code  
 A<sub>10</sub> Organization Source Code  
 A<sub>10</sub> Practice Source Code  
 A<sub>10</sub> Location Source Identifier  
 A<sub>10</sub> Encounter Source Identifier  
 A<sub>10</sub> Patient Source Identifier  
 A<sub>10</sub> Source Charge Identifier  
 A<sub>10</sub> Rendering Provider Source Identifier  
 A<sub>10</sub> Begin Date of Service  
 A<sub>10</sub> End Date of Service  
 A<sub>10</sub> Place of Service Description  
 ### Charge Sequence Number  
 A<sub>10</sub> Primary Diagnosis Code  
 A<sub>10</sub> Secondary Diagnosis Code  
 A<sub>10</sub> Tertiary Diagnosis Code  
 A<sub>10</sub> Quarternary Diagnosis Code  
 A<sub>10</sub> Service Code  
 A<sub>10</sub> Billed Datetime  
 ### Service Unit Price  
 ### Service Quantity  
 ### Charge Amount  
 ### Primary Payer Balance Amount  
 ### Secondary Payer Balance Amount  
 ### Tertiary Payer Balance Amount  
 ### Patient Balance Amount  
 A<sub>10</sub> Charge Voided Indicator  
 ### Batch Identifier  
 ⓧ Create Timestamp  
 ⓧ Modify Timestamp  
 ### Row Timestamp

## Lab Results Staging Model

### Lab Results

- A<sub>1</sub>B<sub>1</sub>C<sub>1</sub> Source System Code
- A<sub>1</sub>B<sub>1</sub>C<sub>1</sub> Organization Source Code
- A<sub>1</sub>B<sub>1</sub>C<sub>1</sub> Practice Source Code
- A<sub>1</sub>B<sub>1</sub>C<sub>1</sub> Patient Source Identifier
- A<sub>1</sub>B<sub>1</sub>C<sub>1</sub> Encounter Source Identifier
- A<sub>1</sub>B<sub>1</sub>C<sub>1</sub> LOINC Code
- A<sub>1</sub>B<sub>1</sub>C<sub>1</sub> Test Order Number
- A<sub>1</sub>B<sub>1</sub>C<sub>1</sub> Test Order Line Number
- A<sub>1</sub>B<sub>1</sub>C<sub>1</sub> Order Date
- A<sub>1</sub>B<sub>1</sub>C<sub>1</sub> Lab Test Identifier
- A<sub>1</sub>B<sub>1</sub>C<sub>1</sub> Test Description
- A<sub>1</sub>B<sub>1</sub>C<sub>1</sub> Lab Test Coding System
- A<sub>1</sub>B<sub>1</sub>C<sub>1</sub> Result Received Date
- A<sub>1</sub>B<sub>1</sub>C<sub>1</sub> Result Value
- A<sub>1</sub>B<sub>1</sub>C<sub>1</sub> Unit of Measure
- A<sub>1</sub>B<sub>1</sub>C<sub>1</sub> Result Data Type
- A<sub>1</sub>B<sub>1</sub>C<sub>1</sub> Result Reference Range
- A<sub>1</sub>B<sub>1</sub>C<sub>1</sub> Test Result Abnormal Indicator
- ### Batch Identifier
- 🕒 Create Timestamp
- 🕒 Modify Timestamp
- ### Row Timestamp

## Clinical Observations Staging Model

### Clinical Observation

- A<sub>1</sub>C<sub>0</sub> Source System Code
- A<sub>1</sub>C<sub>0</sub> Organization Source Code
- A<sub>1</sub>C<sub>0</sub> Practice Source Code
- A<sub>1</sub>C<sub>0</sub> Patient Source Identifier
- A<sub>1</sub>C<sub>0</sub> Encounter Source Identifier
- A<sub>1</sub>C<sub>0</sub> Observation Description
- A<sub>1</sub>C<sub>0</sub> Observation Value
- A<sub>1</sub>C<sub>0</sub> Observation Status
- A<sub>1</sub>C<sub>0</sub> Observation Date
- ### Batch Identifier
- ⊗ Create Timestamp
- ⊗ Modify Timestamp
- ### Row Timestamp

### Tobacco Flowsheet

- A<sub>1</sub>C<sub>0</sub> Source System Code
- A<sub>1</sub>C<sub>0</sub> Organization Source Code
- A<sub>1</sub>C<sub>0</sub> Practice Source Code
- A<sub>1</sub>C<sub>0</sub> Patient Source Identifier
- A<sub>1</sub>C<sub>0</sub> Encounter Source Identifier
- A<sub>1</sub>C<sub>0</sub> Tobacco Use Ask Status
- A<sub>1</sub>C<sub>0</sub> Secondhand Smoke Status
- A<sub>1</sub>C<sub>0</sub> Quit Advise Indicator
- A<sub>1</sub>C<sub>0</sub> Quit Advise Date
- A<sub>1</sub>C<sub>0</sub> Quit Readiness Assessed Indicator
- A<sub>1</sub>C<sub>0</sub> Quit Readiness Assessed Date
- A<sub>1</sub>C<sub>0</sub> Quit Date Set Indicator
- A<sub>1</sub>C<sub>0</sub> Quitline Refer Indicator
- A<sub>1</sub>C<sub>0</sub> Behavioral Therapy Refer Indicator
- A<sub>1</sub>C<sub>0</sub> Nicotine Therapy Indicator
- A<sub>1</sub>C<sub>0</sub> Additional Medication Indicator
- A<sub>1</sub>C<sub>0</sub> Followup Set Indicator
- A<sub>1</sub>C<sub>0</sub> Quit Date
- ### Batch Identifier
- ⊗ Create Timestamp
- ⊗ Modify Timestamp
- ### Row Timestamp

### Patient Registry

- A<sub>1</sub>C<sub>0</sub> Source System Code
- A<sub>1</sub>C<sub>0</sub> Organization Source Code
- A<sub>1</sub>C<sub>0</sub> Practice Source Code
- A<sub>1</sub>C<sub>0</sub> Patient Source Identifier
- A<sub>1</sub>C<sub>0</sub> Disease Name
- A<sub>1</sub>C<sub>0</sub> Disease Active Indicator
- A<sub>1</sub>C<sub>0</sub> Disease Active Date
- A<sub>1</sub>C<sub>0</sub> Disease Inactive Date
- ### Batch Identifier
- ⊗ Create Timestamp
- ⊗ Modify Timestamp
- ### Row Timestamp

## Provider Referrals Staging Model

### Referrals

A <sub>1</sub> C <sub>1</sub> Source System Code
A <sub>1</sub> C <sub>1</sub> Organization Source Code
A <sub>1</sub> C <sub>1</sub> Practice Source Code
A <sub>1</sub> C <sub>1</sub> Patient Source Identifier
A <sub>1</sub> C <sub>1</sub> Encounter Source Identifier
A <sub>1</sub> C <sub>1</sub> Referral Source Identifier
A <sub>1</sub> C <sub>1</sub> Referral Diagnosis
A <sub>1</sub> C <sub>1</sub> Referral Reason
A <sub>1</sub> C <sub>1</sub> Referral Order Date
A <sub>1</sub> C <sub>1</sub> Referred Provider Name
A <sub>1</sub> C <sub>1</sub> Referred Provider Specialty
A <sub>1</sub> C <sub>1</sub> Referral Authorization Source Identifier
A <sub>1</sub> C <sub>1</sub> Referral Scheduled Date
A <sub>1</sub> C <sub>1</sub> Referral Completed Date
A <sub>1</sub> C <sub>1</sub> Referral Status Description
### Batch Identifier
Ⓚ Create Timestamp
Ⓚ Modify Timestamp
### Row Timestamp

## Vital Signs Staging Model

### Vital Signs

A <sub>1</sub> C	Source System Code
A <sub>1</sub> C	Organization Source Code
A <sub>1</sub> C	Practice Source Code
A <sub>1</sub> C	Encounter Source Identifier
A <sub>1</sub> C	Patient Source Identifier
A <sub>1</sub> C	VitalSigns Datetime
A <sub>1</sub> C	Height Inches
A <sub>1</sub> C	Weight Pounds
A <sub>1</sub> C	Temprature Value
A <sub>1</sub> C	Systolic Blood Pressure Value
A <sub>1</sub> C	Diastolic Blood Pressure Value
A <sub>1</sub> C	Body Mass Index Value
A <sub>1</sub> C	Pulse Rate Value
A <sub>1</sub> C	Respiration Rate
A <sub>1</sub> C	Head Circumference Inches
A <sub>1</sub> C	SpO2 Value
A <sub>1</sub> C	Peak Flow Value
A <sub>1</sub> C	Pain Score Value
A <sub>1</sub> C	FiO2 Value
A <sub>1</sub> C	Provider Measured Indicator
###	Batch Identifier
Ⓚ	Create Timestamp
Ⓚ	Modify Timestamp

## Social History Staging Model

### Social History

- A<sub>1</sub>C Source System Code
- A<sub>1</sub>C Organization Source Code
- A<sub>1</sub>C Practice Source Code
- A<sub>1</sub>C Patient Source Identifier
- A<sub>1</sub>C Encounter Source Identifier
- A<sub>1</sub>C Tobacco Use Status Description
- A<sub>1</sub>C Tried Quitting Indicator
- A<sub>1</sub>C Secondhand Smoke Exposure Indicator
- A<sub>1</sub>C Packs per day
- A<sub>1</sub>C Pack Years
- A<sub>1</sub>C Alcohol Consumption Status
- A<sub>1</sub>C Activity Level
- A<sub>1</sub>C Type of Exercise
- A<sub>1</sub>C Exercise Frequency
- ### Batch Identifier
- Ⓚ Create Timestamp
- Ⓚ Modify Timestamp

## Information Supply Requirements

The Information Supply Requirements listed in the sections that follow briefly layout the candidate source data locations from MFHC and CLINICA NextGen instances respectively.

It is important to note that though both CHCs use NextGen EMR/EPM, based on their own clinical business process flows, each instance has been used over varying period of time and have been customized over this time period to match their own clinical business process flows. Hence there are some differences in source data locations for some of the Information Domain Attributes.

This section of the document also provides the Source EMR-EPM system data locations mapped to the Data warehouse's Staging Area to enable development of requisite source data extraction programs to load source data into the datawarehouse staging database for subsequent ETL processing life cycle execution.

As previously mentioned, the Source Data Profiling activity enabled the development of the Source-to-Staging Area Mapping. The Source Data Quality Matrix developed as a deliverable of the Source Data Profiling activity also provides requisite source business rules, source data quality guidelines and enables design and development of the ETL strategy to transform and standardize various source EMR-EPM system data into a CACHIE canonical form – the QIS Enterprise Datawarehouse Data Model. For more information on the Source Data Quality Matrix please see a separate deliverable referred to in the “References” section found earlier in this document.

## MFHC Source-to-Staging Area Mapping

The following table lists various source data locations (Table and Column Names) from MFHC’s NextGen instance mapped to each of the Information Domain and its attributes.

