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Utah All Payer Claims Database

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"Patient-centric" Limited Use Datamart User Manual

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INTRODUCTION

Utah All Payer Claims Database

The Utah Health Data Committee is composed of fifteen governor-appointed members and was created by the Utah Health Data Authority Act of 1991. The Committee is staffed by the Office of Health Care Statistics which manages the Utah All Payer Claims Database (APCD).

The Office of Health Care Statistics has collected Healthcare Facility Data (aka hospital discharge data) since 1992. While data derived from inpatient, emergency department, and ambulatory surgery discharge records remain valuable, an increasing number of states and regions have implemented medical and pharmacy claims data collection from healthcare insurance carriers ("payers"). The databases and analytic processes involved in evaluating and reporting these data are commonly referred to as All Payer Databases or "APCDs."

Utah's APCD addresses limitations of the Healthcare Facility Database by collecting data on outpatient, pharmacy, and dental procedures and their cost. Most importantly, the APCD links an individual's records over time as they change health plans and providers. This linkage enables researchers to evaluate healthcare longitudinally using tools like: standard quality metrics, total cost of care measures, and risk adjustment algorithms. On the other hand, the Healthcare Facility Database collects data on all inpatient, emergency department, and ambulatory surgery encounters, which includes data not collected in the APCD such as self-pay, charity care and Medicare encounters.

OHCS began collecting health insurance claims and eligibility files from Utah's commercial carriers in 2009. Utah Administrative Rule requires data submission from commercial insurance carriers licensed in Utah with enrollment of more than 2,500 Utah lives. Data must be submitted according to the technical specifications published by the Health Data Committee and OHCS. Around 40 data suppliers submit flat files monthly, with some carriers having multiple reporting platforms. Data is processed and enhanced under contract with a data management vendor then submitted back to OHCS for analysis and data release.

Limited Use Datamart

The limited use datamart is designed to provide health care information to a wide spectrum of users that excludes certain identifiers but permits the use and disclosure of more identifiers than in a de-identified data set. Unlike the "claims-centric" version of the limited use datamart, the "patient-centric" version includes a longitudinal person identier.

A request for the limited use datamart **must** be approved by the Director of the Office of Health Care Statistics and **a Data Use Agreement must be signed by all data requesters prior to data release.** This agreement has specific requirements which are discussed in the data request form.

Data Processing and Quality

Data Submission

The Utah APCD Data Submission Guide (DSG) provides data element definitions to ensure that all payers report similar data.

System Edits

The data are validated through a process of automated auditing and verification. Each record is subjected to a series of edits that check for accuracy, consistency, completeness, and conformity with the definitions specified in the Data Submission Guide. Individual data suppliers are responsible for the accuracy and completeness of their data and records failing the edit check are returned to the data supplier for correction and resubmission.

Missing and Erroneous Values

Referential integrity is enforced using system edits and ensures that key fields links across files. During processing, if a field is missing or determined to be erroneous (such as an invalid diagnosis code), the field is linked to a lookup table with an integer representing an "unknown" value. For example, invalid or missing diagnosis codes are linked to the diagnosis code lookup table using 9999998 (under conditions where an ICD-9 code would be expected) or 9999999 (under conditions where an ICD-10 code would be expected). The records and associated linking variables representing unknown values can be found in each individual lookup table.

Patient and Provider Confidentiality

OHCS has taken considerable efforts to ensure no individual patient can be identified from the limited use datamart. No full service dates are exposed and patient location is only available at a high level. Addresses are mapped to Utah Small Health Areas, as defined by the Utah Department of Health, Office of Public Health Assessment.

Agreement to Protect Patient Confidentiality

In addition to technical anonymization and aggregation efforts, data users are prohibited from attempting to link the limited use datamart with individually identifiable records from other data sets. Furthermore, the limited use datamart may be used only for the purpose of research and statistical analysis specified in the user's written request for the data. Any effort to determine the identity of any reported cases is prohibited. Redistribution of the data or derivative data sets is prohibited without written consent and a data redistribution license.

Data Format

Standard format for the limited use datamart is a set of flat delimited text files on an external hard drive. Requests for other formats, such as a SQL Server 2016 database backup file, will be considered.

Redistribution

The user shall not redistribute the limited use datamart in its original format without the purchase of a redistribution license. The user shall not redistribute any data products derived from the datamart without written permission from the Office of Health Care Statistics, Utah Department of Health.

Citation

Any statistical reporting or analysis based on the data shall cite the source as the following:

Utah All Payer Claims Database Limited Use Datamart (2013-2016). Utah Health Data Committee/Office of Health Care Statistics. Utah Department of Health. Salt Lake City, Utah. 2018.

LIMITED USE DATAMART DESIGN

Person-level Demographic Information

Two tables are included that contain basic information about each "person" in the APCD.

- RP_Person_Dim
- RP_Person_Fact

Each table contains one record for each person's reporting period, meaning a given person may be duplicated in this table. Only a limited amount of demographic information is available, such as gender, age in years, presence and duration of medical/prescription/dental coverage, and Utah Small Health Area, as defined by the Utah Department of Health, Office of Public Health Assessment (https://ibis.health.utah.gov/pdf/resource/UtahSmallAreaInfo.pdf).

Also note the following:

- The **RP_Person_ID** variable is unique for each person in each reporting period. However, the **Person_ID** variable is unique and consistent across all reporting periods.
- The **Person_ID** may repeat for each valid reporting period since a person may exist in multiple reporting periods.
- Each reporting period spans from January 1st to December 31st.
- It is imperative the data user consider the reporting period when joining person tables to claims tables since the **Person_ID** may not be distinct.

Medical Claims Overview

Five tables are included that contain basic information about each medical claim.

