Oregon All Payer All Claims Database (APAC)

Data User Guide
2011-2020 Claims & Insurance Coverage

Data from HSRI Release 7

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About this guide

The purpose of the APAC Data User Guide is to help data requesters to understand the structure, function and limitations of APAC data and appropriate use. In addition to background information about the APAC program and data, the Data User Guide includes summary tables that display counts of people with insurance, claims for health care services and expenditures. The data tables provide context and reference points for data analyses.

For data requests, OHA determines the following before approval:

- Appropriate use of the requested APAC data
- Minimum necessary data for one specific project
- APAC data disclosure and subsequent use complies with HIPAA
- APAC data is stored privately and securely

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

- APAC Data Request Fact Sheet
- APAC data request applications: Public Use, Limited & Oregon state agencies
- 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 Death Certificate Linked Data Summary
- Request APAC and Death Certificate Linked Data
- Improving 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 with APAC staff please contact OHA at APAC.Admin@dhsoha.state.or.us.

All Payer All Claims data executive summary

The All Payer All Claims (APAC) database provides access to timely, reliable administrative health care data. This data makes it possible for state agencies, researchers and other analysts to evaluate health care access, utilization and costs in Oregon. This information helps improve quality of care, reduce costs and promote transparency to consumers.

APAC data available for request includes medical, pharmacy and dental claims, demographic data, monthly insurance coverage or eligibility data, and provider information reported by commercial insurers, Medicaid, and Medicare for 3.5 to 4 million people annually, representing over 95% of Oregonian residents. About 1% of the people in APAC are not Oregon residents.

Some data that is collected by the APAC program cannot be disclosed to data requesters due to restrictions set forth in federal law and limitations in the state's data use agreements with other entities. For example, claims pertaining to substance use disorder (SUD) treatment must be reported to APAC but cannot be disclosed to external data requesters under 42 CFR Part 2. Similarly, Medicare data reported by Centers for Medicare & Medicaid Services (CMS), which includes ~7% of all Medicare members, are not available to external data requesters. Some Oregon state agencies may request SUD treatment and CMS data for specific purposes.

APAC began collecting data in 2011. This has allowed OHA to identify trends in insurance coverage, health care spending and utilization rates of health services for the Oregon population. Below are a few highlights.

From 2011 to 2020, there was a high continuity of insurance coverage and service utilization. For example:

- Approximately 80% of the reported population has a health care claim annually.
- Approximately 80% of the reported population was also reflected in APAC data the prior year.
- Approximately 40% of the reported population was covered by more than one insurance type during the same year or at the same time (either Medicare, Medicaid, and/or commercial).

From 2011 to 2022, trends in enrollment varied by insurance type. For example:

- Medicaid coverage grew 66% from 2011 to 2020, due in large part to the Affordable Care Act and Medicaid expansion in 2014.
- Commercial coverage declined 25% by 2016 then grew 58% by 2020.

From 2011 to 2022, there was disproportionate payment of costs by insurance type. For example:

- Insurers and members together paid about $25 billion for care in 2019.
- Medicare paid 44% of total costs, but only covered about a quarter of the people.
- Commercial insurers paid 37% of total costs, but covered more than half of the people.
- Medicaid paid about a 20% of total costs, but covered about a third of the people.

2011-2020 APAC summary data

See the following pages for these summary data tables.

- Table 1: People in APAC
- Table 2. Length and pattern of insurance coverage
- Table 3. Type of health care insurance
- Table 4. Claims distribution and characteristics
- Table 5. Total claims paid and distribution by payer and person
- Table 6a. Distribution of claims paid by claim type
- Table 6b. Distribution of zero dollar paid claims by claim type
- Table 7a. Distribution of claims paid by insurance type
- Table 7b. Distribution of zero dollar paid claims by insurance type