Information Domain	Attribute Name	Source Table	Column Name
<b>ORGANIZATION</b>			
	Source System ID		MFHC
	Organization Source ID	Practice	Enterprise_ID
	Organization Name	Enterprise	Enterprise_Name
	Practice Source ID	Practice	practice_id
	Practice Name	Practice	Practice_Name
	Address Line 1	Practice	Address_Line_1
	Address Line 2	Practice	Address_Line_2
	City	Practice	City
	State	Practice	State
	ZIP Code	Practice	ZIP
	Delete Indicator	Practice	Delete_Ind
	Create Timestamp	Practice	Create_Timestamp
	Modify Timestamp	Practice	Modify_Timestamp

Information Domain	Attribute Name	Source Table	Column Name
	Row Timestamp	Practice	Row_Timestamp
<b>LOCATION / FACILITY</b>			
	Source System ID		MFHC
	Location Source Identifier	Location_Mstr	Location_ID
	Location Name	Location_Mstr	Location_Name
	Location Address Line 1	Location_Mstr	Address_Line_1
	Location Address Line 2	Location_Mstr	Address_Line_2
	Location City	Location_Mstr	City
	Location State	Location_Mstr	State
	Location Zip Code	Location_Mstr	ZIP
	Delete Indicator	Location_Mstr	Delete_Ind
	Create Timestamp	Location_Mstr	Create_Timestamp
	Modify Timestamp	Location_Mstr	Modify_Timestamp
	Row Timestamp	Location_Mstr	Row_Timestamp
<b>PRACTICE LOCATION</b>			

Information Domain	Attribute Name	Source Table	Column Name
	Source System ID		MFHC
	Practice Source ID	Practice_Location_XREF	Practice_ID
	Location Source ID	Practice_Location_XREF	Location_ID
	Create Timestamp	Practice_Location_XREF	Create_Timestamp
	Modify Timestamp	Practice_Location_XREF	Modify_Timestamp
	Row Timestamp	Practice_Location_XREF	Row_Timestamp
<b>PROVIDER/STAFF</b>			
	Source System ID		MFHC
	Staff Source Identifier	Provider_Mstr PM	PM.Provider_ID
	Staff First Name	Provider_Mstr PM	PM.First_Name
	Staff Middle Initial	Provider_Mstr PM	PM.Middle_Name
	Staff Last Name	Provider_Mstr PM	PM.Last_Name
	Provider Indicator	Provider_Mstr PM	Default to Y
	Staff Type Description	Provider_Practice_Mstr, Mstr_Lists	Mstr_List.Mstr_List_item_Desc where mstr_list_item_type = 'provider_type'
	Primary Speciality	Specialty_mstr SM	SM.Description where PM.Specialty_Code_1 = sm.specialty_code

Information Domain	Attribute Name	Source Table	Column Name
	National Provider Identifier	Provider_Mstr PM	National_Provider_ID
	Provider Care Team	Provider_Mstr PM	ML.Mstr_List_Item_Desc where mstr_list_item_id = PM.provider_Subgrouping1_Id and mstr_list_item_type = 'provider subgrouping'
	Delete Indicator	Provider_Mstr	Delete_Ind
	Create Timestamp	Provider_Mstr PM	PM.Create_Timestamp
	Modify Timestamp	Provider_Mstr, Mstr_Lists, Provider_Practice_Mstr	Greatest of Modify_Timestamp
	Row Timestamp	Provider_Mstr, Mstr_Lists, Provider_Practice_Mstr	Greatest of Row_Timestamp
<b>PRACTICE PROVIDER</b>			
	Source System ID		MFHC
	Organization Source Identifier	Provider_Practice_Mstr	Enterprise_ID
	Practice Source Identifier	Provider_Practice_Mstr	Practice_ID
	Staff Source Identifier	Provider_Practice_Mstr	Provider_ID, User_Id
	Rendering Provider Indicator	Provider_Practice_Mstr	Attending_Ind

Information Domain	Attribute Name	Source Table	Column Name
	Create Timestamp	Provider_Practice_Mstr	Create_Timestamp
	Modify Timestamp	Provider_Practice_Mstr	Modify_Timestamp
	Row Timestamp	Provider_Practice_Mstr	Row_Timestamp
<b>PAYER</b>			
	Source System ID		MFHC
	Payer Source Identifier	Payer_Mstr	Payer_ID
	Payer Name	Payer_Mstr	Payer_Name
	Payer Class	Payer_Mstr PM, Mstr_Lists ML	ML.mstr_list_item_desc where ML.mstr_List_Item_Id = PM.Financial_Class and ML.mstr_list_item_type = 'fin_class'
	Payer Street Address Line 1	Payer_Mstr	Address_Line_1
	Payer Street Address Line 2	Payer_Mstr	Address_Line_2
	Payer City	Payer_Mstr	City
	Payer State	Payer_Mstr	State
	Payer Zip Code	Payer_Mstr	ZIP
	Group Name	Payer_Mstr	Group Name

Information Domain	Attribute Name	Source Table	Column Name
	Insurance Type	Payer_Mstr, Code_Tables	Translate using code_tables where code_type = 'ins_type' and code = ins_type. Use as is.
	Claim Type	Payer_Mstr, Code_Tables	description derived from code_tables where code_type = 'claim_type' and code = claim_type.
	Plan Type	Payer_Mstr, Code_Tables	Translate using code_tables where code_type = 'plan_type' and code = plan_type. Use as is.
	Delete Indicator	Payer_Mstr	Delete_Ind
	Create Timestamp	Payer_Mstr	Create_Timestamp
	Modified Timestamp	Payer_Mstr	Modify_Timestamp
	Row Timestamp	Payer_Mstr	Row_Timestamp
<b>PATIENT</b>			
	Source System ID		MFHC
	Organization Source ID	Patient	Enterprise_ID
	Practice Source ID	Patient	Practice_Id
	Patient Source Identifier	Patient	Person_ID
	Alternate Source Identifier	Person	Person_Nbr

Information Domain	Attribute Name	Source Table	Column Name
	Registered Location Source Identifier		The location of the last encounter
	Medical Record Number	Patient	Med_Rec_Nbr
	Prefix	Person	Prefix
	First Name	Person	first_name
	Middle Initial	Person	middle_name
	Last Name	Person	Last_Name
	Suffix	Person	Suffix
	Gender	Person	Sex
	Date of Birth	Person	Date_Of_Birth
	Patient Address Line 1	Person	Address_Line_1
	Patient Address Line 2	Person	Address_Line_2
	City	Person	City
	State	Person	State

Information Domain	Attribute Name	Source Table	Column Name
	Zip Code	Person	ZIP
	Home Phone number	Person	Home_Phone
	Day Phone Number	Person	Day_Phone
	Alternate Phone Number	Person	Alt_Phone
	Race	Person, Mstr_Lists	To translate to race description, use mstr_lists with mstr_list_type = 'race'. Translate spaces or null to 'UNKNOWN'
	Ethnicity		Need to derive this information based on race
	Primary Language	Person, Mstr_Lists	Translate description using mstr_lists with mstr_list_type = 'language'.
	Marital Status	Person	Marital_Status
	Expired Indicator	Person	Expired_Ind
	Expired Date	Person	Expired_Date
	Religion	Person	Translate description using mstr_lists with mstr_list_type = 'Religion'.
	Veteran Status	Person	Veteran_Ind

Information Domain	Attribute Name	Source Table	Column Name
	Patient Consent	Patient	The code ID refers to mstr_list_item_id where mstr_list_item_type = 'privacy_notice'. Bring in the description.
	Patient Status	Patient_Status_Mstr, Patient_Status, Patient	Description
	Primary Care Physician Staff Source Identifier	Person	Primarycare_Prov_Id
	Mothers First Name	Person_Relationship, Person	left outer join (select top 1 prel.related_person_id, psn1.last_name, psn1.first_name from person_relationship prel, person psn1 where prel.relation_code = '19' and psn1.person_id = prel.person_id and prel.delete_ind = 'N' and psn1.sex = 'F') mom on (mom.related_person_id = psn.person_id)
	Mothers Last Name	Person_Relationship, Person	See above
	Mothers Middle Initial	Person_Relationship, Person	See above
	Emergency Contact Phone		UNKNOWN'

Information Domain	Attribute Name	Source Table	Column Name
	Number		
	Social Security Number	Person	SSN
	Student Status	Person	Student_Status
	Create Timestamp	Patient, Person, person_relationship, mstr_lists	Lowest of Create_Timestamp in the list of tables
	Modified Timestamp	Patient, Person, person_relationship, mstr_lists	Greatest of Modify_Timestamp
	Row Timestamp	Patient, Person, person_relationship, mstr_lists	Greatest of Row_Timestamp
<b>FQHC PATIENT</b>			
	Source System ID		MFHC
	Organization Source ID	Patient	Enterprise_ID
	Practice Source ID	Patient	Practice_Id
	Patient Source Identifier	Patient	Person_ID
	UDS Homeless Status	Person, Mstr_Lists	Get mstr_list_item_desc form mstr_lists where mstr_list_type = 'uds_homeless_status'
	UDS Migrant Worker Status	Person, Mstr_Lists	Get mstr_list_item_desc form mstr_lists where mstr_list_type = 'uds_migrant_worker_status'

Information Domain	Attribute Name	Source Table	Column Name
	UIDS Language Barrier	Person, Mstr_Lists	Get mstr_list_item_desc form mstr_lists where mstr_list_type = 'uds_language_barrier'
	Family Size	Acct_Family_Info, Accounts, Patient, Person	Family_Size_Nbr
	Family Income	Acct_Family_Info, Accounts, Patient, Person	Family_Annual_Income
	Family information verification date	Acct_Family_Info, Accounts, Patient, Person	Verify_Dt
	Family Income Effective Date	Acct_Family_Info, Accounts, Patient, Person	Eff_Date
	Family Income Expiry Date	Acct_Family_Info, Accounts, Patient, Person	Exp_Date
	UIDS Primary Medical Coverage Payer Source Identifier	Patient	UIDS_PRIMARY_MED_COVERAGE_ID
	Create Timestamp	Patient, acct_family_info, mstr_lists, accounts, person	Get Lowest
	Modify Timestamp	Patient, acct_family_info, mstr_lists, accounts, person	Get Maximum
	Row timestamp	Patient, acct_family_info, mstr_lists, accounts, person	Get Maximum

Information Domain	Attribute Name	Source Table	Column Name
ENCOUNTER			
	Source System ID		MFHC
	Organization Source ID	Patient_Encounter	Enterprise_ID
	Practice Source ID	Patient_Encounter	Practice_ID
	Encounter Source ID	Patient_Encounter	Enc_Id
	Patient Source ID	Patient_Encounter	Person_ID
	Encounter Date	Patient_Encounter	Enc_Timestamp. Keep only the date part
	Checkin Datetime	Patient_Encounter	CHECKIN_DATETIME
	Checkout Datetime	Patient_Encounter	CHECKOUT_DATETIME
	Rendering Provider Source ID	Patient_Encounter	RENDERING_PROVIDER_ID
	Primary Payer Source ID	Patient_Encounter	COB1_PAYER_ID
	Type of Visit	Patient_Encounter, Mstr_Lists	Patient_Type_ID joined with mstr_lists where mstr_list_item_type = 'pat_type'. Choose mstr_list_item_desc
	Reason for Visit	Patient_Encounter, Code_tables	Accident_Code joined with code_Tables where CODE_TYPE = 'occur' and get description