- Claim_Medical_Header
- Claim_Medical_Line
- Claim_Medical_Dx
- Claim_Medical_IP_Procedure
- Claim_Medical_Provider_Alt

The **Claim_Medical_Header** table contains one record for each distinct *claim*, while the **Claim_Medical_Line** table contains one record for each *service* that was rendered. The **Claim_Medical_Dx** table contains one record for each distinct diagnosis submitted with a claim. The **Claim_Medical_IP_Procedure** table contains one record for each distinct inpatient procedure submitted with an inpatient claim. The **Claim_Medical_Provider_Alt** table contains information on the servicing and billing providers for each *service*.

Note that the medical claims tables contain little identifiable health information; the **Person_ID** is the only identifiable information available in this data file. Please also note:

- Medical claims are medical bills submitted to health insurance carriers for services rendered to patients by providers of care.
- Only final claims are included in the data set.
- A claim identification number (**Claim_ID**) has been created to allow the user to count and link claims.
- A service line number (**Claim_Line_No**) has been created to allow the user to count and link services.
- Services are defined as all medical services associated with a particular claim.
- If there are multiple services performed and billed on a claim, each of those services will be uniquely identified and reported on a line in the **Claim_Medical_Line** table.
- Each row in the **Claim_Medical_Line** table represents one claim line (i.e., service) while each row in the **Claim_Medical_Header** table represents a single claim.
- The table below shows the relationship between the **Claim_ID** and **Claim_Line_No** in the **Claim_Medical_Line** table.

Claim_Line_No (Line Counter)	Claim_ID (Claim Integer)
1	1
2	1
3	1
1	2
2	2

Table 1. Example of the relationship between Claim_ID and Claim_Line_No.

- In the above example, the rows with Claim_Line_No = 1, 2, and 3 represent three different services belonging to the same claim (represented by the Claim_ID = 1).
- Unlike the "claims-centric" limited datamart, service start date is not reported. However, the **Service_Order** field is included.
- Each service day has an order; if a member receives multiple services in a day the service order integer is the same. The service order increments for each new date of service.
- The table below shows an example of the relationship between service orders and servicer dates.

Service_Order	Service_Start_Dt
1	10/20/2014
2	10/24/2014
3	11/03/2014
4	11/10/2014
4	11/10/2014
5	12/01/2014
5	12/01/2014
6	12/13/2014

Table 2. Example of the relationship between Service_Order and Service Dates.

- The **Claim_Medical_Header** and **Claim_Medical_Line** tables contain payment information for each unique medical claim and each service line. Payment amounts are rolled up to the claim

level in the **Claim_Medical_Header** table while payment amounts are at the service line level in the **Claim_Medical_Line** table.

- A billing provider means a provider or other entity that submits claims to health care claims processors for health care services provided to a subscriber or member by a service provider.
- A service provider means the provider who directly performed or provided a health care service to a subscriber or member.
- Reported diagnosis codes and procedure codes are included in the data. To search ICD diagnosis codes and ICD procedure codes, use of the **Lookup_ICD_Dx** and **Lookup_ICD_Procedure** tables is required.
- ICD-9-CM or ICD-10-CM are reported in the diagnosis fields; use the ICD-9/10 flag data field to determine which code version was used.
- For medical claims industry standard coding definitions, please refer to the following websites:
    - For Level I HCPCS (CPT) codes, see: http://www.ama-assn.org/ama/pub/category/3113.html
    - For Level II HCPCS (non-CPT) codes, see: http://www.cms.hhs.gov/MedHCPCSGenInfo/
    - For ICD-9-CM and ICD10-CM codes, see: http://www.cdc.gov/nchs/icd.htm
    - For Revenue codes, see: http://www.nubc.org

Pharmacy Claims Overview

Three tables are included that contain basic information about each pharmacy claim.

- Claim_Pharm_Header
- Claim_Pharm_Line
- Claim_Pharm_Provider_Alt

The **Claim_Pharm_Header** table contains one record for each distinct *claim*, while the **Claim_Pharm_Line** table contains one record for each *prescription* that was filled. The **Claim_Pharm_Provider_Alt** table contains information on the pharmacy and prescribing provider for each *prescription*.

Also note the following:

- The pharmacy claims tables contain service level remittance information including provider information, charge and payment information, and National Drug Codes (NDC) from all paid claims for each prescription filled.
- Reported payment information is provided, including payments by the payer and those payments for which the member is responsible.
- Prescription fill dates are not reported. However, **Service_Order** is provided. Please see the previous section for a description of the **Service_Order** variable.
- Reported National Drug Codes (NDCs) are included in the data. For pharmacy claims industry standard coding definitions, please refer to the following website: http://www.fda.gov/drugs/informationondrugs/ucm142438.htm

Provider Information Overview

Only one table is included that contains provider information:

- Provider_Primary_Taxonomy_Alt

This provider table contains a unique provider record for each provider NPI on the submitted claims. However, a surrogate ID (**Proxy_Provider_ID**) has been created and the original NPI omitted. The provider file has limited information but includes the primary taxonomy code as reported on NPPES. Also note the following:

- A provider means a health care facility, health care practitioner, health product manufacturer, health product vendor or pharmacy.
- The **XXX_Provider_Proxy_ID** (found in the **Claim_Medical_Provider_Alt** and **Claim_Pharm_Provider_Alt** tables) can be used to link the provider information associated with a claim line with the appropriate record in the **Provider_Primary_Taxonomy_Alt** table.

Lookup Tables Overview

Several lookup tables are included that include supplemental information.

- Lookup_Bill_Type
- Lookup_CPT4
- Lookup_CPT4_Mod
- Lookup_ICD_Dx
- Lookup_ICD_Procedure
- Lookup_ICD_Vers
- Lookup_Line_Of_Business
- Lookup_NDC
- Lookup_Place_Of_Service
- Lookup_Provider_Taxonomy
- Lookup_Rev
- Lookup_Small_Areas
- Lookup_Time_Period

With the exception of **Lookup_ICD_Dx**, **Lookup_ICD_Procedure**, **Lookup_Small_Areas**, and **Lookup_Time_Period**, the other tables aren't necessary for analysis and are provided as is for reference purposes.

