

Oregon All Payer All Claims Database (APAC)

Data User Guide 2011-2022 Claims & Insurance Coverage

Data from HSRI Release 20

November 2024

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About this guide

The purpose of the APAC Data User Guide (DUG) is to help data requesters and analysts understand the structure, function and limitations of APAC data. The DUG includes information about:

- Background of the APAC program
- Health insurance coverage data
- Demographic data
- Health care claims and cost data
- Information about health care providers
- APAC data request options

OHA determines the following before data request approval:

- Appropriate use of the requested APAC data
- Minimum necessary data for one specific project
- APAC data disclosure and subsequent use complies with <u>HIPAA</u>
- Security after data transfer APAC data is stored privately and securely behind a firewall

The APAC website provides detailed information to help APAC data requesters:

- APAC Data Request Fact Sheet
- APAC data request applications: <u>Public Use</u>, <u>Limited</u>; <u>Oregon state</u> <u>agencies and public health surveillance</u>
- APAC Public Use File (PUF) Data Elements Workbook
- Data Use Agreement Example for Public Data Sets
- APAC Data Dictionary
- APAC Data Elements Workbook
- Data Review Committee
- Data Use Agreement Example for Limited Data Sets
- Cost waiver request form
- Insurance and claims data 101
- APAC Birth & Death Certificate Linked Data Summary
- Request <u>Birth and/or Death Certificate Data Linked to APAC Data</u>
- Race, ethnicity, language and disability data collection

Consultation with the APAC team prior to submitting an APAC data request is highly recommended

To request a consultation contact: APAC.Admin@odhsoha.oregon.gov

All Payer All Claims Data (APAC) Executive Summary

The APAC database provides access to timely, reliable administrative health care data. The data makes it possible for state agencies, legislators, researchers and others to evaluate health care access, utilization, outcomes and costs for Oregonians. The information helps improve quality of care, reduce costs, promotes transparency and informs policy decisions.

APAC data available for request includes medical, pharmacy and dental claims, demographic data, monthly insurance coverage data, and provider information.

- Data is reported by commercial insurers, Medicaid, and Medicare for 3.3 to 4.2 million people annually from 2011 through 2022
- APAC includes up to 98% of the Oregonian population annually
- About 1% of the people in APAC are not Oregon residents

Continuity of insurance coverage and utilization 2011 to 2022:

- Up to 85% of the people with medical coverage had 12 months of continuous coverage annually
- About 90% of the people with medical coverage had coverage the prior year
- 12% to 33% of the people had pharmacy coverage but no reported medical coverage annually
- About 5% of the people had dental, but no reported medical coverage
- About 80% of the people with medical coverage had a medical claim annually
- About 60% of the people with pharmacy coverage had a pharmacy claim annually
- About 40% of the people with dental coverage had a dental claim annually

Trends in enrollment varied by insurance type 2011 to 2022:

About 24% of people in APAC were covered by Medicare annually

- The number of people with Medicaid coverage nearly doubled from 2011 to 2022 to 1.5 million people or about 36% of people in APAC due in part to the Affordable Care Act, subsequent Medicaid expansion and the COVID19 public health emergency
- The number of people with commercial coverage declined 27% from 2011 to 2016 and then grew 83% from 2016 to 2022 to 3.1 million people or 73% of the people in APAC
 - The decline in 2016 was due in part to a decision by the Supreme Court that did not permit Oregon to require <u>ERISA</u> entities to report data to APAC
 - The increase from 2019 to 2022 was due primarily to required dental data reporting that began in 2019
- Prior to 2019 about 12% of the people were covered by more than one insurance type at the same time (Medicare, Medicaid, commercial).
 Starting in 2019, people covered by more than one insurance type increased to 29% of the people by 2022

Trends in the amount paid for health care claims varied by insurance type:

- The total amount paid for all claims increased from \$16 billion in 2011 to \$29 billion in 2022
 - Medical claims accounted for 88% of the total amount paid for all claims in 2011 and decreased to 75% by 2022
 - Pharmacy claims accounted for 12% of the total amount paid for all claims in 2011 and nearly doubled to 22% by 2022
 - Dental claims accounted for about 3% of the total amount paid from 2019 to 2022
- Medicare paid about 41% of the total amount paid in 2022, but covered only about 23% of the people. About 1 million Medicare claims were paid zero dollars because providers were paid per member per month and not by claim
- Commercial insurers paid about 36% of the total amount paid in 2022, but covered about 73% of the people. About 300,000 commercial claims were

paid zero dollars because providers were paid per member per month and not by claim

 Medicaid paid about a 23% of the total amount paid in 2022, but covered about 36% of the people. About 6 million Medicaid claims were paid zero dollars because providers were paid per member per month and not by claim

Detailed APAC Summary Data for 2011-2022

Detailed counts, crosstabulations and paid amounts from APAC data by year from 2011-2022 are available in a <u>downloadable EXCEL spreadsheet</u>. The information is useful for community groups, policy makers, researchers and others and is helpful for requesting APAC data. The following is a list of the linked EXCEL tabs:

- Read me
- Unique Person Identifier Issues
- People in APAC
- People by Line of Business (LOB)-Medicare, Medicaid, Commercial
- Race, ethnicity
- People with claims
- Claims
- Claims by LOB
- Paid amounts
- Paid amounts by LOB
- Paid per person
- \$100k plus paid for people
- APAC grouper claims
- APAC grouper people
- APAC grouper paid amounts
- APAC grouper % paid
- Substance use disorder claims, people, paid amounts
- Clinical Classifications Software Refined (CCSR) counts

APAC Summary Data for 2022

2022 Oregon Population 4.3 million people

98% of the Oregon population present in APAC

82% have Medical coverage

91% have pharmacy coverage

72% have dental coverage

People with medical coverage

29% Insured by Medicare, Medicaid and/or commercial at the same time

27% Me	edicare	44% Medicaid	40% Commercial		
50% Medicare Advantage	61% Fee-For- Service		21% PEBB OEBB	18% Self-Insured Not PEBB OEBB	66% Not PEBB OEBB and Not Self- Insured

Oregonians not in APAC:

- 3% uninsured
- 3% payers waived from reporting data to APAC
- 1% payers exempt from reporting data to APAC

Note: Some people with medical insurance are covered by more than one insurance type or different commercial insurers at the same time or during the year. During the COVID19 Public Health Emergency Medicare members were allowed to switch from Medicare Advantage to Medicare FFS and vice versa. Medicare members who move out of the payer service area can switch from Medicare Advantage to Medicare FFS

Self-insured

PEBB/OEBB: Oregon public employee or educators benefit board

APAC Background

Purpose and administration. The Oregon State Legislature established APAC in 2009 through House Bill 2009 to measure the quality, quantity, and value of health care services in Oregon. Oregon Revised Statutes for Health Care Data Reporting codified the legislation. Administrative Rules provide the guidelines for APAC data collection, use and release. APAC is operated by the Oregon Health Authority (OHA) and is an integral component of the state's ongoing health care improvement efforts.