Information Domain	Attribute Name	Source Table	Column Name
	Status of Encounter	Patient_Encounter, Code_tables	Enc_Status joined with Code_Tables where CODE_TYPE = 'sys_vstat'
	Admission Date	Patient_Encounter	Admit_Date
	Discharge Date	Patient_Encounter	Discharge_Date
	Encounter Billable Indicator	Patient_Encounter	Billable_Ind
	UDS Qualified Encounter Indicator		Derived. Please see PatientEncounterFactInsert.sql
	PCG Qualified Encounter Indicator		Derived. Please see PatientEncounterFactInsert.sql
	Encounter Billing Date	Patient_Encounter	Billable_Timestamp
	Create Timestamp	Patient_Encounter	Create_Timestamp
	Modified Timestamp	Patient_Encounter	Modify_Timestamp
	Row Timestamp	Patient_Encounter	Row_Timestamp
	UB92 Encounter Indicator	Patient_Encounter	UB92_Enc_Ind
<b>CHARGES</b>			
	Source System Identifier		MFHC
	Charger Identifier	Charges	Charge_id

Information Domain	Attribute Name	Source Table	Column Name
	Organization Source Identifier	Charges	Enterprise_ID
	Practice Source Identifier	Charges	Practice_ID
	Location Source Identifier	Charges	Location_Id
	Patient Source Identifier	Charges	Person_ID
	Rendering Staff Source Identifier	Charges	Rendering_ID
	Encounter Source Identifier	Charges	Source_ID where Source_Type = 'V'
	Encounter Begin Date of Service	Charges	begin_date_of_service
	Encounter End Date of Service	Charges	End_Date_Of_Service
	Encounter Place of Service	Charges	Description from CODE_TABLES on code_type = 'place_serv' and code = Place_of_Service
	Encounter Charge Sequence Number	Charges	Seq_Nbr
	Primary Diagnoses	Charges	ICD9CM_Code_ID
	Secondary Diagnoses	Charges	ICD9CM_Code_ID_2
	Tertiary Diagnoses	Charges	ICD9CM_Code_ID_3

Information Domain	Attribute Name	Source Table	Column Name
	Quarternary Diagnoses	Charges	ICD9CM_Code_ID_4
	Service Code	Charges	CPT4_Code_ID
	Billed Datetime	Charges	Date portion of Create_Timestamp
	Service Unit Price	Charges	Unit_Price
	Service Quantity	Charges	Quantity
	Charge Amount	Charges	Amt
	Balance Due from Primary Payer	Charges	COB1_Amt
	Balance Due from Secondary Payer	Charges	COB2_Amt
	Balance Due from Tertiary Payer	Charges	COB3_Amt
	Balance Due from Patient	Charges	Pat_Amt
	Charge Voided Indicator	Charges	If Link_ID is Null Then N else Y
	Create Timestamp	Charges	Create_Timestamp
	Modified Timestamp	Charges	Modify_Timestamp
	Row Timestamp	Charges	Row_Timestamp
<b>VITAL SIGNS</b>			

Information Domain	Attribute Name	Source Table	Column Name
	Source System ID		MFHC
	Organization Source Identifier	Vital_Signs_	Enterprise_ID
	Practice Source Identifier	Vital_Signs_	Practice_ID
	Encounter Source Identifier	Vital_Signs_	Enc_ID
	Patient Source Identifier	Vital_Signs_	Person_Id
	Vital Signs Date Time	Vital_Signs_	Create_Timestamp
	Height in inches	Vital_Signs_	height_ft*12+height_in
	Weight in Pounds	Vital_Signs_	wt_lb_graph
	Temperature	Vital_Signs_	temp_deg_F
	Blood Pressure Systolic Value	Vital_Signs_	bp_systolic
	Blood Pressure Diastolic Value	Vital_Signs_	bp_diastolic
	Body Mass Index	Vital_Signs_	bmi_Calc
	Pulse Rate	Vital_Signs_	pulse_rate
	Respiration Rate	Vital_Signs_	respiration_rate
	Head Circumference in Inches	Vital_Signs_	head_circ_in

Information Domain	Attribute Name	Source Table	Column Name
	SpO2 Value (Oxygen Saturation Value)	Vital_Signs_	sp_O2_Dtl
	Peak Flow Value	Vital_Signs_	peakFlow
	Pain Score	Vital_Signs_	pain
	FiO2 (Fraction of Inspired Oxygen)	Vital_Signs_	FiO2
	Measurement Done by Provider Indicator	Vital_Signs_	Y
	Create Timestamp	Vital_Signs_	Create_Timestamp
	Modified Timestamp	Vital_Signs_	Modify_Timestamp Use this for CDC. Convert to float for storing and comparison.
<b>LAB RESULTS</b>			
	Source System ID		MFHC
	Organization Source Identifier	SELECT top 50 OBX. ENTERPRISE_ID as organization_id, OBX. PRACTICE_ID as practice_id, OBX. PERSON_ID as patient_src_id, NOR. ENC_ID as src_enc_id, OBRP. UNIQUE_OBR_NUM as order_num, OBX. OBX_SEQ_NUM as order_line_num, NOR. time_entered as order_datetime,	Enterprise_ID

Information Domain	Attribute Name	Source Table	Column Name
		<pre> OBX.create_timestamp as result_recd_date, OBX.OBS_ID as test_id, OBX.RESULT_DESC as test_desc, OBX.OBS_DATE_TIME as observation_date, OBX.OBSERV_VALUE as result_value, OBX.UNITS as uom, OBX.VALUE_TYPE as data_type, OBX.REF_RANGE as ref_range, OBX.ABNORM_FLAGS, cast(NOR.row_timestamp as bigint) + cast(OBRP.row_timestamp as bigint) + CAST(obx.row_timestamp as bigint) as row_timestamp FROM LAB_NOR NOR, LAB_RESULTS_OBR_P OBRP, LAB_RESULTS_OBX OBX WHERE (NOR.DELETE_IND &lt;&gt; 'Y' OR NOR.DELETE_IND IS NULL) AND OBRP.NGN_ORDER_NUM = NOR.ORDER_NUM AND OBRP.PERSON_ID = NOR.PERSON_ID AND (OBRP.DELETE_IND &lt;&gt; 'Y' OR OBRP.DELETE_IND IS NULL) AND OBX.UNIQUE_OBR_NUM = OBRP.UNIQUE_OBR_NUM AND OBX.ENTERPRISE_ID = OBRP.ENTERPRISE_ID </pre>	

Information Domain	Attribute Name	Source Table	Column Name
		AND OBX.PRACTICE_ID = OBRP.PRACTICE_ID AND OBX.PERSON_ID = OBRP.PERSON_ID AND (OBX.DELETE_IND <> 'Y' OR OBX.DELETE_IND IS NULL) AND OBX.signed_off_ind = 'Y'	
	Practice Source Identifier	See above SQL	Practice_ID
	Patient Source Identifier	See above SQL	Person_ID
	Encounter Source Identifier	See above SQL	Enc_ID
	Laboratory Test LOINC Code		UNKNOWN'
	Laboratory Test Order Number	See above SQL	Unique_OBR_Num
	Laboratory Test Line Number	See above SQL	OBX_Seq_Num
	Laboratory Test Ordered Date	Lab_Nor	Lab_Nor.Time_Entered
	Lab Test Identifier	See above SQL	The first part of Obs_id
	Laboratory Test Description	See above SQL	Result_desc

Information Domain	Attribute Name	Source Table	Column Name
	Lab Result Coding System	See above SQL	The last part of OBS_ID. If null, put the source system code. For instance if the OBS_ID = XYZ^Blah Blah^LOINC, then coding system in LOINC. For obs_id XYZ^Blah Blah^, the coding system is MFHC
	Laboratory Test Result Received Date	See above SQL	obs_date_time
	Laboratory Test Result Measurement Value	See above SQL	OBSERV_VALUE
	Laboratory Test Result Unit of Measure	See above SQL	UNITS
	Laboratory Test Result Data Type	See above SQL	VALUE_TYPE
	Lab Test Reference Range	See above SQL	REF_RANGE
	Lab Result Abnormal Flag	See above SQL	ABNORM_FLAGS
	Create Timestamp		Create_Timestamp
	Modified Timestamp		Modify_Timestamp
	Row Timestamp		Row_Timestamp

Information Domain	Attribute Name	Source Table	Column Name
<b>REFERRAL</b>			
	Source System ID		MFHC
		Filters: actClass = 'REFR' deleted = 0 cancelled = 0 completed = 1 completedDate is a valid date	
	Organization Source Identifier	Order_	Enterprise_ID
	Practice Source Identifier	Order_	Practice_ID
	Patient Source Identifier	Order_	Person_ID
	Encounter Source Identifier	Order_	encounterID
	Referral Source Identifier	Order_	Seq_No
	Referral Diagnosis	Order_	actDiagnosisCode
	Referral Reason	Order_	actReasonCode
	Referral Date	Order_	orderedDate
	Referral Physician Name	Order_	referToPhysician
	Referral Physician Specialty	Order_	referToSpecialty
	Referral Physician Practice	Order_	tb_special_l_name + tb_Special_f_name

Information Domain	Attribute Name	Source Table	Column Name
	Name		
	Referral Physician Street Address Line 1	Order_	tb_special_add_1
	Referral Physician Street Address Line 2	Order_	tb_special_add_2
	Referral Physician City	Order_	tb_special_city
	Referral Physician State	Order_	tb_special_state
	Referral Physician Zip Code	Order_	tb_special_zip
	Referral Authorization Source Identifier	Order_	seq_no
	Referral Scheduled Date	Order_	scheduledDate
	Referral Completed Date	Order_	completedDate
	Rendering Staff Source Identifier	Order_	To be derived from patient encounter using the encounterId
	Referral Status	Order_	actStatus
	Create Timestamp	Order_	Create_Timestamp
	Modify Timestamp	Order_	Modify_Timestamp Use this for CDC. Convert to float for storing and comparison.

Information Domain	Attribute Name	Source Table	Column Name
<b>SOCIAL HISTORY</b>			
	Source System ID		MFHC
	Organization Source Identifier	Social_HX_	Enterprise_ID
	Practice Source Identifier	Social_HX_	Practice_ID
	Patient Source Identifier	Social_HX_	Person_ID
	Encounter Source Identifier	Social_HX_	Enc_ID
	Tobacco Use Status	Social_HX_	Tobacco_yes
	Tried Quitting Tobacco	Social_HX_	Tobacco_Quit
	Passive Smoke Exposure Indicator	Social_HX_	Passive_Smoke
	Packs Per Day	Social_HX_	Pack_Per_Day
	Pack Years	Social_HX_	PackYears
	Alcohol Consumption Status	Social_HX_	Alcohol_Yes
	Activity Level	Social_HX_	Activity_Level
	Type of Exercise	Social_HX_	Exercise_Type
	Execercise Frequency	Social_HX_	Exercise_Freq
	Create Timestamp	Social_HX_	Create_Timestamp

Information Domain	Attribute Name	Source Table	Column Name
	Modified Timestamp	Social_HX_	Modify_Timestamp Use this for CDC. Convert to float for storing and comparison.
<b>PATIENT REGISTRY</b>			
	Source System ID	The query will be like Select 'MFHC', enterprise_id, practice_id, person_id, 'DIABETES', diabetes_flag, dm_active_date, dm_nonactive_date, etc  UNION Select 'MFHC', enterprise_id, practice_id, person_id, 'TOBACCO', tobacco, tobacco_active_date, tobacco_nonactive_date etc.	MFHC
	Organization Source Identifier	Patient_Registry_MFHC_	Enterprise_ID
	Practice Source Identifier	Patient_Registry_MFHC_	Practice_ID
	Patient Source Identifier	Patient_Registry_MFHC_	Person_ID
	Disease Name	Patient_Registry_MFHC_	Disease Name = DIABETES, TOBACCO
	Is Active in Registry	Patient_Registry_MFHC_	For DIABETES, diabetes_flag, for TOBACCO, tobacco