Limited Use Datamart Table Record Layout

Variables in *italics* can be used for linking to other tables with the same variables. For example, to link provider information to a pharmacy claim line, the **Claim_ID** and **Claim_Line_No** variables should be used to match records in the **Claim_Pharm_Line** and **Claim_Pharm_Provider_Alt** tables. For more information, see the sections "Linking Across Tables" and "Joining Normalized Tables Example" in this documentation.

Claim_Medical_Dental_Detail

Column Name	Element Name
Claim_ID	*Payer Claim Control Number*
Claim_Line_No	*Line Counter*
Tooth_Number	Tooth Number
Dental_Quadrant	Dental Quadrant
Tooth_Surface	Tooth Surface

Claim_Medical_Dx

Column Name	Element Name
Claim_ID	*Payer Claim Control Number*
Seq_Num	ICD Diagnosis Sequence Number
Dx_ID	*ICD Diagnosis ID*
POA_Cd	Present on Admission Code
POA_Desc	Present on Admission Description

Claim_Medical_Header

Column Name	Element Name
Claim_ID	*Payer Claim Control Number*
Person_ID	*Person ID*
Claim_Type_Cd	Claim Type Code
Claim_Type_Desc	Claim Type Description
Admit_Type_Cd	Admission Type Code
Admit_Type_Desc	Admission Type Descriptions
Admit_Source_Cd	Admission Source Code
Admit_Source_Desc	Admission Source Description
Discharge_Status_Cd	Discharge Status Code
Discharge_Status_Desc	Discharge Status Description
Bill_Type_Cd	*Bill Type Code*
Third_Party_Liability_Cd	Third Party Liability/Claim Status Code
Third_Party_Liability_Desc	Third Party Liability/Claim Status Description
E_Cd	E-Code
Charge_Amt	Charge Amount
Plan_Paid_Amt	Paid Amount
Prepaid_Amt	Prepaid Amount
Copay_Amt	Co-pay Amount
Coinsurance_Amt	Coinsurance Amount
Line_of_Business_Cd	*Line of Business Code*
Capitation_Flag	Capitated Service Indicator
Admission_Dx_ID	*Admitting Diagnosis*
Principal_Dx_ID	*Principal Diagnosis*
Primary_Proc_ID	*ICD-10-PCS Procedure Code*
Length_of_Stay	Length of Stay
ER_Flag	ER Flag
Line_Count	Total Line Count
Deductible_Amt	Deductible Amount

Dental_Flag	Dental Flag
Service_Order	Service Order
Service_Start_Year	Service Start Year

Claim_Medical_IP_Procedure

Column Name	Element Name
Claim_ID	*Payer Claim Control Number*
Seq_Num	ICD Procedure Sequence Number
Procedure_ID	*ICD Procedure ID*

Claim_Medical_Line

Column Name	Element Name
Claim_ID	*Payer Claim Control Number*
Claim_Line_No	*Line Counter*
Person_ID	*Person ID*
Place_of_Service_Cd	*Facility Type - Professional*
Rev_Cd	*Revenue Code*
CPT4_Cd	*Professional Procedure Code*
CPT4_Mod1_Cd	*Procedure Modifier - 1*
CPT4_Mod2_Cd	*Procedure Modifier - 2*
CPT4_Mod3_Cd	*Procedure Modifier - 3*
CPT4_Mod4_Cd	*Procedure Modifier - 4*
Units	Quantity
Charge_Amt	Charge Amount
Prepaid_Amt	Prepaid Amount
Plan_Paid_Amt	Paid Amount
NDC_Cd	*Drug Code*
Capitation_Flag	Capitated Service Indicator
ER_Flag	ER Flag
Copay_Amt	Co-pay Amount
Coinsurance_Amt	Coinsurance Amount
Deductible_Amt	Deductible Amount
Dental_Flag	Dental Flag
Unit_Of_Measure_Cd	Unit of Measure
Unit_Of_Measure_Desc	Unit of Measure Description
Service_Order	Service Order
Service_Start_Year	Service Start Year

Claim_Pharm_Header

Column Name	Element Name
Claim_ID	*Payer Claim Control Number*
Person_ID	*Person ID*
Claim_Type_Cd	Claim Type Code
Claim_Type_Desc	Claim Type Description
Third_Party_Liability_Cd	Third Party Liability/Claim Status Code
Third_Party_Liability_Desc	Third Party Liability/Claim Status Description
Postage_Claim_Amt	Postage Amount Claimed

Copay_Amt	Co-pay Amount
Coinsurance_Amt	Coinsurance Amount
Plan_Paid_Amt	Paid Amount
Charge_Amt	Charge Amount
Line_of_Business_Cd	*Line of Business Code*
Deductible_Amt	Deductible Amount
Service_Order	Service Order
Filled_Year	Filled Year

Claim_Pharm_Line

Column Name	Element Name
Claim_ID	*Payer Claim Control Number*
Claim_Line_No	*Line Counter*
Person_ID	*Person ID*
NDC_Cd	*Drug Code*
Drug_Nm	Drug Name
Refill_Ind	New Prescription or Refill
Generic_Ind	Generic Drug Indicator
Dispensed_As_Written_Cd	Dispense as Written Code
Dispense_as_Written_Desc	Dispense as Written Description
Compound_Drug_Ind	Compound Drug Indicator
Compound_Drug_Desc	Compound Drug Indicator Description
Quantity	Quantity Dispensed
Days_Supply	Days Supply
Charge_Amt	Charge Amount
Plan_Paid_Amt	Paid Amount
Ingredient_Cost_Amt	Ingredient Cost/List Price
Dispensing_Fee_Amt	Dispensing Fee
Copay_Amt	Co-pay Amount
Coinsurance_Amt	Coinsurance Amount
Deductible_Amt	Deductible Amount
Service_Order	Service Order
Filled_Year	Filled Year