Data collection. The APAC program collects medical, pharmacy and dental claims data, member enrollment data and provider information from commercial insurers and public payers including Medicaid and Medicare. All data submitters follow a standardized method for reporting data to APAC that includes a set of required data elements and file formats that are detailed at the <u>data submission</u> web page under Current File Layouts and Submission Schedule for Quarterly Claims.

Data submission schedule. Payers submit twelve months of data on a quarterly basis. Submissions occur one month after the close of each calendar quarter. Submissions include data for the most recent calendar quarter and all data for the prior three quarters. Data change from one quarter to the next for a variety of reasons:

- New claims are submitted for a previously reported month (or quarter)
- Denied claims are corrected, resubmitted and then paid
- Claims are adjudicated and then paid a different amount
- People are disenrolled because their premium was not paid or they did not meet eligibility criteria
- Errors are corrected

See <u>Appendix A-G and 1 & 2</u> for detailed information regarding data submitted by reporters.

APAC data are collected through the third quarter of the subsequent calendar year. APAC data are not released until a year after the last quarter of claims for the year is submitted. For example, claims for calendar year 2022 were released in early 2024. The lag in data availability ensures that data are as complete and reliable as possible for the year.

Data management. OHA maintains oversight and management of APAC data and contracts with a vendor to collect and process the data. A critical part of the vendor's role is to ensure that APAC data are reliable and accurate from data submission to data release. The vendor tests the data reported by each payer to ensure that the data includes the required data elements and conforms to the required file format. The vendor compares the data submitted to prior data and identifies any anomalies and significant deviations. The vendor works with payers to resolve any data issues identified. When necessary, payers may be required to resubmit files.

Data privacy and security. Because APAC contains <u>protected health</u> <u>information (PHI)</u>, several layers of protections are implemented to ensure privacy and security from intake to release. All data are encrypted during transmission and at rest. Access to APAC data is limited to authorized staff.

Requests for APAC data are subject to the standards and regulations of the <u>Health Insurance Portability and Accountability Act of 1996</u> (HIPAA) to protect the privacy and security of members and their health information.

APAC vendor transition. The APAC Program completed a transition to a new vendor in January 2021. The new APAC solution is transparent with no proprietary methodologies.

APAC Data Availability

APAC includes:

- Medical, pharmacy and dental claims data:
 - Claim status or type: Paid fee-for-service, managed or coordinated care encounter, denied, orphan, reversed and coordination of benefit
 - o Line of business (LOB): Medicare, Medicaid and commercial
 - o Payer paid amounts
 - Expected payments from members: copayment, coinsurance, deductible and/or patient paid
 - o Diagnosis, procedure and modifier codes
 - o Bill type, place of service and revenue code
 - o Pharmacy: National drug codes, quantity, prescribing provider
- Monthly member eligibility/insurance coverage data
 - o Member demographics (not identified data)

- Gender, age, race, ethnicity, rarest race ethnicity and primary language
- o Member demographics (identified data)
 - Date of birth, date of death, address, zip code and county
- o Relationship, product codes and primary insurance
- o Coverage type: medical, pharmacy and dental
- o Line of business (Medicare, Medicaid and commercial)
- Provider data
 - o Attending, pharmacy, prescribing and billing providers
 - o Identifiers: National provider, tax, drug enforcement agency
 - Names and work location
- Data from mandatory APAC data reporters:

Commercial insurers with 5,000 or more covered lives in Oregon Third party administrators (TPA) with 5,000 or more covered lives Pharmacy benefit managers (PBM)

Dual special need plans (DSNP)

Oregon Health Exchange plans

Public Employees Benefit Board (PEBB) plans

Oregon Educators Benefit Board (OEBB) plans

Medicare part D plans from commercial pharmacies

Medicare Advantage plans from commercial insurers

- Data from voluntary APAC data reporters:
 - Medicare Part A and Part D data from Centers for Medicare & Medicaid Services (CMS)
 - o Medicaid data from the Oregon Health Authority
 - Commercial data from some ERISA entities

APAC does not include

- Clinical or electronic health record data (EHR)
- Prescribed pharmaceuticals (only dispensed)
- Pharmaceutical rebates
- APAC does not collect data from the following (not an exhaustive list):
 Commercial insurers with fewer than 5,000 covered lives in Oregon
 Third party administrators (TPA) with fewer than 5,000 covered lives
 ERISA Self-insured plans unless they volunteer to report data

Stop loss plans

Student health plans

Federal Employee Health Benefit plans

Indian Health Service

Military Health

Tricare

Veteran Affairs

Corrections (federal, state, county and city)

Oregon State Hospital

Worker compensation

Vision plans

Accident plans

Automobile plans

Disability plans

Hospital indemnity plans

Disease specific plans

Long term care plans

Oregon Reproductive Health Client Program services

Oregon Substance Use and Mental Health Block Grant services

Medicare supplement plans

Not All APAC Data is Available For Request

- Per the data use agreement with the Centers for Medicare and Medicaid Services (CMS) only Oregon State government agencies can receive Medicare eligibility and claims data for Medicare Part A and Part B (fee-for-service).
- Trade secret protections APAC is required to honor trade secrets by payers.
 - The names of commercial payers are not available for request in combination with amount payer paid, amount allowed, amount charged or member paid amounts (copayment, coinsurance, deductible)
 - o Payer and member paid amounts by LOB are not available for request at the zip code or county geographic level because some zip codes and counties have only one commercial payer and trade secret agreements in state law prohibit disclosure