Information Domain	Attribute Name	Source Table	Column Name
	Disease Registry Active Date	Patient_Registry_MFHC_	For DIABETES, dm_active_date, for TOBACCO, tobacco_active_date
	Disease Registry Inactive Date	Patient_Registry_MFHC_	For DIABETES, dm_nonactive_date, for TOBACCO, tobacco_nonactive_date
	Create Timestamp	Patient_Registry_MFHC_	create_timestamp
	Modified Timestamp	Patient_Registry_MFHC_	modify_timestamp
	Row Timestamp	Patient_Registry_MFHC_	Row_Timestamp
<b>TOBACCO COUNSELING</b>			
	Source System ID		MFHC
	Organization Source Identifier	Tobacco_FlwSheet_MFHC_	enterprise_id
	Practice Source Identifier	Tobacco_FlwSheet_MFHC_	practice_id
	Encounter Source Identifier	Tobacco_FlwSheet_MFHC_	enc_id
	Patient Source Identifier	Tobacco_FlwSheet_MFHC_	person_id
	Tobacco Use Asked Status	social_hx_	tobacco_yes
	Second hand smoke exposure Asked Status	Tobacco_FlwSheet_MFHC_	cb_secondhandsmoke

Information Domain	Attribute Name	Source Table	Column Name
	Advised to quit indicator	Tobacco_FlwSheet_MFHC_	cb_advised
	Advised to quit-Date	patient_encounter	date part of enc_timestamp
	Assessed for readiness to quit indicator	Tobacco_FlwSheet_MFHC_	tb_readinessquit
	Assessed for readiness to quit- Date	patient_encounter	date part of enc_timestamp
	Initial Quit Date Set indicator	Tobacco_FlwSheet_MFHC_	tb_colabquitdate
	Referred to QuitLine indicator	Tobacco_FlwSheet_MFHC_	cb_quitlinereferral
	Referred to Behavioral Therapy indicator	Tobacco_FlwSheet_MFHC_	cb_behavioral_therapy
	Nicotine Therapy indicator	Tobacco_FlwSheet_MFHC_	nicotine_therapy
	Additional Meds indicator	Tobacco_FlwSheet_MFHC_	additional_meds
	Arranged follow-up	Tobacco_FlwSheet_MFHC_	If any of the following fields are 'Yes' , then Y else N. one_week_fu, one_month_fu, rad_other_smoke_fu
	Quit Date	social_hx_	tobacco_date_stop
	Advised risks of 2nd-hand smoke	Tobacco_FlwSheet_MFHC_	cb_secondhandsmoke

Information Domain	Attribute Name	Source Table	Column Name
	Advised risks of 2nd-hand smoke-Date	patient_encounter	date part of enc_timestamp
	Create Timestamp	Tobacco_FlwSheet_MFHC_	create_timestamp
	Modified Timestamp	Tobacco_FlwSheet_MFHC_	modify_timestamp
	Row Timestamp	Tobacco_FlwSheet_MFHC_	row_timestamp

## CLINICA Source-to-Stage Mapping

The following table lists various source data locations (Table and Column Names) from CLINICA's NextGen instance mapped to each of the Information Domain attributes.

Information Domain	Attribute Name	Source Table	Column
<b>ORGANIZATION</b>			
	Source System ID		CLINICA
	Organization Source ID	Practice	Enterprise_ID
	Organization Name	Enterprise	Enterprise_Name
	Practice Source ID	Practice	practice_id
	Practice Name	Practice	Practice_Name
	Address Line 1	Practice	Address_Line_1
	Address Line 2	Practice	Address_Line_2
	City	Practice	City
	State	Practice	State
	ZIP Code	Practice	ZIP
	Delete Indicator	Practice	Delete_Ind
	Create Timestamp	Practice	Create_Timestamp
	Modify Timestamp	Practice	Modify_Timestamp
	Row Timestamp	Practice	Row_Timestamp

Information Domain	Attribute Name	Source Table	Column
<b>LOCATION / FACILITY</b>			
	Source System ID		CLINICA
	Location Source Identifier	Location_Mstr	Location_ID
	Location Name	Location_Mstr	Location_Name
	Location Address Line 1	Location_Mstr	Address_Line_1
	Location Address Line 2	Location_Mstr	Address_Line_2
	Location City	Location_Mstr	City
	Location State	Location_Mstr	State
	Location Zip Code	Location_Mstr	ZIP
	Delete Indicator	Location_Mstr	Delete_Ind
	Create Timestamp	Location_Mstr	Create_Timestamp
	Modify Timestamp	Location_Mstr	Modify_Timestamp
	Row Timestamp	Location_Mstr	Row_Timestamp
<b>PRACTICE LOCATION</b>			
	Source System ID		CLINICA

Information Domain	Attribute Name	Source Table	Column
	Practice Source ID	Practice_Location_XREF	Practice_ID
	Location Source ID	Practice_Location_XREF	Location_ID
	Create Timestamp	Practice_Location_XREF	Create_Timestamp
	Modify Timestamp	Practice_Location_XREF	Modify_Timestamp
	Row Timestamp	Practice_Location_XREF	Row_Timestamp
<b>PROVIDER/STAFF</b>			
	Source System ID		CLINICA
	Staff Source Identifier	Provider_Mstr PM	PM.Provider_ID
	Staff First Name	Provider_Mstr PM	PM.First_Name
	Staff Middle Initial	Provider_Mstr PM	PM.Middle_Name
	Staff Last Name	Provider_Mstr PM	PM.Last_Name
	Provider Indicator	Provider_Mstr PM	Default to Y
	Staff Type Description	Provider_Practice_Mstr, Mstr_Lists	Mstr_List.Mstr_List_item_Desc where mstr_list_item_type = 'provider_type'
	Primary Speciality	Specialty_mstr SM	SM.Description where PM.Specialty_Code_1 = sm.specialty_code
	National Provider Identifier	Provider_Mstr PM	National_Provider_ID

Information Domain	Attribute Name	Source Table	Column
	Provider Care Team	Provider_Mstr PM	ML.Mstr_List_Item_Desc where mstr_list_item_id = PM.provider_Subgrouping1_Id and mstr_list_item_type = 'provider subgrouping'
	Delete Indicator	Provider_Mstr	Delete_Ind
	Create Timestamp	Provider_Mstr PM	PM.Create_Timestamp
	Modify Timestamp	Provider_Mstr, Mstr_Lists, Provider_Practice_Mstr	Greatest of Modify_Timestamp
	Row Timestamp	Provider_Mstr, Mstr_Lists, Provider_Practice_Mstr	Greatest of Row_Timestamp
<b>PRACTICE PROVIDER</b>			
	Source System ID		CLINICA
	Organization Source Identifier	Provider_Practice_Mstr	Enterprise_ID
	Practice Source Identifier	Provider_Practice_Mstr	Practice_ID
	Staff Source Identifier	Provider_Practice_Mstr	Provider_ID, User_Id
	Rendering Provider Indicator	Provider_Practice_Mstr	Attending_Ind
	Create Timestamp	Provider_Practice_Mstr	Create_Timestamp

Information Domain	Attribute Name	Source Table	Column
	Modify Timestamp	Provider_Practice_Mstr	Modify_Timestamp
	Row Timestamp	Provider_Practice_Mstr	Row_Timestamp
<b>PAYER</b>			
	Source System ID		CLINICA
	Payer Source Identifier	Payer_Mstr	Payer_ID
	Payer Name	Payer_Mstr	Payer_Name
	Payer Class	Payer_Mstr PM, Mstr_Lists ML	ML.mstr_list_item_desc where ML.mstr_List_Item_Id = PM.Financial_Class and ML.mstr_list_item_type = 'fin_class'
	Payer Street Address Line 1	Payer_Mstr	Address_Line_1
	Payer Street Address Line 2	Payer_Mstr	Address_Line_2
	Payer City	Payer_Mstr	City
	Payer State	Payer_Mstr	State
	Payer Zip Code	Payer_Mstr	ZIP
	Group Name	Payer_Mstr	Group Name
	Insurance Type	Payer_Mstr, Code_Tables	Translate using code_tables where code_type = 'ins_type' and code = ins_type. Use as is.

Information Domain	Attribute Name	Source Table	Column
	Claim Type	Payer_Mstr, Code_Tables	description derived from code_tables where code_type = 'claim_type' and code = claim_type.
	Plan Type	Payer_Mstr, Code_Tables	Translate using code_tables where code_type = 'plan_type' and code = plan_type. Use as is.
	Delete Indicator	Payer_Mstr	Delete_Ind
	Create Timestamp	Payer_Mstr	Create_Timestamp
	Modified Timestamp	Payer_Mstr	Modify_Timestamp
	Row Timestamp	Payer_Mstr	Row_Timestamp
<b>PATIENT</b>			
	Source System ID		CLINICA
	Organization Source ID	Patient	Enterprise_ID
	Practice Source ID	Patient	Practice_Id
	Patient Source Identifier	Patient	Person_ID
	Alternate Source Identifier	Person	Person_Nbr

Information Domain	Attribute Name	Source Table	Column
	Registered Location Source Identifier	Person_UD, mst_lists	description derived from mstr_list with mstr_list_item_type = 'ud_demo4_id'. Assigned default location for the patient. Used for grouping patients by location irrespective of location where a care was rendered for a given encounter.
	Medical Record Number	Patient	Med_Rec_Nbr
	Prefix	Person	Prefix
	First Name	Person	first_name
	Middle Initial	Person	middle_name
	Last Name	Person	Last_Name
	Suffix	Person	Suffix
	Gender	Person	Sex
	Date of Birth	Person	Date_Of_Birth
	Patient Address Line 1	Person	Address_Line_1
	Patient Address Line 2	Person	Address_Line_2
	City	Person	City
	State	Person	State

Information Domain	Attribute Name	Source Table	Column
	Zip Code	Person	ZIP
	Home Phone number	Person	Home_Phone
	Day Phone Number	Person	Day_Phone
	Alternate Phone Number	Person	Alt_Phone
	Race	Person, Mstr_Lists	To translate to race description, use mstr_lists with mstr_list_type = 'race'. Translate spaces or null to 'UNKNOWN'
	Ethnicity		Need to derive this information based on race
	Primary Language	Person, Mstr_Lists	Translate description using mstr_lists with mstr_list_type = 'language'.
	Marital Status	Person	Marital_Status
	Expired Indicator	Person	Expired_Ind
	Expired Date	Person	Expired_Date
	Religion	Person	Translate description using mstr_lists with mstr_list_type = 'Religion'.
	Veteran Status	Person	Veteran_Ind

Information Domain	Attribute Name	Source Table	Column
	Patient Consent	Patient	The code ID refers to mstr_list_item_id where mstr_list_item_type = 'privacy_notice'. Bring in the description.
	Patient Status	Patient_Status_Mstr, Patient_Status, Patient	Description
	Primary Care Physician Staff Source Identifier	Person	Primarycare_Prov_Id
	Mothers First Name	Person_Relationship, Person	<pre> left outer join (select top 1   prel.related_person_id,   psn1.last_name, psn1.first_name   from person_relationship prel, person   psn1   where prel.relation_code = '19'   and psn1.person_id = prel.person_id   and prel.delete_ind = 'N'   and psn1.sex = 'F') mom   on (mom.related_person_id =   psn.person_id) </pre>
	Mothers Last Name	see above	see above
	Mothers Middle Initial	see above	see above
	Emergency Contact Phone		UNKNOWN'