Lookup_Bill_Type

Column Name	Element Name
Bill_Type_Cd	*Bill Type Code*
Bill_Type_Desc	Bill Type Description
IPOP_Indicator	Inpatient/Outpatient Indicator
Bill_Type_Facility_Type_Desc	Facility Description
Bill_Type_Classification_Desc	Classification Description
Bill_Type_Frequency_Desc	Frequency Description
CMS_POS_Code	CMS Place of Service Code

Lookup_CPT4

Column Name	Element Name
CPT4_Cd	*HCPCS/CPT4 Code*

CPT4_Desc	HCPCS/CPT4 Description
Active_Ind	Active Indicator
Effective_Date	Effective Date
Expiration_Date	Expiration Date
Lab_Xray_Ind	Laboratory/Imaging Indicator

Lookup_CPT4_Mod

Column Name	Element Name
Mod_Code	*HCPCS/CPT4 Modifier Code*
Mod_Level	HCPCS/CPT4 Modifier Level
Mod_Desc	HCPCS/CPT4 Modifier Description

Lookup_ICD_Dx

Column Name	Element Name
ICD_Dx_ID	*ICD Diagnosis ID*
ICD_Vers_Flag	*ICD Version Flag*
Dx_Cd	ICD Diagnosis Code
Version_Start_Dt	ICD Version Start Date
Version_End_Dt	ICD Version End Date
Dx_Short_Desc	ICD Short Diagnosis Description
Dx_Long_Desc	ICD Long Diagnosis Description
Neonate_Ind	Neonate Indicator
Obs_Del_Ind	Obstetrics/Delivery Indicator

Lookup_ICD_Procedure

Column Name	Element Name
ICD_Procedure_ID	*ICD Procedure ID*
ICD_Vers_Flag	*ICD Version Flag*
ICD_Procedure_Cd	ICD Procedure Code
Version_Start_Dt	ICD Version Start Date
Version_End_Dt	ICD Version End Date
Proc_Short_Desc	ICD Short Procedure Description
Proc_Long_Desc	ICD Long Procedure Description

Lookup_ICD_Vers

Column Name	Element Name
ICD_Vers_Flag	*ICD Version Flag*
Icd_Vers_Desc	ICD Version Description

Lookup_Line_Of_Business

Column Name	Element Name
Line_of_Business_Cd	*Line of Business Code*
Line_of_Business_Desc	Line of Business Description

Lookup_NDC

Column Name	Element Name
NDC_Code	*NDC Code*

NDC_ID	NDC ID
LABELER_CODE	Labeler Code
PROD_CODE	Product Code
PKG_CODE	Package Code
Prod_Type_Nm	Product Type Name
Drug_Pkg_Desc	Drug Package Description
Trade_Nm	Trade Name
GENERIC_NAME	Generic Name
Dosage_Form	Dosage Form
Route	Route
Mkt_Start_Dt	Market Start Date
MKT_END_Dt	Market End Date
ACTIVE_INGRED	Active Ingredient
STRENGTH	Strength
Therapeutic_Class	Therapeutic Class
DEA_Schedule	DEA Schedule
RX_OTC	Over-the-Counter Indicator
NDC_Source	NDC Source

Lookup_Place_Of_Service

Column Name	Element Name
POS_Code	*Place of Service Code*
POS_Short_Desc	Place of Service Short Description
POS_Long_Desc	Place of Service Long Description

Lookup_Provider_Taxonomy

Column Name	Element Name
Taxonomy_Cd	*Taxonomy Code*
Taxonomy_type	Taxonomy Type
Classification	Taxonomy Classification
Specialization	Taxonomy Specialization
Definition	Taxonomy Definition
Notes	Taxonomy Notes
CMS_Specialty_Cd	CMS Specialty Code

Lookup_Rev

Column Name	Element Name
Rev_Code	*Revenue Code*
Rev_Code_Desc	Revenue Code Description
Rev_Code_Desc_Long	Revenue Code Long Description
Category	Revenue Code Category
Lab_Xray_Ind	Laboratory/Imaging Indicator
ER_Flag	ER Flag

Lookup_Small_Areas

Column Name	Element Name
Small_Area_Cd	*Small Area Code*

Small_Area_Name	Small Area Name

Lookup_Time_Period

Column Name	Element Name
Reporting_Period_ID	*Reporting Period ID*
Data_Start_Date	Reporting Period Start Date
Data_End_Date	Reporting Period End Date
Reporting_Period_Desc	Reporting Period Description

RP_Person_Dim

Column Name	Element Name
RP_Person_ID	*Reporting Period Person ID*
Reporting_Period_ID	*Reporting Period ID*
Person_ID	*Person ID*
Age_In_Years	Person Age in Years.
Gender_Cd	Member Gender
Gender_Desc	Member Gender Description
Small_Area_Cd	*Small Area Code*
Line_of_Business_Cd	*Line of Business Code*

RP_Person_Fact

Column Name	Element Name
RP_Person_ID	*Reporting Period Person ID*
Reporting_Period_ID	*Reporting Period ID*
Person_ID	*Person ID*
Member_Months	Medical Coverage Member Months
Rx_Months	Prescription Coverage Member Months
Dental_Months	Dental Coverage Member Months

Provider_Primary_Taxonomy_Alt

Column Name	Element Name
Proxy_Provider_ID	*Proxy Provider ID*
Provider_Primary_Taxonomy_Code	Primary Taxonomy Code
Entity_Type_Code	Entity Type Code

Claim_Medical_Provider_Alt

Column Name	Element Name
Claim_ID	*Payer Claim Control Number*
Claim_Line_No	*Line Counter*
Service_Provider_Proxy_ID	*Service Provider Proxy ID*
Billing_Provider_Proxy_ID	*Billing Provider Proxy ID*

Claim_Pharm_Provider_Alt

Column Name	Element Name
Claim_ID	*Payer Claim Control Number*
Claim_Line_No	*Line Counter*
Pharmacy_Proxy_ID	*Pharmacy Proxy ID*

Prescribing_Provider_Proxy_ID	*Prescribing Provider Proxy ID*

ALPHABETICAL LISTING OF ELEMENT DESCRIPTIONS

The table below contains element names and descriptions for all fields included in the limited use datamart.