APAC summary data tables 2011-2020

Table 1. People in APAC

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Oregon (OR) population	3.86M	3.88M	3.92M	3.96M	4.01M	4.08M	4.14M	4.20M	4.24M	4.27M
People in APAC	3.54M	3.55M	3.61M	3.97M	3.90M	3.73M	3.77M	3.80M	4.03M	4.05M
OR residents in APAC	88%	88%	88%	96%	97%	91%	90%	90%	95%	94%
Non-OR residents in APAC	4%	4%	4%	4%	0%	1%	1%	1%	1%	1%

Table 2. Length and pattern of insurance coverage

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Medically insured 12 months	73%	74%	75%	73%	74%	70%	70%	71%	68%	62%
Medically insured 6-11 months	11%	11%	10%	14%	11%	14%	13%	11%	10%	8%
People with dental coverage	20%	21%	20%	27%	31%	33%	32%	32%	65%	69%
Only pharmacy insurance	8%	8%	7%	6%	8%	8%	9%	10%	11%	19%
People in APAC current and prior year		84%	83%	78%	83%	83%	82%	81%	77%	69%

Table 3. Type of health care insurance[1]

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Medicare[2]	**21%**	**22%**	**22%**	**21%**	**21%**	**22%**	**23%**	**24%**	**23%**	**17%**
Only commercial Medicare	41%	41%	43%	45%	42%	43%	43%	42%	44%	100%
Only CMS Medicare	43%	42%	41%	40%	35%	33%	29%	31%	30%	
Medicaid	**23%**	**23%**	**23%**	**31%**	**35%**	**38%**	**36%**	**34%**	**32%**	**33%**
Commercial	**74%**	**74%**	**69%**	**65%**	**60%**	**53%**	**53%**	**55%**	**64%**	**77%**
Self-insured	20%	20%	21%	20%	15%	9%	8%	9%	9%	9%
PEBB/OEBB	8%	8%	8%	7%	7%	8%	8%	8%	8%	7%
Self-Insured not PEBB/OEBB	17%	17%	18%	18%	13%	6%	6%	6%	6%	6%
More than one type of insurance	30%	31%	31%	37%	40%	43%	42%	41%	40%	36%

[1] Center for Medicare and Medicaid Services (CMS) data is incomplete for 2019 and not yet available for 2020

Table 4. Claims distribution and characteristics

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total number of claims[3]	75.2M	78.2M	72.6M	86.4M	89.3M	92.4M	94.3M	99.8M	104.8M	94.6M
People in APAC with a claim	77%	78%	78%	78%	79%	79%	79%	80%	80%	76%
Claim type										
Medical	59%	59%	60%	55%	53%	54%	55%	55%	55%	45%
Pharmacy	41%	41%	40%	45%	47%	46%	45%	45%	43%	53%
Dental[4]									2%	2%
Payment type										
Claims paid Fee-For-Service	82%	80%	80%	73%	70%	66%	66%	65%	66%	64%
Coordination of benefit claims	8%	8%	9%	6%	3%	3%	3%	3%	3%	3%
Orphan claims[5]	1%	2%	1%	2%	1%	1%	0%	1%	1%	1%
Substance use disorder claims[6]	2%	2%	2%	2%	2%	3%	3%	3%	4%	4%

Table 5. Total claims paid and distribution by payer and person

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total paid (payer and person)	$15.8B	$16.9B	$16.3B	$18.6B	$19B	$19.6B	$21B	$22.3B	$24.1B	$20.5B
Payer paid										
Total payer paid	$13.7B	$14.8B	$14.2B	$16.3B	$16.8B	$17.4B	$18.7B	$19.9B	$21.4B	$18.4B
% of total	84%	87%	87%	87%	88%	88%	89%	89%	89%	89%
Person paid										
Total person paid	$2.1B	$2.2B	$2.1B	$2.3B	$2.2B	$2.2B	$2.3B	$2.4B	$2.7B	$2.1B
% of total	16%	13%	13%	13%	12%	12%	11%	11%	11%	11%
Total zero dollar paid claims[7]	5.85M	2.14M	2.26M	2.93M	3.21M	3.98M	3.40M	3.852M	4.18M	4.03M
Total imputation for zero paid[8]	$1.3B	$664M	$716M	$930M	$977M	$1.1B	$982M	$1.1B	$1.1B	$1.3B
Total paid (payer and person) with imputation	**$17B**	**$17.6B**	**$17B**	**$19.5B**	**$20B**	**$20.7B**	**$21.9B**	**$23.4B**	**$25.3B**	**$21.8B**