Annual Medicare Type A and B data not available for request

13% to 19% of total APAC people

58% to 85% of total Medicare people

9% to 14% of total claims

26% to 35% of total Medicare claims

 Medicaid data only data – Requesters interested in Medicaid data must request data from the Medicaid program directly at OHA.HealthAnalyticsRequest@state.or.us

APAC Data That May Be Available For Request With Restrictions

- Requests for identified Protected Health Information (PHI) data requires detailed justification, higher security measures and is subject to greater scrutiny by the OHA Data Review Committee and Oregon Department of Justice. Identified data for members and subscribers includes:
 - Date of birth
 - Zip code
 - County
 - Names
 - Addresses
- Data is considered identifiable for members when data for low frequency or rare health conditions is requested in combination with geographic data below the state level such as zip code and county and/or in combination with age, gender, race, ethnicity
- APAC permits release of identified and identifiable PHI data for public health surveillance per HIPAA only for Oregon Public Health agencies for public health surveillance and operations only. Oregon Public Health agencies that want to use APAC for research must submit an APAC-3 data request form and are subject to approval with the same PHI restrictions as other data requesters
- Substance Use Disorder data in APAC is available for request and requires additional justification and security measures. The Data Use Agreement (DUA) differs from the standard APAC DUA and conveys additional responsibility to the data requester for protecting privacy, confidentiality

APAC Data Request Types

Public use files and limited data sets are available for request. The <u>APAC Data Request Fact Sheet</u> provides more detail about requirements, cost and timeframe.

Public use files (PUF)

PUF data files are deidentified in compliance with <u>HIPAA</u> standards. PUF data requests do not require Institutional Review Board (IRB) approval and typically take a few weeks to obtain data. PUF data may not be linked to any other data.

Data requesters receive all of the listed data elements in the <u>PUF data dictionary</u> for each requested PUF. A limited number of variables are available in PUF files.

Data excluded from PUFs:

- Denied claims
- Orphan claims
- Substance use disorder claims
- Medicare Part A and Part B claims and enrollment
- County
- Zip code

There are four different PUF files available for request:

- Medical claims
- Pharmacy claims
- Medical member months
- Pharmacy member months

Limited data sets

'Limited' is the term used in HIPAA to describe a data set with identifiable information with heightened risk for reidentification, requiring a higher level of protection and oversight than a PUF. Limited data can be used to inform activities related to health care operations, treatment, payment, public health, or research defined in <u>HIPAA</u>. Due to the risk for reidentification and breaching member confidentiality and privacy, limited data set requests require:

- An Institutional Review Board (IRB) approval for research prior to submitting an APAC data request
- Approval from the <u>Data Review Committee</u> (DRC) after submitting application
- May require approval from the Oregon Department of Justice (DOJ)

A greater number of data variables are available for limited data requests compared to PUF data. There are more than 300 data elements available for request.

Limited data sets may be linked to external data only with written approval by OHA. Data requesters who plan to link APAC data with another data source must contact the APAC team to discuss options. **APAC prefers that their vendor links APAC data with external data requester provided data.**

Limited data requests are limited to a single project defined by a specific purpose, questions, hypotheses and study population that can be completed in 1-3 years. To ensure compliance with HIPAA, only the minimum necessary data elements and data years will be approved and provided for a specific project.

APAC data is required to be destroyed at the end of the 1-2 year project. APAC data cannot be used for another project or for a purpose not approved by APAC.

APAC does not approve general requests. For example, the following requests would be denied:

- A request for "all medical, pharmacy and dental claims and member months
 data elements for 2011-2022 data to analyze health outcomes." This request
 will not be approved because it is not specific. Health outcomes is a general
 term that describes a multitude of different measures and cannot be
 completed in 1-2 years. The data requester is required to define the specific
 health outcome(s) for their project i.e., inpatient hospitalization, emergency
 department, prenatal care, immunization, primary care, etc.
- A request to "analyze paid amounts for all health services" will not be approved. Health services is a general term that describes a multitude of different measures. The data requester is required to submit a clearly defined list of specific health services.

A request for multiple years of APAC requires the data requester to provide specific questions, analyses to justify the need for longitudinal data. For example, a comparison of emergency department utilization two years prior to and two years after a particular policy, event or health service.

Options for defining a specific project

- Select a specific study population. For example:
 - o People with a diagnosis for diabetes, pregnancy, asthma, injury etc.

- People who had an inpatient hospitalization, emergency department visit, primary care visit, prenatal care visit, substance use disorder treatment etc.
- People who received an opioid, amphetamine, blood pressure or asthma medication etc.
- Claim groupers available in APAC can be useful for identifying a study group:
 - CCSR, BETOS, DRG, MDC, CCS category, NDC class, AHFS and ACG

And

- Describe specific independent, covariate and dependent variable analyses
- Describe specific medical claims questions and analyses
- Describe specific pharmacy claims questions and analyses
- Describe specific dental claims questions and analyses
- Describe specific member months questions and analyses

Or another option:

- Select a topic that does not require detailed data variables at the record level data for people. For example:
 - o Utilization
 - Total cost of care
- Request claims data by available claims grouper such as APAC grouper, <u>CCSR</u>, <u>BETOS</u>, <u>DRG</u>, <u>MDC</u>, <u>CCS category</u>, <u>NDC class</u> rather than detailed claims variables and describe independent, dependent and covariate variables

Identifiers in APAC member month and claims data

Member identifier. Each person has a member identifier reported to APAC from each of their insurance plans. Member identifiers are present in claims, member month and demographic data. When a person is covered by different insurers at the same time or different times, they will have more than one member ID in APAC.

Unique person identifier. The unique person identifier is intended to identify each person across time and insurance plans. Th goal is for each person to have exactly one unique person identifier. The <u>vendor assigns a unique person</u> <u>identifier</u> across payers and data years based on payer reported member identifiers, subscriber name, date of birth and address and by member first name, last name, date of birth and address.

Issues with member identifiers. Some payers report the same member identifier for different people. For instance, a payer sometimes reports the same member identifier for a whole family, even though each person should receive a unique member ID. The vendor does not exclude these problematic member identifiers in their unique person identifier methodology. The result is different people are assigned the same unique person identifier.