Element Name	Element Description
Active Indicator	Active indicator.
Active Ingredient	This is the active ingredient list. Each ingredient name is the preferred term of the UNII code submitted.
Admission Source Code	Admission source code. SOURCE: National Uniform Billing Data Element Specifications
Admission Source Description	See previous element for valid values and descriptions.
Admission Type Code	Admission type code. 1 - Emergency 2 - Urgent 3 - Elective 4 - Newborn 5 - Trauma Center 9 - Information not available SOURCE: National Uniform Billing Data Element Specifications
Admission Type Descriptions	See previous element for valid values and descriptions.
Admitting Diagnosis	Unique integer used to link to the ICD_Dx lookup table.
Bill Type Code	Bill type code. See Lookup Table. Not used for professional claims.
Bill Type Description	See previous element for valid values and descriptions.
Billing Provider Proxy ID	Billing Provider Proxy ID. Used to link to Provider_Primary_Taxonomy_Alt.
Capitated Service Indicator	Capitated services flag. Y - Services are paid under a capitated arrangement N - Services are not paid under a capitated arrangement U - Unknown
Charge Amount	Charge amount.

Element Name	Element Description
Claim Type Code	Indicates the type of claim. I - Inpatient O - Outpatient P - Professional R - Pharmacy
Claim Type Description	See previous element for valid values and descriptions.
Classification Description	Bill classification.
CMS Place of Service Code	CMS Place of Service Code equivalent.
CMS Specialty Code	Associated CMS associated specialty code (where possible).
Co-pay Amount	The preset, fixed dollar amount for which the individual is responsible.
Coinsurance Amount	The dollar amount an individual is responsible for - not the percentage.
Compound Drug Indicator	Compound drug indicator. N - Non-compound drug Y - Compound drug U - Non-specified drug compound
Compound Drug Indicator Description	See previous element for valid values and descriptions.
CPT4 ID	Unique integer assigned to each HCPCS/CPT4 code. NOT USED FOR LINKING.
Days Supply	Estimated number of days the prescription will last.
DEA Schedule	This is the assigned DEA Schedule number as reported by the labeler. Values are CI, CII, CIII, CIV, and CV.
Deductible Amount	Deductible amount.
Dental Coverage Member Months	Number of months in the given reporting period that a given person had dental coverage.
Dental Flag	Dental services flag. Indicates whether or not the claim includes dental services.
Dental Quadrant	Dental quadrant.

Element Name	Element Description
Discharge Status Code	Discharge status. 01 - Discharged to home or self-care 02 - Discharged/transferred to another short term general hospital for inpatient care 03 - Discharged/transferred to skilled nursing facility (SNF) 04 - Discharged/transferred to nursing facility (NF) 05 - Discharged/transferred to another type of institution for inpatient care or referred for outpatient services to another institution 06 - Discharged/transferred to home under care of organized home health service organization 07 - Left against medical advice or discontinued care 08 - Discharged/transferred to home under care of a Home IV provider 09 - Admitted as an inpatient to this hospital 20 - Expired 30 - Still patient or expected to return for outpatient services 40 - Expired at home 41 - Expired in a medical facility 42 - Expired, place unknown 43 - Discharged/ transferred to a Federal Hospital 50 - Hospice – home 51 - Hospice – medical facility 61 - Discharged/transferred within this institution to a hospital-based Medicare-approved swing bed 62 - Discharged/transferred to an inpatient rehabilitation facility including distinct parts of a hospital 63 - Discharged/transferred to a long-term care hospital 64 - Discharged/transferred to a nursing facility certified under Medicaid but not certified under Medicare
Discharge Status Description	See previous element for valid values and descriptions.
Dispense as Written Code	Dispense as written code. See Lookup Table B-1.J in the Data Submission Guide (Version 3.1).
Dispense as Written Description	See previous element for valid values and descriptions.
Dispensing Fee	Dispensing fee.
Dosage Form	The translation of the DosageForm Code submitted by the firm. The complete list of codes and translations

Element Name	Element Description
	can be found at http://www.fda.gov/ForIndustry/DataStandards/StructuredProductLabeling/ucm162038.htm
Drug Code	An NDC code used only when a medication is paid for as part of a medical claim.
Drug Name	Name of drug.
Drug Package Description	A description of the size and type of packaging in sentence form. Multilevel packages will have the descriptions concatenated together. For example: 4 BOTTLES in 1 CARTON/100 TABLETS in 1 BOTTLE.
E-Code	Describes an injury, poisoning or adverse effect. Decimal point NOT included.
Effective Date	Effective date.
Entity Type Code	Provider entity type. 1 - Individual 2 - Organization This is field is derived from the linked record in NPPES. It is important to note that individuals can be sole proprietors, potentially with multiple locations and multiple employees. Per CMS documentation, "A sole proprietor is not an incorporated individual because the sole proprietor has not formed a corporation. Being a sole practitioner or solo practitioner does not necessarily mean that the practitioner is a sole proprietor, and vice versa." (https://www.cms.gov/Regulations-and-Guidance/Administrative-Simplification/NationalProvIdentStand/Downloads/NPI_FactSheet_Sole_Prop_web.pdf)
ER Flag	Emergency Room flag. Indicates whether or not the claim includes ER services.
Expiration Date	Expiration date.
Facility Description	Facility type.
Facility Type - Professional	CMS Place of Service Codes for professional claims and dental claims. Not used for institutional claims. https://www.cms.gov/Medicare/Coding/place-of-service-codes/Place_of_Service_Code_Set.html
Filled Year	Year prescription was filled.
Frequency Description	Bill frequency.
Generic Drug Indicator	Generic drug indicator. 01 - branded drug 02 - generic drug