Information Domain	Attribute Name	Source Table	Column
	Number		
	Social Security Number	Person	SSN
	Student Status	Person	Student_Status
	Create Timestamp	Patient, Person, person_relationship, mstr_lists, person_ud	Lowest of Create_Timestamp in the list of tables
	Modified Timestamp	Patient, Person, person_relationship, mstr_lists, person_ud	Greatest of Modify_Timestamp
	Row Timestamp	Patient, Person, person_relationship, mstr_lists, person_ud	Greatest of Row_Timestamp
<b>FQHC PATIENT</b>			
	Source System ID		CLINICA
	Organization Source ID	Patient	Enterprise_ID
	Practice Source ID	Patient	Practice_Id
	Patient Source Identifier	Patient	Person_ID
	UDS Homeless Status	Person_UD, Mstr_Lists	description derived from mstr_list with mstr_list_item_type = 'ud_demo1'
	UDS Migrant Worker Status	Person_UD, Mstr_Lists	description derived from mstr_list with mstr_list_item_type = 'ud_demo2'

Information Domain	Attribute Name	Source Table	Column
	UDS Language Barrier	Person_UD, Mstr_Lists	description derived from mstr_list with mstr_list_item_type = 'ud_demo3'
	Family Size	Acct_Family_Info, Accounts, Patient, Person	Family_Size_Nbr
	Family Income	Acct_Family_Info, Accounts, Patient, Person	Family_Annual_Income
	Family information verification date	Acct_Family_Info, Accounts, Patient, Person	Verify_Dt
	Family Income Effective Date	Acct_Family_Info, Accounts, Patient, Person	Eff_Date
	Family Income Expiry Date	Acct_Family_Info, Accounts, Patient, Person	Exp_Date
	UDS Primary Medical Coverage Payer Source Identifier	Patient	UDS_PRIMARY_MED_COVERAGE_ID
	Create Timestamp	Patient, acct_family_info, mstr_lists, accounts, person, person_ud	Get Lowest
	Modify Timestamp	Patient, acct_family_info, mstr_lists, accounts, person, person_ud	Get Maximum
	Row timestamp	Patient, acct_family_info, mstr_lists, accounts, person, person_ud	Get Maximum

Information Domain	Attribute Name	Source Table	Column
ENCOUNTER			
	Source System ID		CLINICA
	Organization Source ID	Patient_Encounter	Enterprise_ID
	Practice Source ID	Patient_Encounter	Practice_ID
	Encounter Source ID	Patient_Encounter	Enc_Id
	Patient Source ID	Patient_Encounter	Person_ID
	Encounter Date	Patient_Encounter	Enc_Timestamp. Keep only the date part
	Checkin Datetime	Patient_Encounter	CHECKIN_DATETIME
	Checkout Datetime	Patient_Encounter	CHECKOUT_DATETIME
	Rendering Provider Source ID	Patient_Encounter	RENDERING_PROVIDER_ID
	Primary Payer Source ID	Patient_Encounter	COB1_PAYER_ID
	Type of Visit	Patient_Encounter, Mstr_Lists	Patient_Type_ID joined with mstr_lists where mstr_list_item_type = 'pat_type'. Choose mstr_list_item_desc
	Reason for Visit	Patient_Encounter, Code_tables	Accident_Code joined with code_Tables where CODE_TYPE = 'occur' and get description

Information Domain	Attribute Name	Source Table	Column
	Status of Encounter	Patient_Encounter, Code_tables	Enc_Status joined with Code_Tables where CODE_TYPE = 'sys_vstat'
	Admission Date	Patient_Encounter	Admit_Date
	Discharge Date	Patient_Encounter	Discharge_Date
	Encounter Billable Indicator	Patient_Encounter	Billable_Ind
	UDS Qualified Encounter Indicator		Derived. Please see PatientEncounterFactInsert.sql
	PCG Qualified Encounter Indicator		Derived. Please see PatientEncounterFactInsert.sql
	Encounter Billing Date	Patient_Encounter	Billable_Timestamp
	Create Timestamp	Patient_Encounter	Create_Timestamp
	Modified Timestamp	Patient_Encounter	Modify_Timestamp
	Row Timestamp	Patient_Encounter	Row_Timestamp
	UB92 Encounter Indicator	Patient_Encounter	UB92_Enc_Ind
<b>CHARGES</b>			
	Source System Identifier		CLINICA
	Charger Identifier	Charges	Charge_ID

Information Domain	Attribute Name	Source Table	Column
	Organization Source Identifier	Charges	Enterprise_ID
	Practice Source Identifier	Charges	Practice_ID
	Location Source Identifier	Charges	Location_Id
	Patient Source Identifier	Charges	Person_ID
	Rendering Staff Source Identifier	Charges	Rendering_ID
	Encounter Source Identifier	Charges	Source_ID where Source_Type = 'V'
	Encounter Begin Date of Service	Charges	begin_date_of_service
	Encounter End Date of Service	Charges	End_Date_Of_Service
	Encounter Place of Service	Charges	Description from CODE_TABLES on code_type = 'place_serv' and code = Place_of_Service
	Encounter Charge Sequence Number	Charges	Seq_Nbr
	Primary Diagnoses	Charges	ICD9CM_Code_ID
	Secondary Diagnoses	Charges	ICD9CM_Code_ID_2
	Tertiary Diagnoses	Charges	ICD9CM_Code_ID_3

Information Domain	Attribute Name	Source Table	Column
	Quarternary Diagnoses	Charges	ICD9CM_Code_ID_4
	Service Code	Charges	CPT4_Code_ID
	Billed Datetime	Charges	Date portion of Create_Timestamp
	Service Unit Price	Charges	Unit_Price
	Service Quantity	Charges	Quantity
	Charge Amount	Charges	Amt
	Balance Due from Primary Payer	Charges	COB1_Amt
	Balance Due from Secondary Payer	Charges	COB2_Amt
	Balance Due from Tertiary Payer	Charges	COB3_Amt
	Balance Due from Patient	Charges	Pat_Amt
	Charge Voided Indicator	Charges	If Link_ID is Null Then N else Y
	Create Timestamp	Charges	Create_Timestamp
	Modified Timestamp	Charges	Modify_Timestamp
	Row Timestamp	Charges	Row_Timestamp
<b>VITAL SIGNS</b>			

Information Domain	Attribute Name	Source Table	Column
	Source System ID		CLINICA
	Organization Source Identifier	Vital_Signs_	Enterprise_ID
	Practice Source Identifier	Vital_Signs_	Practice_ID
	Encounter Source Identifier	Vital_Signs_	Enc_ID
	Patient Source Identifier	Vital_Signs_	Person_id
	Vital Signs Date Time	Vital_Signs_	Create_Timestamp
	Height in inches	Vital_Signs_	height_in
	Weight in Pounds	Vital_Signs_	wt_lb_graph
	Temperature	Vital_Signs_	temp_deg_F
	Blood Pressure Systolic Value	Vital_Signs_	bp_systolic
	Blood Pressure Diastolic Value	Vital_Signs_	bp_diastolic
	Body Mass Index	Vital_Signs_	bmi_Calc
	Pulse Rate	Vital_Signs_	pulse_rate
	Respiration Rate	Vital_Signs_	respiration_rate
	Head Circumference in Inches	Vital_Signs_	head_circ_in

Information Domain	Attribute Name	Source Table	Column
	SpO2 Value (Oxygen Saturation Value)	Vital_Signs_	sp_O2_Dtl
	Peak Flow Value	Vital_Signs_	peakFlow
	Pain Score	Vital_Signs_	pain
	FiO2 (Fraction of Inspired Oxygen)	Vital_Signs_	FiO2
	Measurement Done by Provider Indicator	Vital_Signs_	Y
	Create Timestamp	Vital_Signs_	Create_Timestamp
	Modified Timestamp	Vital_Signs_	Modify_Timestamp Use this for CDC. Convert to float for storing and comparison.
<b>LAB RESULTS</b>			
	Source System ID		CLINICA
	Organization Source Identifier	Same SQL as in MFHC	Enterprise_ID
	Practice Source Identifier	Same SQL as in MFHC	Practice_ID
	Patient Source Identifier	Same SQL as in MFHC	Person_ID
	Encounter Source Identifier	Same SQL as in MFHC	Enc_ID

Information Domain	Attribute Name	Source Table	Column
	Laboratory Test LOINC Code		UNKNOWN'
	Laboratory Test Order Number	Same SQL as in MFHC	Unique_OBR_Num
	Laboratory Test Line Number	Same SQL as in MFHC	OBX_Seq_Num
	Laboratory Test Ordered Date	Lab_Nor	Lab_Nor.Time_Entered
	Lab Test Identifier	Same SQL as in MFHC	Obs_id
	Laboratory Test Description	Same SQL as in MFHC	Result_Desc
	Lab Result Coding System		
	Laboratory Test Result Received Date	Same SQL as in MFHC	obs_date_time
	Laboratory Test Result Measurement Value	Same SQL as in MFHC	OBSERV_VALUE
	Laboratory Test Result Unit of Measure	Same SQL as in MFHC	UNITS
	Laboratory Test Result Data Type	Same SQL as in MFHC	VALUE_TYPE
	Lab Test Reference Range	Same SQL as in MFHC	REF_RANGE

Information Domain	Attribute Name	Source Table	Column
	Lab Result Abnormal Flag	Same SQL as in MFHC	ABNORM_FLAGS
	Create Timestamp		Create_Timestamp
	Modified Timestamp		Modify_Timestamp
	Row Timestamp		Row_Timestamp
<b>REFERRAL</b>			
	Source System ID		CLINICA
		Filters: actClass = 'REFR' deleted = 0 cancelled = 0 completed = 1 completedDate is a valid date	
	Organization Source Identifier	Order_	Enterprise_ID
	Practice Source Identifier	Order_	Practice_ID
	Patient Source Identifier	Order_	Person_ID
	Encounter Source Identifier	Order_	encounterID
	Referral Source Identifier	Order_	Seq_No
	Referral Diagnosis	Order_	actDiagnosisCode

Information Domain	Attribute Name	Source Table	Column
	Referral Reason	Order_	actReasonCode
	Referral Date	Order_	orderedDate
	Referral Physician Name	Order_	referToPhysician
	Referral Physician Specialty	Order_	referToSpecialty
	Referral Physician Practice Name		UNKNOWN
	Referral Physician Street Address Line 1		UNKNOWN
	Referral Physician Street Address Line 2		UNKNOWN
	Referral Physician City		UNKNOWN
	Referral Physician State		UNKNOWN
	Referral Physician Zip Code		UNKNOWN
	Referral Authorization Source Identifier	Order_	seq_no
	Referral Scheduled Date	Order_	orderedDate
	Referral Completed Date	Order_	completedDate
	Rendering Staff Source Identifier	Patient_Encounter	To be derived from patient encounter using the encounterId