Issues with unique person identifiers. Some people in APAC do not have exactly one unique person identifier. There are around 1.3 million people with more than one unique person identifier. Additionally, there are instances where two people are wrongly assigned the same unique person ID.

Interim solution for unique person identifiers. OHA continues to work with its vendor to identify a unique identifier for each person. APAC developed a unique person identifier based on the first name, the last name and date of birth. Problematic member IDs are not eligible for the interim solution and are not assigned unique person ID. Data requesters receive the APAC interim uniquepersonIDs and member IDs for approved data files.

Historical Policy Issues that Impact APAC Data Trends

There are a number of policy issues that significantly impact trends in APAC member months and claims data 2011-2022 that data requesters should take into consideration for research, analyses and interpreting results.

- 2014 Affordable Care Act implemented. Oregon expanded Medicaid eligibility
 for the first time to adults that are not pregnant or qualify for Medicaid based
 on disability. Income eligibility was raised from the federally required minimum
 up to 300% for children. Medicaid enrollment increased significantly. The
 Medicaid population prior to 2014 differed significantly
- 2016 <u>SCOTUS decision</u> prevented Oregon from requiring ERISA entities to report data to APAC. Claims and enrollment data reported by ERISA entities declined.

- 2016 International Classification of Diseases 10th revision adopted. First full year of data available that payers switched from reporting ICD9 to ICD10. All diagnoses codes do not translate1:1 from ICD9 to IC10
- Post 2016 Medicaid expansion. <u>Oregon Medicaid</u> and Medical assistance programs continued to expand eligibility to include additional adults and children not previously eligible for Medicaid. The Medicaid population prior to 2016 differed significantly
- 2019 Payers were newly required to report dental claims and member month data for dental members
- 2020 COVID19 Public Health Emergency (PHE). Medicaid eligibility
 verification was suspended for the public health emergency. People with
 Medicaid did not have to demonstrate eligibility through 2024. The Medicaid
 population prior to 2020-2022 differed significantly compared to 2016.
 Medicare members were permitted to switch from Medicare Advantage to FFS
 and vice versa during the PHE and did not need to wait for the annual open
 enrollment period

APAC data structure and tips

APAC data is structured in relational data tables or views that can be linked by shared primary keys. The APAC data structure is many-to-many for claims, eligibility, demographics and providers.

It takes about 10 terabytes to store the APAC database

The primary tables or views include:

Medical Claims (by member by payer plan)

Pharmacy Claims (by member by payer plan)

Dental Claims (by member by payer plan)

Eligibility or member month data (monthly by member by payer plan)

Race, ethnicity and primary language (by member by payer plan)

Provider (attending, pharmacy and billing by payer)

Member month data (monthly insurance coverage)

Payers report monthly insurance coverage data and demographic data for members by plan. See the <u>APAC Data Dictionary</u> for a list of data elements for the member month data.

Member Month data

826 million total rows 2011-2022

A member has up to 12 monthly rows of data per year by payer

Excluded member month data. Some payers report more than one member month data for a member in a given month. The vendor selects a single member month per member based on the last time the quarter of data was submitted and excludes the remainder. The result is some claims data will not link to member month data because some member month data is excluded. APAC is working with its vendor to mitigate the issue.

Primary keys for member month eligibility include:

- dw member ID
- me003_product_code*
- month_eligibility
- year_eligibility

Eligibility or member month data can be linked to claims data using the listed primary keys in the eligibility data and claims data.

People with multiple insurers at the same time

Some people are covered by different payers/insurers at the same time because:

- A person has commercial insurance through their employer and
 - o their spouse/partner's employer
 - o they are Medicare eligible
 - o they are Medicaid eligible
- A person has commercial insurance through spouse/partner's employer and
 - o they are Medicare eligible
 - o they are Medicaid eligible

A person is Medicare and Medicaid eligible

People with more than 1 insurer yearly

10% to 29% total

3% to 4% dual eligible (Medicare & Medicaid)

2% to 11% commercial & Medicare 4% to 19% commercial & Medicaid

People with only 1 insurer yearly

12% to 21% only Medicare

14% to 33% only Medicaid

43% to 59% only commercial

People with pharmacy and no medical coverage

There are no commercial pharmacy-only insurance plans in Oregon. That means people in Oregon with pharmacy insurance have medical insurance. However,

there are some people in APAC who only have data for pharmacy coverage, not

medical coverage. That means that their medical coverage is not reported to APAC even though they have it. The primary reason for people with pharmacy and no medical coverage reported is likely that ERISA entities elected not to report medical coverage and claims data to APAC, but for unknown reasons pharmacy coverage and claims data were reported.

While ERISA entities may not report medical coverage or claims for people, some of the people are covered by a different payer at the same time and that other payer reports medical coverage and claims to APAC either as a

People with pharmacy and no medical coverage

3 million total people 2011-2022

414 thousand to 1.4 million people annually

About 99% are people with commercial insurance

12% to 33% of the total people in APAC annually

18% to 45% of people with commercial coverage

primary or secondary payer-coordination of benefit claim. The diagnosis and procedure codes, paid amounts etc., in the claims provided by the other payer may offer useful information for analyses and potential options for imputation.

Annually up to 52,000 people with Medicare coverage have reported pharmacy, but no medical coverage. Pharmacy only coverage is not an option in Medicare. All Medicare people have medical coverage. Analysts may consider imputing medical coverage or excluding Medicare people with pharmacy and no medical coverage.

People with dental and no medical coverage

The likely reasons for people with dental and no medical coverage are the same reasons described above for people with pharmacy and no medical coverage. Unlike pharmacy, there are dental-only insurance plans in Oregon.