Element Name	Element Description
Generic Name	Sometimes called the nonproprietary name, this is usually the active ingredient(s) of the product.
HCPCS/CPT4 Code	HCPCS/CPT4 code.
HCPCS/CPT4 Description	HCPCS/CPT4 description.
HCPCS/CPT4 Modifier Code	HCPCS/CPT4 modifier code.
HCPCS/CPT4 Modifier Description	HCPCS/CPT4 modifier description.
HCPCS/CPT4 Modifier Level	HCPCS/CPT4 modifier level.
ICD Diagnosis Code	ICD diagnosis code. Excludes decimal.
ICD Diagnosis ID	Unique integer used to link to the ICD_Dx lookup table.
ICD Diagnosis Sequence Number	Diagnosis number from the claim. Principal diagnosis is 1.
ICD Long Diagnosis Description	Long description of the diagnosis code.
ICD Long Procedure Description	Long description of the procedure code.
ICD Procedure Code	ICD procedure code. Excludes decimal.
ICD Procedure ID	Unique integer used to link to the ICD_Procedure lookup table. Blank if not an institutional claim.
ICD Procedure Sequence Number	ICD Procedure number from the claim. Primary procedure is 1.
ICD Short Diagnosis Description	Short description of the diagnosis code.
ICD Short Procedure Description	Short description of the procedure code.
ICD Version Description	See previous element for valid values and descriptions.
ICD Version End Date	Version end date.
ICD Version Flag	ICD-9/ICD-10 flag. 0 - ICD-9-CM code 1 - ICD-10-CM/ICD-10-PCS code
ICD Version Start Date	Version start date.
ICD-10-PCS Procedure Code	Unique integer used to link to the ICD_Procedure lookup table. Primary procedure code for this line of service. Blank if not an institutional claim.
Ingredient Cost/List Price	Cost of the drug dispensed.

Element Name	Element Description
Inpatient/Outpatient Indicator	Inpatient/outpatient indicator. IP - Inpatient OP - Outpatient
Labeler Code	Labeler code.
Laboratory/Imaging Indicator	Laboratory/imaging indicator. Y - Yes N - No
Length of Stay	Length of stay in days.
Line Counter	Line number for this service. The line counter begins with 1 and is incremented by 1 for each additional service line of a claim. All claims must contain a line 1.
Line of Business Code	Insurance line of business. 1 - Commercial 2 - Medicaid/CHIP 3 - Medicare
Line of Business Description	See previous element for valid values and descriptions.
Market End Date	This is the date the product will no longer be available on the market. If a product is no longer being manufactured, in most cases, the FDA recommends firms use the expiration date of the last lot produced as the EndMarketingDate, to reflect the potential for drug product to remain available after manufacturing has ceased. Products that are the subject of ongoing manufacturing will not ordinarily have any EndMarketingDate. Products with a value in the EndMarketingDate will be removed from the NDC Directory when the EndMarketingDate is reached.
Market Start Date	This is the date that the labeler indicates was the start of its marketing of the drug product.
Medical Coverage Member Months	Number of months in the given reporting period that a given person had medical coverage.
Member Gender	Member's gender. M - Male F - Female U - Unknown
Member Gender Description	See previous element for valid values and descriptions.
NDC Code	National Drug Code.
NDC ID	Unique integer assigned to each NDC record. NOT USED FOR LINKING.

Element Name	Element Description
NDC Source	NDC source.
Neonate Indicator	Neonate indicator.
New Prescription or Refill	Prescription refill indicator. 01 - New prescription 02 - 99 Refill Count
Obstetrics/Delivery Indicator	Obstetrics/delivery indicator.
Over-the-Counter Indicator	Over-the-counter indicator.
Package Code	Package code.
Paid Amount	Includes all health plan payments and excludes all member payments.
Payer Claim Control Number	Unique integer assigned to each claim. Used as a link to other tables.
Person Age in Years.	Person's age in years at year end.
Person ID	Unique number representing a person. This identifier is consistent across multiple member records and can be used for longitudinal and multiple coverage analysis.
Pharmacy Proxy ID	Pharmacy Proxy ID. Used to link to Provider_Primary_Taxonomy_Alt.
Place of Service Code	Two-digit place of service numeric code.
Place of Service Long Description	Place of service long description.
Place of Service Short Description	Place of service short description.
Postage Amount Claimed	Not typically captured.
Prepaid Amount	For capitated services, the fee for service equivalent amount.
Prescribing Provider Proxy ID	Pharmacy Provider Proxy ID. Used to link to Provider_Primary_Taxonomy_Alt.
Prescription Coverage Member Months	Number of months in the given reporting period that a given person had prescription coverage.

Element Name	Element Description
Present on Admission Code	Present on admission (POA) code associated with the given diagnosis. 3 - Unknown Blank - Unknown 1 - Exempt for POA reporting E - Exempt for POA reporting N - Diagnosis was not present at time of inpatient admission U - Documentation insufficient to determine if condition was present at time of inpatient admission W - Clinically undetermined Y - Diagnosis was present at time of inpatient admission
Present on Admission Description	See previous element for valid values and descriptions.
Primary Taxonomy Code	Primary taxonomy code.
Principal Diagnosis	Unique integer used to link to the ICD_Dx lookup table.
Procedure Modifier - 1	Procedure modifier is used when a modifier clarifies/improves the reporting accuracy of the associated procedure code.
Procedure Modifier - 2	Procedure modifier is used when a modifier clarifies/improves the reporting accuracy of the associated procedure code.
Procedure Modifier - 3	Procedure modifier is used when a modifier clarifies/improves the reporting accuracy of the associated procedure code.
Procedure Modifier - 4	Procedure modifier is used when a modifier clarifies/improves the reporting accuracy of the associated procedure code.
Product Code	Product code.
Product Type Name	Indicates the type of product, such as Human Prescription Drug or Human OTC Drug.
Professional Procedure Code	Procedure code for professional services. HCPCS, including CPT codes of the American Medical Association, are valid entries.
Proxy Provider ID	Masked National Provider Identifier (NPI).
Quantity	Count of services performed.
Quantity Dispensed	Number of metric units of medication dispensed.
Reporting Period Description	Reporting period, display-friendly.
Reporting Period End Date	Reporting period end date.