Information Domain	Attribute Name	Source Table	Column
	Referral Status	Order_	actStatus
	Create Timestamp	Order_	Create_Timestamp
	Modify Timestamp	Order_	Modify_Timestamp Use this for CDC. Convert to float for storing and comparison.
<b>SOCIAL HISTORY</b>			
	Source System ID		CLINICA
	Organization Source Identifier	Social_HX_	Enterprise_ID
	Practice Source Identifier	Social_HX_	Practice_ID
	Patient Source Identifier	Social_HX_	Person_ID
	Encounter Source Identifier	Social_HX_	Enc_ID
	Tobacco Use Status	Social_HX_	Tobacco_yes
	Tried Quitting Tobacco	Social_HX_	Tobacco_Quit
	Passive Smoke Exposure Indicator	Social_HX_	Passive_Smoke
	Packs Per Day	Social_HX_	Pack_Per_Day
	Pack Years	Social_HX_	PackYears

Information Domain	Attribute Name	Source Table	Column
	Alcohol Consumption Status	Social_HX_	Alcohol_Yes
	Activity Level	Social_HX_	Activity_Level
	Type of Exercise	Social_HX_	Exercise_Type
	Execercise Frequency	Social_HX_	Exercise_Freq
	Create Timestamp	Social_HX_	Create_Timestamp
	Modified Timestamp	Social_HX_	Modify_Timestamp Use this for CDC. Convert to float for storing and comparison.
<b>PATIENT REGISTRY</b>			
	Source System ID		CLINICA
	Organization Source Identifier	Patient_Registry_IPN_	Enterprise_ID
	Practice Source Identifier	Patient_Registry_IPN_	Practice_ID
	Patient Source Identifier	Patient_Registry_IPN_	Person_ID
	Disease Name	Patient_Registry_IPN_	Disease Name = DIABETES, TOBACCO
	Is Active in Registry	Patient_Registry_IPN_	For DIABETES, diabetes_flag, for TOBACCO, tobacco

Information Domain	Attribute Name	Source Table	Column
	Disease Registry Active Date	Patient_Registry_IPN_	For DIABETES, dm_active_date, for TOBACCO, tobacco_active_date
	Disease Registry Inactive Date	Patient_Registry_IPN_	For DIABETES, dm_nonactive_date, for TOBACCO, tobacco_nonactive_date
	Create Timestamp	Patient_Registry_IPN_	create_timestamp
	Modified Timestamp	Patient_Registry_IPN_	modify_timestamp
	Row Timestamp	Patient_Registry_IPN_	Row_Timestamp
<b>TOBACCO COUNSELING</b>			
	Source System ID		CLINICA
	Organization Source Identifier	tobacco_flwsheet_IPN_	enterprise_id
	Practice Source Identifier	tobacco_flwsheet_IPN_	practice_id
	Encounter Source Identifier	tobacco_flwsheet_IPN_	enc_id
	Patient Source Identifier	tobacco_flwsheet_IPN_	person_id
	Tobacco Use Asked Status	tobacco_flwsheet_IPN_	tobacco_yes
	Second hand smoke exposure Asked Status	tobacco_flwsheet_IPN_	tb_effectssecondhand

Information Domain	Attribute Name	Source Table	Column
	Advised to quit indicator	tobacco_flwsheet_IPN_	tb_advisedtoquit
	Advised to quit-Date	patient_encounter	date part of enc_timestamp
	Assessed for readiness to quit indicator	tobacco_flwsheet_IPN_	tb_readinessquit
	Assessed for readiness to quit- Date	patient_encounter	date part of enc_timestamp
	Initial Quit Date Set indicator	tobacco_flwsheet_IPN_	tb_colabquitdate
	Referred to QuitLine indicator	tobacco_flwsheet_IPN_	tb_quitline
	Referred to Behavioral Therapy indicator	tobacco_flwsheet_IPN_	tb_behavioral_chagne
	Nicotine Therapy indicator	tobacco_flwsheet_IPN_	nicotine_therapy
	Additional Meds indicator	tobacco_flwsheet_IPN_	additional_meds
	Arranged follow-up	tobacco_flwsheet_IPN_	If any of the following fields are 'Yes' , then Y else N. one_week_fu, one_month_fu, rad_other_smoke_fu
	Quit Date	social_hx_	tobacco_date_stop
	Advised risks of 2nd-hand smoke		

Information Domain	Attribute Name	Source Table	Column
	Advised risks of 2nd-hand smoke-Date		
	Create Timestamp	tobacco_flwsheet_IPN_, Social_hx_	create_timestamp
	Modified Timestamp	tobacco_flwsheet_IPN_	modify_timestamp
	Row Timestamp	tobacco_flwsheet_IPN_	row_timestamp

## Enterprise Datawarehouse Logical Data Model

The CACHIE QIS Enterprise Datawarehouse (EDW) Logical Data Model listed in the sections that follow briefly layout standardized, normalized, and quality audited CACHIE canonical representation of all required data elements that lend themselves to analytical inquiry and processing to deliver targeted business intelligence on AHRQ scope constrained information requirements. The ETL processes (yet to be designed at this time) provide the “heavy-lifting” to extract, validate, cleanse, integrate, transform and create a historical perspective of all CHC data across various EMR-EPM vendor systems in the form of this EDW Logical Data Model.

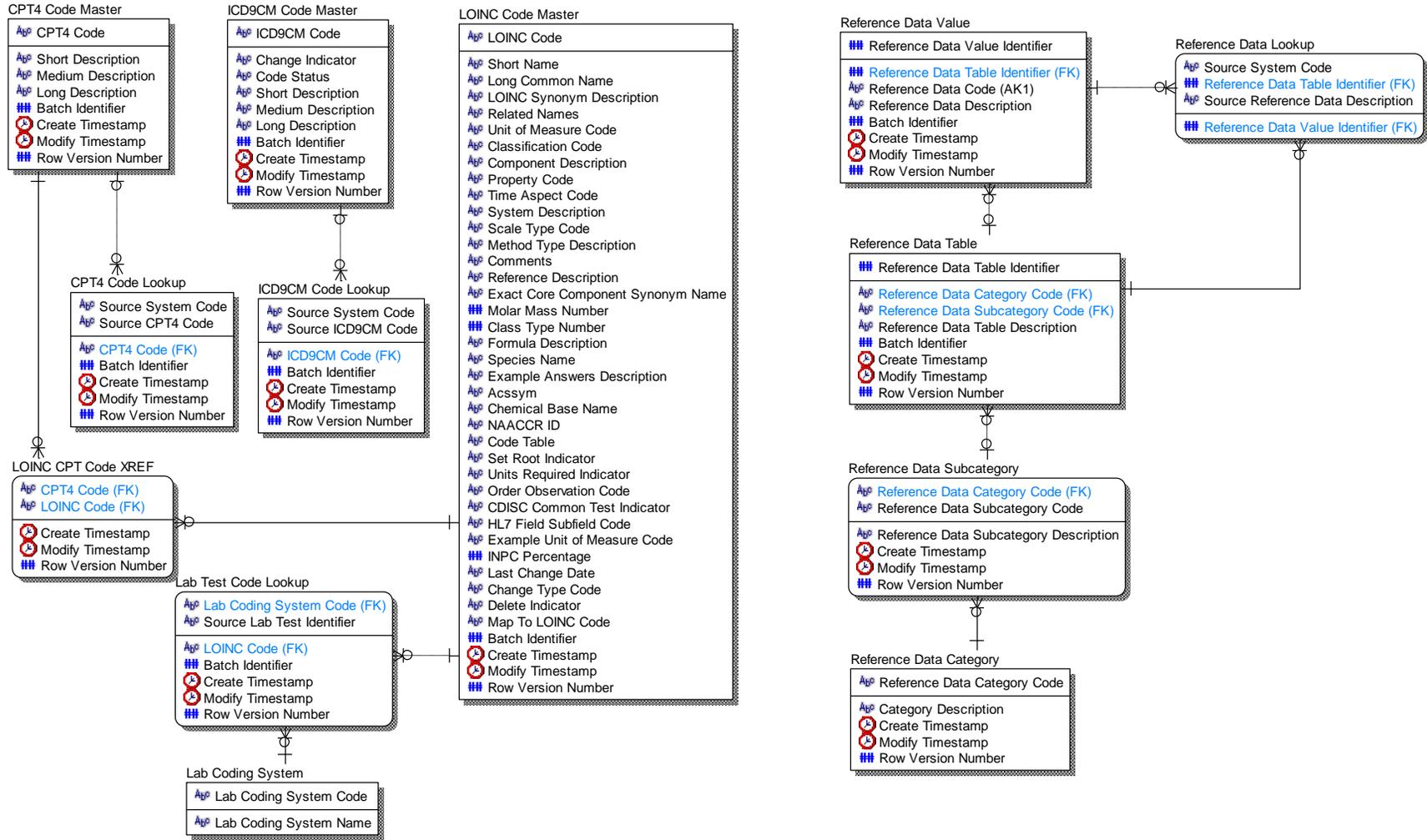
This section of the document – similar to the Staging Area Data Model – is depicted pictorially by Subject Area. You will notice that relationships amongst various entities are shown since the EDW will implement business rules across entities or tables. The EDW Physical Data Model is a very detailed and verbose. With the objective of keeping this document to a manageable size, the EDW Physical Data Model is made available as a separate document. Please see “References” section earlier in this document for more information.

### Subject Area Logical Data Model

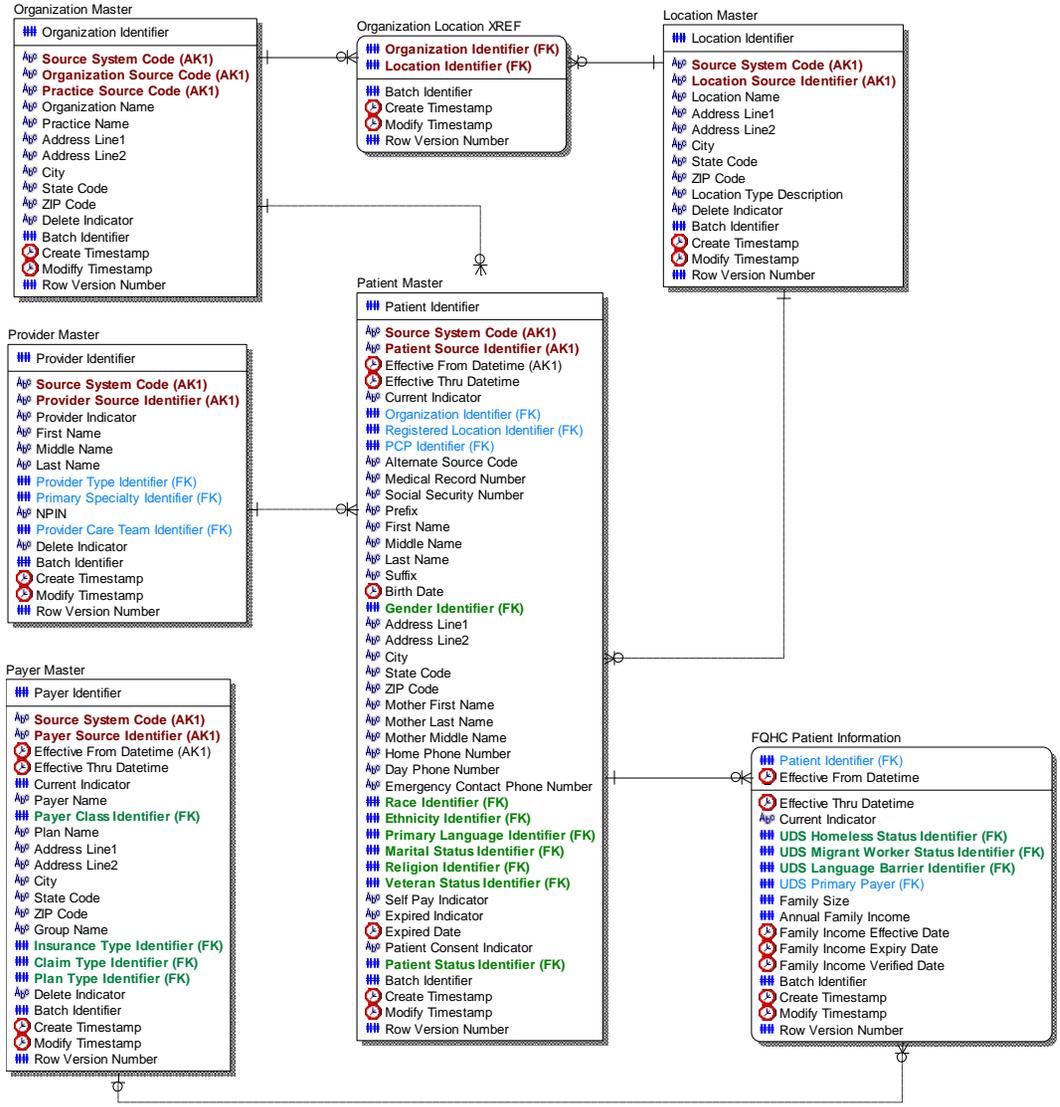
The EDW comprises of the following Subject Areas (not meant to be in any specific order):