Data options for people with no reported medical coverage

 Data requesters may decide not to request APAC data for people with no medical coverage People with dental and no medical coverage 2019-2022

415,663 total people

99.99% are people with commercial coverage

3% to 6 of the total people in APAC annually

6%-8% of people with commercial coverage

27% to 57% of total dental claims

- Data requesters may want to exclude data for people with no medical coverage for some analyses
- Analysts should consider including people with no medical coverage reported in the denominator in calculations of per capita or per member utilization or costs

Member Month Product Codes (me003_insurance_product_type_cd)

Product codes reported by payers for members monthly are used to identify payer line of business (Medicare, Medicaid and commercial) and are useful for identifying subcategories of each line of business. Medicaid subcategories include children's health insurance program (CHIP), managed care for people with disabilities, dual eligible for Medicare, fee-for-service, low income and restricted benefits. Medicare subcategories include fee-for-service, cost, Medicare Advantage, pharmacy, and special needs plans. Commercial subcategories include managed care, fee-for-service, employee plans, preferred provider plan and self-insured.

There are issues with product codes:

- Sometimes payers report different product codes for the same member for the same month and year
- Sometimes payers do not report a product code for a member for a month and year
- Sometimes the product code reported in member month data does not match the product code reported in claims data for the member

Options for addressing problematic product codes

- Data requesters can deduplicate product codes
- Data requesters can request that APAC deduplicate product codes
 - When Medicare and commercial product codes are reported for the same member the same year, month APAC selects the Medicare reported product codes
 - The Oregon Health Authority (OHA) is the only reporter for Medicaid and does not report duplicate product codes

Member month Line of Business (LOB)

The APAC vendor identifies line of business (LOB: Medicare, Medicaid, commercial) for each member by month and year based in part on the product code (me003_insurance_product_type_cd) and in part on information provided by APAC. For example, some payers are Medicare only so regardless of the reported product code, the line of business is identified as Medicare.

There are about a half million total members with different lines of business assigned for the same month and year that adds up to about 9 million member months. The problem is with Medicare and commercial payers. The same member is assigned Medicare and commercial line of business. Medicaid members are reported only by OHA, so Medicaid members are never assigned Medicare or commercial.

Options for addressing more than one LOB for a member

Data requesters can resolve this issue in their own analyses or they can request that APAC resolve the issue before sharing the data. APAC selects Medicare as the LOB when Medicare and commercial LOB are identified for the same member for the same month and year.

Medicare Advantage and Medicare Fee-For-Service. External data requesters can request Medicare Advantage medical coverage data (Part C), but not Medicare Part A and/or B medical coverage data (fee-for-service). OHA's data use agreement with CMS does not permit sharing Medicare fee-for-service (FFS) data with requesters except state agencies. External data requesters can request all Medicare pharmacy claims data (Part D),

There's no variable available in the APAC analytic solution that identifies Medicare Advantage pharmacy and Medicare FFS pharmacy coverage (Part D). External data requesters are not able to calculate Medicare Advantage and Medicare FFS pharmacy because APAC cannot share CMS data with external data requesters.

Data requesters can ask APAC to create variables that identify Medicare Advantage and Medicare FFS member months and claims. Be aware that there are some members with Medicare pharmacy coverage that are unknown Medicare type (neither Medicare Advantage nor Medicare FFS). This occurs

when Medicare pharmacy members do not link to a Medicare member with Medicare medical coverage.

Subcategories of commercial coverage. Commercial coverage type can be split into subcategories including PEBB/OEBB, self-insured, PEBB/OEBB not self-insured, self-Insured not PEBB/OEBB and commercial not PEBB/OEBB and not self-insured. Mutually exclusive categories are PEBB/OEBB, Self-Insured and not PEBB/OEBB and commercial not PEBB/OEBB and not self-insured.

PEBB/OEBB is the Public Employees and Oregon Educators Benefit Board that provides coverage for public employes. Self-insured is when the employer/entity pays claims directly or indirectly through a third party administrator and/or pharmacy benefit management entity. Benefits, utilization and costs are very different for each of these mutually exclusive categories along with trends over time. Self-Insured plans are regulated by the federal government through ERISA while the other categories are regulated by the state. Data requesters can ask for the subcategories of commercial coverage.

Dual Eligible members and categories. Dual eligibles are members with Medicare and Medicaid coverage at the same time. Medicare is the primary payer and Medicaid is the secondary payer. Medicaid covers health services that Medicare does not cover. About 4% of total people, 17% of Medicare people and 12% of Medicaid people are dual eligibles.

There is no variable available in the APAC solution that identifies dual eligible people. Data requesters can ask APAC for a dual eligible variable and to create mutually exclusive categories: dual eligible, Medicare not dual and Medicaid not dual. Data requesters are not able to create these categories themselves because APAC cannot share CMS Medicare data with external data requesters

Claims data

Medical, pharmacy and dental claims are reported by payer for members. See the <u>APAC Data</u> <u>Dictionary</u> for a list of data elements for claims.

Primary keys for claims include:

- dw_member_ID
- mc003_product_code for medical claims*
- pc003_product_code for pharmacy claims*
- dc003 product code for medical claims*
- start date for medical and dental claims
- fill date for pharmacy claims

Claims data can be linked to eligibility or member month data using the listed primary keys in the claims view and eligibility view.

Some members with member month data do not

have any reported claims. Annually about 20% of members with monthly medical coverage don't have any medical claims; about 40% with pharmacy coverage don't have any pharmacy claims and about 60% with dental coverage don't have any dental claims. This means that the member was enrolled but did not receive services that the insurer paid for the year.

Orphan claims

Claims that do not link to a member month are identified as an orphan claim. Orphan claims are identified by the APAC vendor and an orphan flag is available for request. Note, there are some claims that are identified as both orphan and not orphan for unknown reasons. Orphan claims occur for different reasons.

 The most likely reason is because there is federally required grace period to pay insurance premiums. During the grace period, monthly eligibility is reported to APAC, but subsequently reported APAC data excludes member monthly eligibility data when the premium was not paid. Payers may or may not recoup payments for claims during the grace period for excluded members with unpaid premiums.

Claims

1.1 billion Total claims

436 million Medicare 328 million Medicaid 376 million Commercial

620 million medical claims

242 million Medicare 197 million Medicaid 181 million Commercial

508 million pharmacy claims

194 million Medicare128 million Medicaid186 million Commercial

12 million dental claims

800 thousand Medicare
2.8 million Medicaid
8.6 million Commercial

• Alternatively, it could be that payers report claims for a member, but no member months for unknown reasons.