Element Name	Element Description
Reporting Period ID	Unique integer assigned to each reporting period. Each reporting period is one calendar year.
Reporting Period Person ID	Unique number representing a person during a given period. This identifier is consistent FOR A GIVEN PERIOD ONLY across multiple member records.
Reporting Period Start Date	Reporting period start date.
Revenue Code	National Uniform Billing Committee Codes. Includes a leading zero.
Revenue Code Category	Revenue code category.
Revenue Code Description	Revenue code short description.
Revenue Code Long Description	Revenue code long description.
Route	The translation of the Route Code submitted by the firm, indicating route of administration. The complete list of codes and translations can be found at http://www.fda.gov/ForIndustry/DataStandards/StructuredProductLabeling/ucm162034.htm
Service Order	Integer representing where the given service or product falls in sequence during a reporting period for a given person.
Service Provider Proxy ID	Service Provider Proxy ID. Used to link to Provider_Primary_Taxonomy_Alt.
Service Start Year	Year of service.
Small Area Code	Numerical code assigned to each Utah Department of Health Small Health Area.
Small Area Name	Name assigned to each Utah Department of Health Small Health Area.
Strength	Strength values and units for each active ingredient.
Taxonomy Classification	Taxonomy classification.
Taxonomy Code	NUCC provider taxonomy code. See http://nucc.org/index.php/code-sets-mainmenu-41/provider-taxonomy-mainmenu-40/code-lookup-mainmenu-50
Taxonomy Definition	Taxonomy definition.
Taxonomy Notes	Taxonomy notes.
Taxonomy Specialization	Taxonomy specialization.
Taxonomy Type	Taxonomy type.
Therapeutic Class	These are the reported pharmacological class categories corresponding to the active ingredients listed above.

Element Name	Element Description
Third Party Liability/Claim Status Code	Claim status code. 01 - Processed as primary 02 - Processed as secondary 03 - Processed as tertiary 19 - Processed as primary, forwarded to additional payer(s) 20 - Processed as secondary, forwarded to additional payer(s) 21 - Processed as tertiary, forwarded to additional payer(s)
Third Party Liability/Claim Status Description	See previous element for valid values and descriptions.
Tooth Number	Tooth number or letter identification.
Tooth Surface	Tooth surface identification.
Total Line Count	Total number of lines in the given claim.
Trade Name	Also known as the proprietary name. It is the name of the product chosen by the labeler.
Unit of Measure	Unit of measure used. Applies to service quantity. DA - Days MJ - Minutes UN - Units Other standard ANSI values may be used.
Unit of Measure Description	See previous element for valid values and descriptions.

Linking Across Tables

The following elements can be used to link across the provided tables. Note that some joins may require the use of Claim_Line_No in addition to Claim_ID.

Table Name	Column Name	Element Name	Element Description
Claim_Medical_Dental_Detail	Claim_ID	Payer Claim Control Number	Unique integer assigned to each claim. Used as a link to other tables.
Claim_Medical_Dental_Detail	Claim_Line_No	Line Counter	Line number for this service. The line counter begins with 1 and is incremented by 1 for each additional service line of a claim. All claims must contain a line 1.
Claim_Medical_Dx	Claim_ID	Payer Claim Control Number	Unique integer assigned to each claim. Used as a link to other tables.
Claim_Medical_Dx	Dx_ID	ICD Diagnosis ID	Unique integer used to link to the ICD_Dx lookup table.
Claim_Medical_Header	Claim_ID	Payer Claim Control Number	Unique integer assigned to each claim. Used as a link to other tables.
Claim_Medical_Header	Person_ID	Person ID	Unique number representing a person. This identifier is consistent across multiple member records and can be used for longitudinal and multiple coverage analysis.
Claim_Medical_Header	Admission_Dx_ID	Admitting Diagnosis	Unique integer used to link to the ICD_Dx lookup table.
Claim_Medical_Header	Principal_Dx_ID	Principal Diagnosis	Unique integer used to link to the ICD_Dx lookup table.
Claim_Medical_Header	Primary_Proc_ID	ICD-10-PCS Procedure Code	Unique integer used to link to the ICD_Procedure lookup table. Primary procedure code for this line of service. Blank if not an institutional claim.
Claim_Medical_IP_Procedure	Claim_ID	Payer Claim Control Number	Unique integer assigned to each claim. Used as a link to other tables.
Claim_Medical_IP_Procedure	Procedure_ID	ICD Procedure ID	Unique integer used to link to the ICD_Procedure lookup table. Blank if not an

Table Name	Column Name	Element Name	Element Description
			institutional claim.
Claim_Medical_Line	Claim_ID	Payer Claim Control Number	Unique integer assigned to each claim. Used as a link to other tables.
Claim_Medical_Line	Claim_Line_No	Line Counter	Line number for this service. The line counter begins with 1 and is incremented by 1 for each additional service line of a claim. All claims must contain a line 1.
Claim_Medical_Line	Person_ID	Person ID	Unique number representing a person. This identifier is consistent across multiple member records and can be used for longitudinal and multiple coverage analysis.
Claim_Pharm_Header	Claim_ID	Payer Claim Control Number	Unique integer assigned to each claim. Used as a link to other tables.
Claim_Pharm_Header	Person_ID	Person ID	Unique number representing a person. This identifier is consistent across multiple member records and can be used for longitudinal and multiple coverage analysis.
Claim_Pharm_Line	Claim_ID	Payer Claim Control Number	Unique integer assigned to each claim. Used as a link to other tables.
Claim_Pharm_Line	Claim_Line_No	Line Counter	Line number for this service. The line counter begins with 1 and is incremented by 1 for each additional service line of a claim. All claims must contain a line 1.
Claim_Pharm_Line	Person_ID	Person ID	Unique number representing a person. This identifier is consistent across multiple member records and can be used for longitudinal and multiple coverage analysis.
Lookup_ICD_Dx	ICD_Dx_ID	ICD Diagnosis ID	Unique integer used to link to the ICD_Dx lookup table.
Lookup_ICD_Procedure	ICD_Procedure_ID	ICD Procedure ID	Unique integer used to link to the ICD_Procedure lookup table.
Lookup_Time_Period	Reporting_Period_ID	Reporting Period ID	Unique integer assigned to each reporting