9. Master Data
10. People & Organization
11. Patient Encounter
12. Lab Results
13. Clinical Observations
14. Vital Signs
15. Social History
16. Provider Referrals
17. ETL Audit & Logging

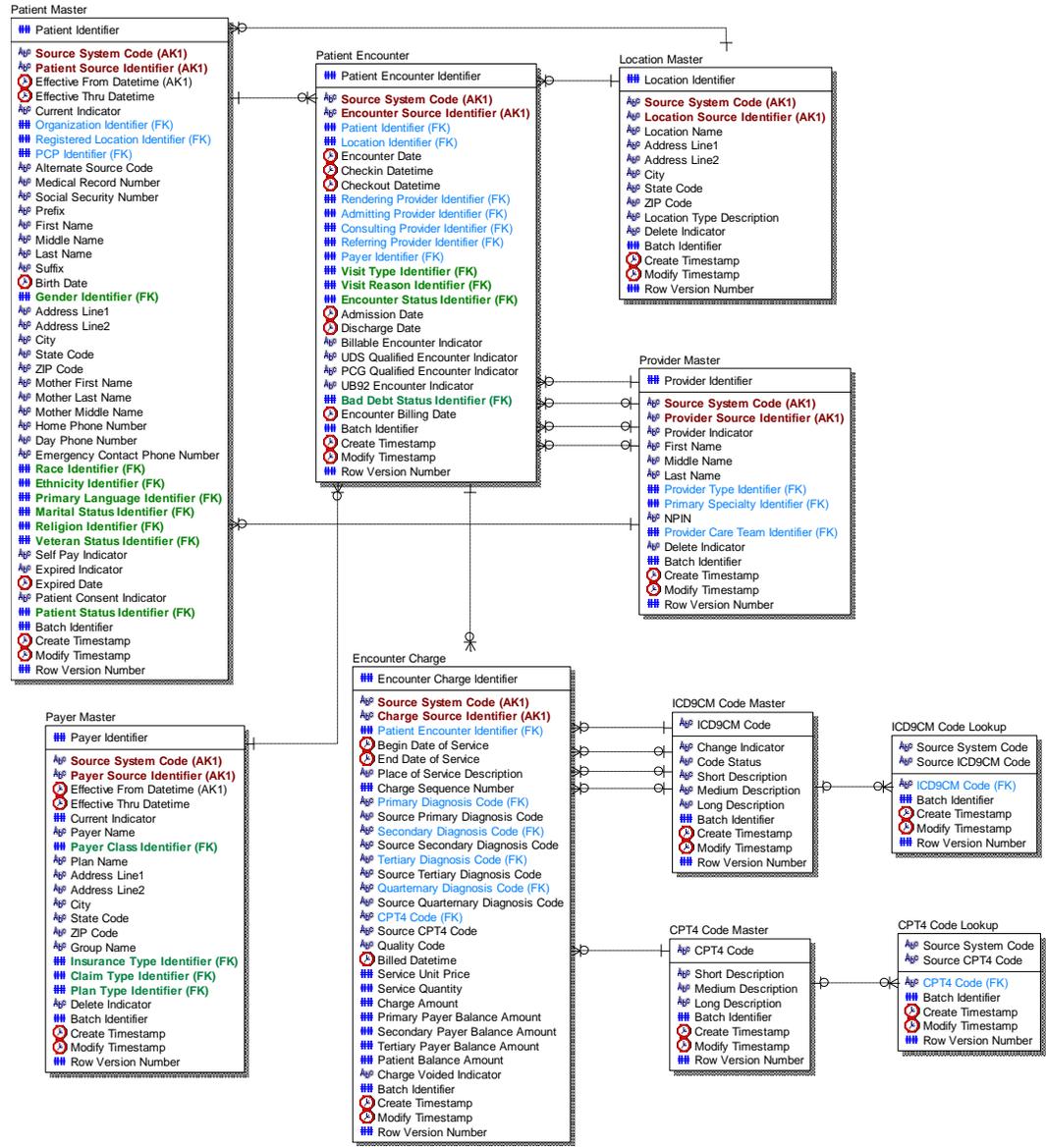
# Master Data Logical Data Model



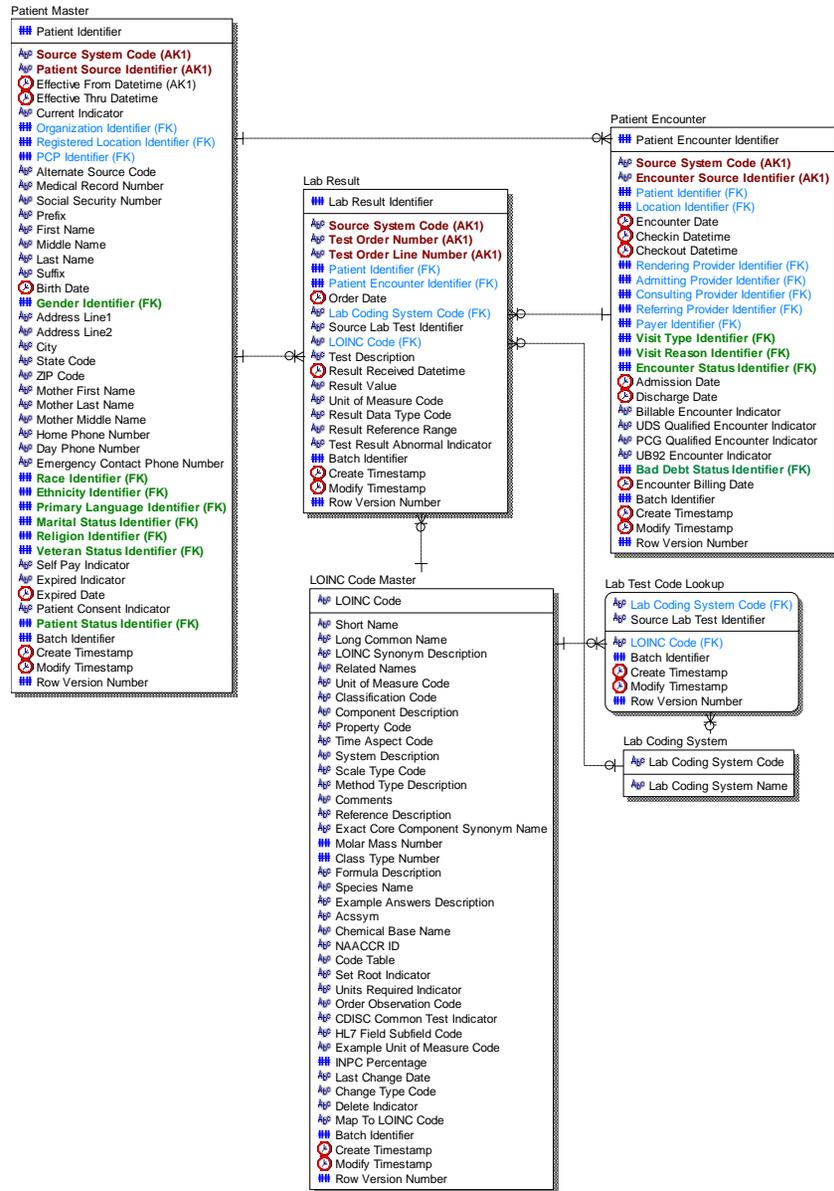
# People & Organization Logical Data Model