Options for addressing orphan claims

- Data requesters can impute member month coverage for the month the claim occurred or request APAC to impute
- Data requesters can exclude orphan claims or request that APAC exclude orphan claims

Claim Product Codes

In addition to reporting product codes for member months, payers report product codes for claims: mc003_insurance_product_type_cd for medical claims; pc003_insurance_product_type_cd for pharmacy claims; dc003_insurance_product_type_cd for pharmacy claims

There are issues with product codes:

- Sometimes payers report different product codes for the same claim
- Sometimes payers do not report a product code for a claim
- Sometimes the product code reported for a claim does not match the product code for the member in the member month data

Options for addressing problematic product codes

- Data requesters can opt to use the product code reported in member months and not the product code reported in claims
- Data requesters can deduplicate problematic product codes and select the same product code for member month and claims data
- Data requesters can request that APAC deduplicate problematic product codes
 - APAC deduplicates member month product codes and links that information to claims. Product codes reported for claims are not used

Claim Line of Business (LOB)

The APAC vendor identifies line of business (LOB) for claims based in part on the claim product code and in part on information provided by APAC about payers. The vendor does not use the LOB identified in member month data for claim LOB. When member month and claims data are linked, sometimes a mismatch in LOB occurs.

Options for addressing more than one LOB for a claim

- Data requesters can opt to use the LOB reported in member months and not the LOB reported in claims
- Data requesters can deduplicate LOB in claims
- Data requesters can request that APAC deduplicate
 - APAC deduplicates member month LOB and links that information to claims. LOB for claims is not used

Coordination of Benefit claims (medical claims only)

When a person is covered by more than one payer or different plans with the same payer at the same time, each payer reports data to APAC with different member identifiers, claim identifiers, provider identifiers, paid amounts, allowed amounts etc., for the same visit. Payers are required to coordinate payment when there is more than one payer for a visit.

The primary payer is determined by payer line of business (Medicare, Medicaid, commercial). The commercial payer is always the primary payer when the other payer is Medicare or Medicaid. Medicare is always the primary payer when the other payer is Medicaid. When both payers are commercial, the primary payer is determined by the variable me206_primary_insurance_ind in the member month data. Medicaid is always the last payer.

Secondary or Coordination of Benefit (COB) medical claims in APAC are identified by payer reported mc038_cob_status. For unknown reasons Medicaid does not report mc038_cob_status for many claims. Data requesters can ask APAC to link Medicaid claims with commercial and Medicare claims and identify Medicaid COB claims.

There is no variable available in APAC that identifies primary and secondary claims (COB) linked claims. Primary claims can be linked to secondary payer COB claims by uniquepersonID, date, primary diagnosis code, procedure code and provider for medical claims. About 4% of total medical claims are COB claims annually.

From 9% to 39% of medical COB claims cannot be linked to a primary medical claim. These COB claims do not link to a primary claim because the primary claim is not reported to APAC. This occurs when the primary payer does not report data to APAC because they are ERISA, exempt or waived from reporting data or some other error.

An additional complication is that about 245,000 medical claims are reported both as a coordination of benefit claim and not as a coordination of benefit claim.

COB claims are significant for analyses.

- o When analysts count 'visits' COB claims linked to a primary claim should not count as a different 'visit' because the result is an overcount of visits (bias).
- o When analyst evaluate paid amounts primary payer reported member paid amounts should be recoded to zero and secondary (COB) paid amounts should be included. If primary claims are not recoded then the member paid amount will be overestimated (biased) whether COB claims are included or not. If COB claims are not included then the payer paid amount will be underestimated (bias).
- o COB claims not linked to a primary claim are useful because they provide utilization and cost information not provided by another payer
- Medicaid claims that are not identified as COB result in an overestimate of 'visits'
- O COB claims capture utilization and costs for each LOB (Medicare, Medicaid, commercial). Not including COB claims results in underestimate of utilization and cost by LOB (bias). Underestimate bias is most severe for Medicaid because Medicaid is always the last payer. An overestimate bias occurs for commercial payers because commercial is always the first payer.

Options for primary and secondary COB claims:

 Analysts can link claims with reported COB flag with primary payer claims and recode the member paid amount to zero for primary claims

- Analyst can link Medicaid claims not flagged COB with commercial and Medicare Advantage claims, but cannot link Medicaid claims not flagged COB with Medicare FFS (Part A and B) claims
- o Analysts can deduplicate a claim that is flagged COB and not COB
- Analysts can request APAC to identify Medicaid COB claims, primary and secondary payer linked claims, deduplicate claims reported COB and not COB and recode member paid to zero for primary care claims linked to a COB claim

Multiple providers submit claims for the same health care 'visit'

When a person has a health care 'visit,' different providers submit claims to payers for the different services provided. For example, a hospital facility, physicians, laboratory, imaging service and other providers will submit claims for a person with an inpatient hospital visit. To calculate the total cost of the inpatient hospital 'visit,' claims from the different providers should be included. Analysts can use the APAC grouper and/or concatenate/combine claims that occurred on the same day to construct a 'visit.'

Inpatient Hospital transfers

People can be discharged and admitted from one unit to another in the same hospital without any break in time. Multiple claims with different claim identifiers are reported for the transfers. Failure to aggregate will result in one hospital visit counting as two visits and the second visit may incorrectly be counted as a rehospitalization.

Additional Issues to consider for data requests

Claims with different values for the same variable

For unknown reasons, some claims have different values reported for the same variable. The result is the claim/claim lines are duplicated. The following are variables with different values sometimes reported for the same claim.

- Paid fee-for-service or managed care encounter (mc038_claim_status)
- Orphan claim status (orphan fl)
- Primary diagnosis code (mc041_principal_diagnosis_cd)
- Date of service (mc059 service start date)

Missing primary diagnosis

For unknown reasons, 4.6 million medical claims have no reported primary diagnosis. These claims cannot be grouped or analyzed by diagnosis code. The number of claims annually ranges from 65 thousand to 650 thousand.

Pharmacy claims and diagnoses

Pharmacy claims do not have diagnosis or procedure codes reported for the claim. Requesters may consider linking pharmacy claims to medical claims using uniquepersonID, prescribing provider identifier (dw_prescribing_provider_id) and dates to obtain associated diagnosis codes from medical claims.