Table Name	Column Name	Element Name	Element Description
			period. Each reporting period is one calendar year.
RP_Person_Dim	RP_Person_ID	Reporting Period Person ID	Unique number representing a person during a given period. This identifier is consistent FOR A GIVEN PERIOD ONLY across multiple member records.
RP_Person_Dim	Reporting_Period_ID	Reporting Period ID	Unique integer assigned to each reporting period. Each reporting period is one calendar year.
RP_Person_Dim	Person_ID	Person ID	Unique number representing a person. This identifier is consistent across multiple member records and can be used for longitudinal and multiple coverage analysis.
RP_Person_Fact	RP_Person_ID	Reporting Period Person ID	Unique number representing a person during a given period. This identifier is consistent FOR A GIVEN PERIOD ONLY across multiple member records.
RP_Person_Fact	Reporting_Period_ID	Reporting Period ID	Unique integer assigned to each reporting period. Each reporting period is one calendar year.
RP_Person_Fact	Person_ID	Person ID	Unique number representing a person. This identifier is consistent across multiple member records and can be used for longitudinal and multiple coverage analysis.
Provider_Primary_Taxonomy_Alt	Proxy_Provider_ID	Proxy Provider ID	Masked National Provider Identifier (NPI).
Claim_Medical_Provider_Alt	Claim_ID	Payer Claim Control Number	Unique integer assigned to each claim. Used as a link to other tables.
Claim_Medical_Provider_Alt	Claim_Line_No	Line Counter	Line number for this service. The line counter begins with 1 and is incremented by 1 for each additional service line of a claim. All claims must contain a line 1.
Claim_Medical_Provider_Alt	Service_Provider_Proxy_ID	Service Provider Proxy ID	Service Provider Proxy ID. Used to link to

Table Name	Column Name	Element Name	Element Description
			Provider_Primary_Taxonomy_Alt.
Claim_Medical_Provider_Alt	Billing_Provider_Proxy_ID	Billing Provider Proxy ID	Billing Provider Proxy ID. Used to link to Provider_Primary_Taxonomy_Alt.
Claim_Pharm_Provider_Alt	Claim_ID	Payer Claim Control Number	Unique integer assigned to each claim. Used as a link to other tables.
Claim_Pharm_Provider_Alt	Claim_Line_No	Line Counter	Line number for this service. The line counter begins with 1 and is incremented by 1 for each additional service line of a claim. All claims must contain a line 1.
Claim_Pharm_Provider_Alt	Pharmacy_Proxy_ID	Pharmacy Proxy ID	Pharmacy Proxy ID. Used to link to Provider_Primary_Taxonomy_Alt.
Claim_Pharm_Provider_Alt	Prescribing_Provider_Proxy_ID	Prescribing Provider Proxy ID	Pharmacy Provider Proxy ID. Used to link to Provider_Primary_Taxonomy_Alt.

Joining Normalized Tables Example

The limited use datamart consists of 25 normalized tables. Most tables have linking identifiers, allowing users to join multiple tables together to construct needed information.

For example, to find counts of the ages (in years) of all people in the APCD who had a claim for an office visit (99212) during calendar year 2014 that included a diagnosis for essential hypertension (I10), a user would need to link multiple tables and filter using several criteria.

Needed Tables

- Claim_Medical_Line
- Lookup_ICD_Dx
- RP_Person_Dim
- Lookup_Time_Period

Filtering Criteria

- Find only claims with office visits that use HCPCS/CPT 99212.
- Find only claims that include a diagnosis of essential hypertension, using ICD-10-CM diagnosis code I10.
- Select only records that have joined in the correct person demographics.

The first two filtering criteria are straightforward. The third, however, is more complex. Because the **RP_Person_Dim** table contains a unique record for each person for each year they are present in the APCD, we need to ensure we only join one for each person reflecting the year of service. This will prevent duplication and also yield the correct ages.

Also, it is possible that a person had multiple 99212 office visits that included an I10 essential hypertension diagnosis. Optimally, we would count distinct people only once.

One way to implement this example using SQL would be:

```
SELECT
      rpd.Age_In_Years
      ,COUNT(DISTINCT rpd.Person_ID) Person_Cnt
FROM Claim_Medical_Line cml
LEFT JOIN Claim_Medical_Dx cmd ON
      cml.Claim_ID = cmd.Claim_ID
LEFT JOIN Lookup_ICD_Dx lid ON
      cmd.Dx_ID = lid.ICD_Dx_ID
LEFT JOIN RP_Person_Dim rpd ON
      cml.Person_ID = rpd.Person_ID
LEFT JOIN Lookup_Time_Period ltp ON
      rpd.Reporting_Period_ID = ltp.Reporting_Period_ID AND
```

```
        Service_Start_Year = YEAR(ltp.Data_Start_Date)
WHERE
        CPT4_Cd = '99212' AND
        lid.Dx_Cd = 'I10' AND
        YEAR(ltp.Data_Start_Date) = 2014
GROUP BY
        rpd.Age_In_Years
ORDER BY
        rpd.Age_In_Years
```