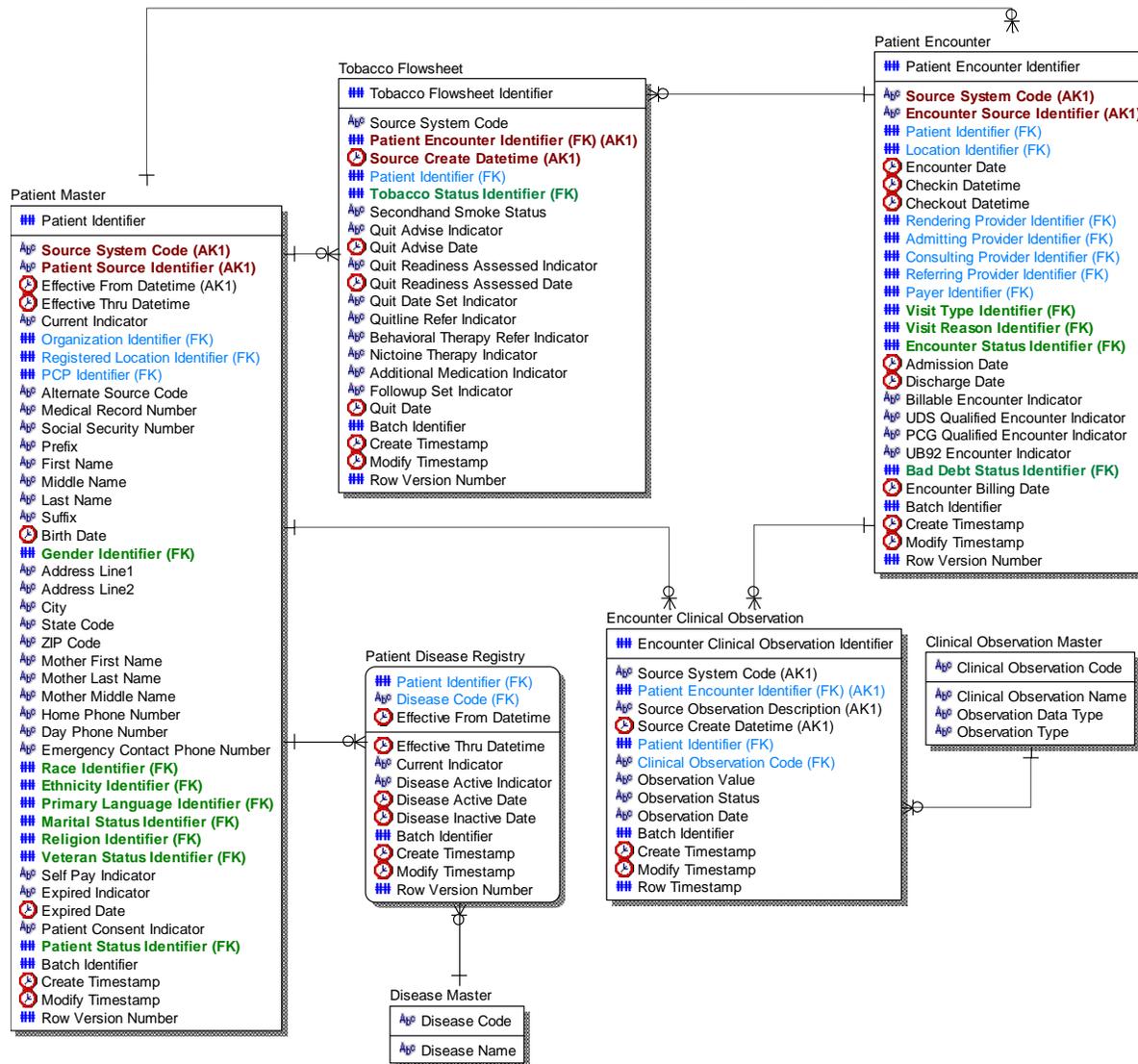
# Patient Encounter Logical Data Model



# Lab Results Logical Data Model



# Clinical Observations Logical Data Model



# Vital Signs Logical Data Model

Patient Encounter

### Patient Encounter Identifier
App Source System Code (AK1)
App Encounter Source Identifier (AK1)
### Patient Identifier (FK)
### Location Identifier (FK)
Encounter Date
Checkin Datetime
Checkout Datetime
### Rendering Provider Identifier (FK)
### Admitting Provider Identifier (FK)
### Consulting Provider Identifier (FK)
### Referring Provider Identifier (FK)
### Payer Identifier (FK)
### Visit Type Identifier (FK)
### Visit Reason Identifier (FK)
### Encounter Status Identifier (FK)
Admission Date
Discharge Date
App Billable Encounter Indicator
App UDS Qualified Encounter Indicator
App PCG Qualified Encounter Indicator
App UB92 Encounter Indicator
### Bad Debt Status Identifier (FK)
Encounter Billing Date
### Batch Identifier
Create Timestamp
Modify Timestamp
### Row Version Number

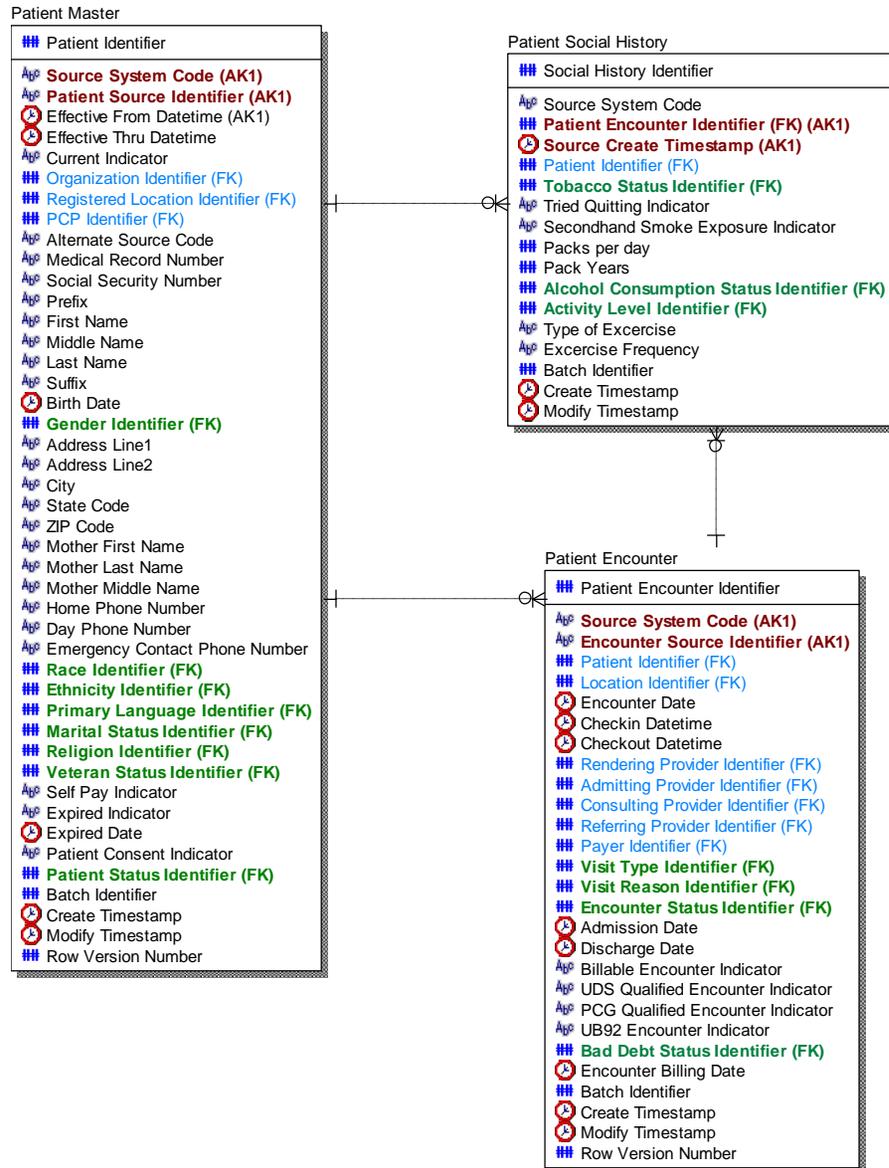
Patient Master

### Patient Identifier
App Source System Code (AK1)
App Patient Source Identifier (AK1)
Effective From Datetime (AK1)
Effective Thru Datetime
App Current Indicator
### Organization Identifier (FK)
### Registered Location Identifier (FK)
### PCP Identifier (FK)
App Alternate Source Code
App Medical Record Number
App Social Security Number
App Prefix
App First Name
App Middle Name
App Last Name
App Suffix
Birth Date
### Gender Identifier (FK)
App Address Line1
App Address Line2
App City
App State Code
App ZIP Code
App Mother First Name
App Mother Last Name
App Mother Middle Name
App Home Phone Number
App Day Phone Number
App Emergency Contact Phone Number
### Race Identifier (FK)
### Ethnicity Identifier (FK)
### Primary Language Identifier (FK)
### Marital Status Identifier (FK)
### Religion Identifier (FK)
### Veteran Status Identifier (FK)
App Self Pay Indicator
App Expired Indicator
Expired Date
App Patient Consent Indicator
### Patient Status Identifier (FK)
### Batch Identifier
Create Timestamp
Modify Timestamp
### Row Version Number

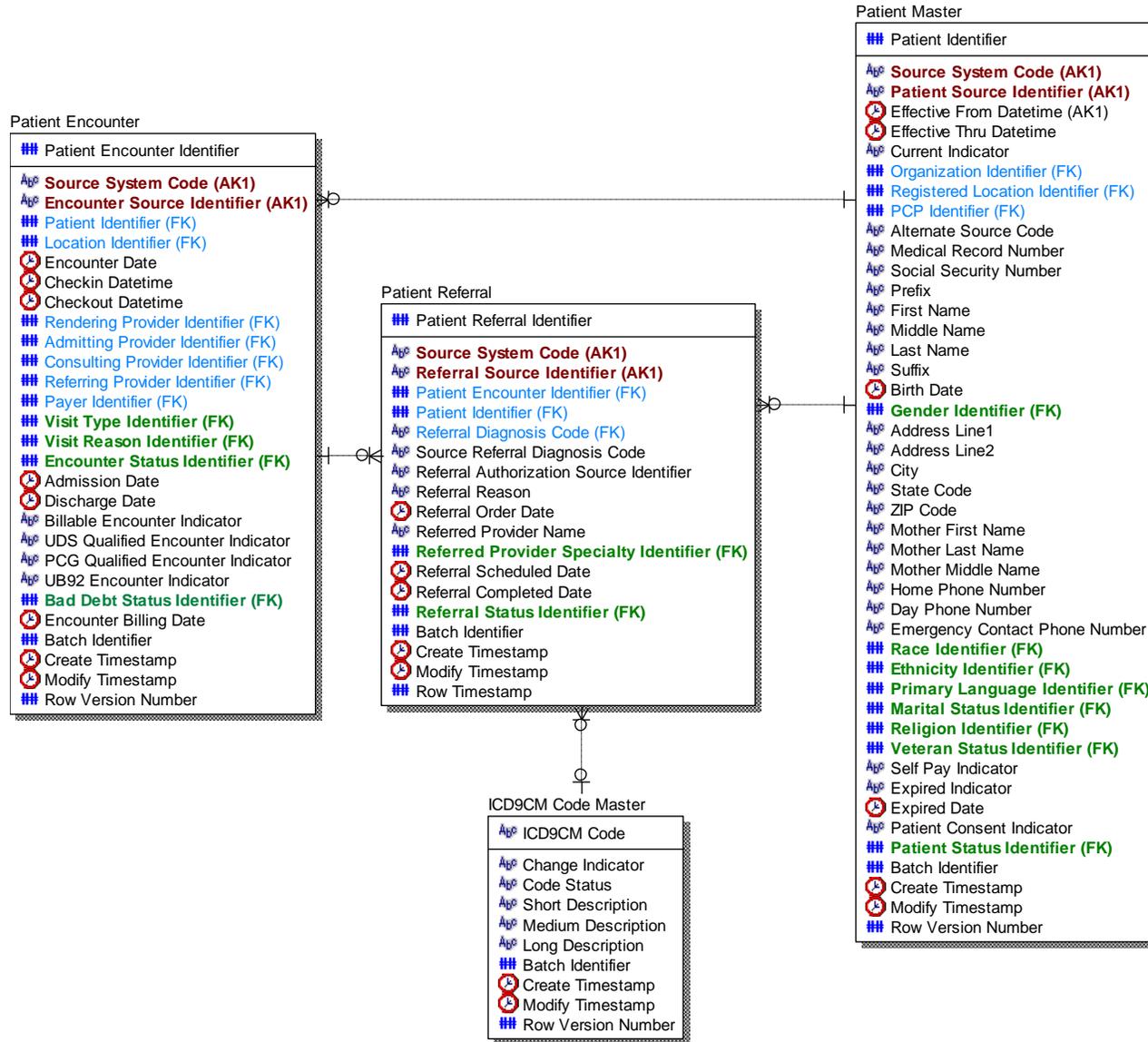
Vital Signs

### Vital Signs Identifier
App Source System Code
### Patient Encounter Identifier (FK) (AK1)
App VitalSigns Datetime (AK1)
### Patient Identifier (FK)
### Height Inches
### Weight Pounds
### Temperature Value
### Systolic Blood Pressure Value
### Diastolic Blood Pressure Value
### Body Mass Index Value
### Pulse Rate Value
### Respiration Rate
### Head Circumference Inches
### SpO2 Value
### Peak Flow Value
### Pain Score Value
### FiO2 Value
App Provider Measured Indicator
### Batch Identifier
Create Timestamp
Modify Timestamp
### Row Version Number

## Social History Logical Data Model



# Provider Referrals Logical Data Model



## ETL Audit and Logging Logical Data Model