Oregon resident and Me016_member_state

People enrolled in Medicare as reported by CMS and people with Medicaid coverage are Oregon residents regardless of reported address. People in APAC who are not Oregon residents are people with out-of-state addresses and commercial insurance. Annually, up to 4% of the people in APAC are not Oregon residents.

People with Medicare Advantage and no reported Oregon enrollment from CMS services are likely not Oregon residents. Analysts should consider excluding people with Medicare Advantage coverage who are not Oregon residents.

Claim lines

Medical and dental claims can include one or more claim lines. Some claim lines for the same claim occur more than once because different paid amounts were reported over time or different values were reported for other variables in the claim line over time. There is no claim line variable reported for pharmacy claims.

Member paid amounts

Payers report how much a member is expected to pay by claim for pharmacy claims and by claim line for medical and dental claims. Payers report different member paid amount variables. Some payers report one variable for member paid amount (mc067a_patient_paid_amt). Some payers report three different member paid amount variables: copayment (mc065_copay_amt), coinsurance (mc066_cosinsurance_amt), and deductible (mc067_deductible_amt). Some payers report all four member paid amounts.

For payers who report all four member paid amounts, the sum of mc065_copay_amt, mc066_cosinsurance_amt and mc067_deductible_amt sometimes equals the mc067a_patient_paid_amt and sometimes does not. To identify the correct amount member paid, the sum of mc065_copay_amt, mc066_cosinsurance_amt and mc067_deductible_amt must be compared to mc067a_patient_paid_amt and the largest amount must be selected.

Payer and member paid amounts

To avoid overcounting paid amounts analysts must isolate paid amount variables, claim identifier and claim line identifier from all other claims data variables. Otherwise the result will overestimate the paid amount (bias). Analysts can sum paid amounts by reported claim line number or for the claim.

Sample SQL code: Calculate paid amount by mc005_line_no:

```
With test as (
Select distinct
dw claim ID,
mc005_line_no,
mc063 paid amt,
mc065 copay amt,
mc066 cosinsurance amt,
mc067_deductible_amt,
mc067a patient paid amt
from medicalclaims data
),
Test2 as (
Select distinct
dw claim ID,
mc005_line_no,
mc065 copay amt,
mc066 cosinsurance amt,
mc067 deductible amt,
mc067a_patient_paid_amt
from test data
),
Patientpaiddedup as (
Select distinct
dw claim ID,
mc005 line no,
case
 when mc067a patient paid amt >
 coalesce(mc065 copay amt,0) + coalesce(mc066 cosinsurance amt,0) +
 coalesce(mc067 deductible amt,0) then mc067a patient paid amt
Else 0
End patientPaidALine,
 when patientPaidALine =0 then
```

```
coalesce(mc065 copay amt,0) + coalesce(mc066 cosinsurance amt,0) +
  coalesce(mc067 deductible amt,0)
  when mc067a patient paid amt > 0 then patientPaidALine
Else 0
End as patientPaidLine,
From test2
),
Patientpaidline as (
Select distinct
dw claim ID,
mc005 line no,
sum (patientPaidLine) as totalpatientPaidline
from Patientpaiddedup
group by dw claim ID, mc005 line no
),
Payerpaiddedup as (
Select distinct
dw claim ID,
mc005_line_no,
mc063_paid_amt
from test
),
Payerpaidline as (
Select distinct
dw claim ID,
mc005 line no,
sum(mc063 paid amt) as totalpayerpaidline
from Payerpaiddedup
group by dw_claim_ID, mc005_line_no
),
Paidamounttest as (
a.dw claim ID,
a.mc005_line_no,
b. totalpatientPaidline
c. totalpayerpaidline
from test a
join Patientpaidline b
on a.dw claim ID= b.dw claim ID and
a.mc005 line no= b.mc005 line no
join Payerpaidline c
on a.dw_claim_ID= c.dw_claim_ID and
a.mc005 line no= c.mc005 line no
Totalpaidbyline (
Select distinct
dw claim ID,
mc005 line no
sum(totalpatientPaidline + totalpayerpaidline) as totalpaidbyline
from Paidamounttest
group by group by dw_claim_ID, mc005_line no
)
Select distinct
a.dw claim ID,
a.mc005 line no,
a.totalpatientpaidline
```

a.totalpayerpaidline b.totalpaidbyline from paidamounttest a join totalpaidbyline b on a.dw_claim_ID= b.dw_claim_ID and a.mc005 line no= b.mc005 line no;

Zero dollar paid claims

Payers are required to report all claims including when the payer and member paid amount is zero dollars. Zero dollar paid claims occur when the insurer pays providers per member per month (capitation, managed care). Claims are paid, but the insurer does not pay per claim (fee-for-service), so does not report an amount paid. Zero dollar paid claims are not equally distributed by payer type. Medicaid accounts for more than half of total zero paid claims. Up to a third of all Medicaid claims are paid zero dollars. Analysts may consider imputation for zero dollar paid claims.

Zero dollar paid claims

4% to 9% of total claims

Medicare: 12% to 27% of total

zero paid claims

Medicaid: 61% to 82% of total

zero paid claims

Commercial: 4% to 17% of total

zero paid claims

2% to 3% of Medicare claims

12% to 34% of Medicaid claims

1% to 2% of commercial claims

Denied claims

Denied claims are not included in APAC data unless a data requester makes a specific request. Caution is warranted for analyzing denied medical claims because no reason is provided for denial and the claim does not include enough information to discern the reason for denial. Claims are denied for different reasons such as the member was not covered by the payer at the time the service was rendered; there was an error in the claim; the payer did not cover the rendered service; and other reasons. There is no definitive way to differentiate between these reasons in APAC data.

Providers correct and resubmit denied claims when possible and if the member and services are covered then the claim is paid. However, the resubmitted claim can have a different claim identifier than the denied claim. That means additional analysis is necessary to determine if a paid claim is the same as the denied claim.

- No reason is reported to APAC for denied medical and pharmacy claims
- Denied claims duplicate paid claims when the payer reports different claim identifiers for the denied and paid claim

Claim groupers in APAC

A claim grouper is a software program or algorithm that groups claims or claim lines by diagnosis code(s) or procedure codes or national drug codes into clinical categories, place of service, drug classes and etc. Claim groupers in APAC that are available for request include CCSR, BETOS, DRG, MDC, CCS category and NDC class. Claim groupers in APAC that are not available for request include AHFS and ACG because they are proprietary and sharing is not permitted. Groupers are useful for identifying a study participants/group and for analyzing grouped claims It is an option for minimizing the risk of reidentification of people.

- Data requesters can identify a participant/study group based on the groupers and then request claims and member month data for the study group
- Data requesters can ask APAC to build data files based on the groupers
- Proprietary data variables cannot be shared

Demographic data

Demographics are part of member month data and can be linked to claims data by member ID and/or uniquepersonID. Descriptive data about Oregon race ethnicity data from the Census is available in the DUG Excel spreadsheet. Demographic data includes:

- Gender or sex (unknown if payer reported data is sex or gender)
- Rarest race, ethnicity group (one value per person)
- race (all reported races for a person)
- ethnicity (all reported ethnicities for a person)
- primary language
- age on date of service (from claims data)
- age during month
- age group on date of service (from claims data)
- age group during month

Rarest race ethnicity group

APAC collaborated with the OHA Equity and Inclusion Division to identify a single race ethnic group for each person based on the distribution of people in Oregon from Census data. Race ethnicity group is assigned based on the rarest race ethnicity reported for a person across payers and data years. The rarest race, ethnicity group for Oregon from rarest to least rare:

- Native Hawaiian or Pacific Islander (HAPI)
- Black or African American (BAA)
- American Indian or Alaskan Native (AIAN)
- Asian
- Hispanic or Latino
- White
- Other

Provider Data

Unique Provider Identifier. The vendor assigns a unique provider identifier across payers, plans and years (dw_provider_ID) for attending, pharmacy, dental and billing providers. The dw_provider_ID is based on the national provider identifier (NPI), drug enforcement agency identifier (DEA), state license number, tax identification number (TIN), address and names reported by payers.

There are some issues with the unique provider identifier that make it difficult to accurately identify providers. Not all payers report NPI, DEA, state license number or TIN. Some payers report the same NPI for people and organizations with

Rarest race ethnicity (RE) 2022

HAPI: 0.4% BAA: 3% AIAN: 1% Asian: 2% Hispanic: 7% White: 45% Other: 1%

No RE reported: 40%

Medicare:

HAPI: 0.1% BAA: 4% AIAN: 1% Asian: 2% Hispanic: 2% White: 87% Other: 1%

No RE reported:3%

Medicaid:

HAPI: 1% BAA: 4% AIAN: 2% Asian: 3% Hispanic: 16% White: 54%

Other: 0.4%

No RE reported:18%

Commercial:

HAPI: 0.4% BAA: 3% AIAN: 1% Asian: 2% Hispanic: 6% White: 37% Other: 1%

No RE reported: 50%

different names and addresses. Some unique provider identifiers are for clinics or facilities rather than people. Caution is warranted for using the vendor generated unique provider identifier (dw provider ID).

Primary keys for provider data:

- dw provider ID (provider table or view)
- dw rendering provider ID (medical & dental claims)
- dw_billing_provider_ID (medical & dental claims)
- dw_pharmacy_ID (pharmacy claims)
- dw prescribing provider ID (pharmacy claims)

APAC data limitations

APAC is a robust source of administrative health care data that has limitations.

- Not all payers are required to report data to APAC
- Claims and member month data are not reported for people who are uninsured. See Uninsurance in Oregon for additional information
- Payers who submit data to APAC collect and store data using varying data systems, collection methods and definitions. APAC adopted a standardized process for payer submitted data, but there is no uniform method for how payers collect data
- There are exceptions, anomalies, and error in APAC due to the breadth and complexity of payers' internal data systems and the differences in their data collection practices. APAC allows a 1%-2% error threshold for most reported variables

Medicaid data reported to APAC differs from the original data

Caution is warranted when analyzing Medicaid claims and eligibility data in APAC because it differs from the original Medicaid Management Information System (MMIS) data in a variety of ways that are significant.

Medicaid member month data is modified for APAC. Unlike other payers Medicaid eligibility is not restricted to the first day of the month; restricted to a single product code; or limited to either fee-for-service or managed care.

Medicaid members can move from one eligibility category or benefit program to another during the same month. Medicaid members can also change their Coordinated Care Organization (CCO) or move from a CCO to fee-for-service (FFS) and vice versa during the same month.

Medicaid member month data is assigned based on the last day of the month.

- Any Medicaid member eligible on the last day of the month is reported to APAC as a full month of eligibility
- Members are assigned to the CCO they are enrolled in on the last day of the month
- If a member is not enrolled in a CCO on the last day of the month they are assigned fee-for-service (FFS)
- The FFS or CCO status reported in Medicaid claims and can differ from member month data due to the assignment based on the last day of the month

Medicaid paid amount limitations

- Some medical services and pharmaceuticals are excluded from CCO capitated payment arrangement and are paid fee-for-service (FFS). This means Medicaid people in CCO are also FFS. Because CCO and FFS status for member month is assigned based on the last day of the month, Medicaid claims and monthly member data CCO and FFS status can be different
- Medicaid does not require CCOs with sub-capitation payment arrangements to report the amount paid to a provider. CCOs frequently report paid claims as zero paid.

Medicaid eligibility data limitations

- Program eligibility codes (PERC) are not reported for every Medicaid member for every month. Because of this it is not possible to validly, reliably identify:
 - Medicaid members with limited benefits
 - Medical assistance members that are not covered by Medicaid
 - People who are eligible for Medicaid except they are not in the country legally
 - ACA expansion members
 - Standard Medicaid members
 - Oregon specific expansion populations (1115 waiver)
 - Members with Medicaid coverage extended for a period of time i.e., post-partum; post temporary assistance for needy families
 - Other PERC categories (see list of PERC codes in the APAC data Dictionary)

Medicaid data in APAC was not designed to support valid analyses, comparison of FFS and CCO nor Program Eligibility Categories (PERC) claims and enrollment comparisons. Analysts interested in comparing CCO, FFS and PERC categories should request Medicaid data from the Medicaid program.