[3] Claims include paid fee-for-service and 'paid' capitated encounter claims. Denied claims are not included

[4] Dental data reporting to APAC began in 2019

[5] Claims without a linked eligibility month

[6] Substance use disorder data not available for request except by Oregon state agencies

[7] All claim lines and not coordination of benefit

[8] Mean imputation for zero paid claims by type of health insurance and by claim type

Table 6a. Distribution of claims paid[9] by claim type

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total paid (payer and person)										
Medical	88%	88%	88%	85%	82%	81%	81%	80%	78%	68%
Pharmacy	12%	12%	12%	15%	18%	19%	19%	20%	20%	28%
Dental									2%	4%
Payer paid										
% of total paid	84%	87%	87%	87%	88%	88%	89%	89%	89%	89%
Medical payer paid	89%	89%	88%	85%	82%	81%	82%	80%	78%	69%
Pharmacy payer paid	11%	11%	12%	15%	18%	19%	18%	20%	20%	28%
Dental payer paid									2%	3%
Person paid										
% of total paid	16%	13%	13%	13%	12%	12%	11%	11%	11%	11%
Medical person paid	84%	85%	85%	80%	80%	78%	79%	78%	73%	54%
Pharmacy person paid	16%	15%	15%	20%	20%	22%	21%	22%	20%	30%
Dental person paid									7%	16%

Table 6b. Distribution of zero dollar paid claims[10] by claim type

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Medical	67%	92%	93%	97%	99%	88%	98%	95%	94%	88%
Pharmacy	33%	8%	7%	3%	1%	12%	2%	5%	6%	3%
Dental									1%	10%

[9] Claims include paid fee-for-service and ‘paid’ capitated encounter claims. Denied claims are not included
[10] All claim lines and not coordination of benefit

Table 7a. Distribution of claims paid[11] by insurance type[12]

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total paid (payer and person)										
Medicare[13]	36%	35%	37%	34%	39%	44%	45%	45%	44%	30%
Medicaid	10%	13%	14%	17%	19%	20%	20%	20%	20%	25%
Commercial	54%	52%	50%	49%	42%	36%	35%	35%	37%	45%
Payer paid										
% of total paid	87%	87%	87%	88%	88%	89%	89%	89%	89%	90%
Medicare payer paid	36%	35%	37%	34%	38%	43%	44%	44%	43%	30%
Medicaid payer paid	12%	15%	16%	20%	22%	23%	23%	23%	22%	28%
Commercial payer paid	52%	51%	48%	47%	40%	34%	33%	33%	35%	42%
Person paid										
% of total paid	13%	13%	13%	12%	12%	11%	11%	11%	11%	10%
Medicare person paid	35%	35%	37%	37%	42%	50%	51%	52%	49%	30%
Medicaid person paid	0.02%	0.02%	0.02%	0.04%	0.03%	0.03%	0%	0%	0%	0%
Commercial person paid	65%	65%	63%	63%	58%	50%	49%	48%	51%	70%

Table 7b. Distribution of zero dollar paid claims[14] by insurance type[11]

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
By insurance type										
Medicare	10%	34%	31%	22%	21%	19%	23%	18%	18%	4%
Medicaid	85%	50%	58%	68%	71%	74%	70%	72%	72%	85%
Commercial	5%	16%	11%	11%	8%	7%	7%	9%	11%	10%

[11] Claims include paid fee-for-service and 'paid' capitated encounter claims. Denied claims are not included

[12] Center for Medicare and Medicaid (CMS) data is incomplete for 2019 and not available for 2020.

[13] CMS Medicare data not available for request except by Oregon state agencies

[14] All claim lines and not coordination of benefit

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 in the Data Submission Instruction Memo. Data collection for APAC began in March 2011.

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 updated data for the prior three quarters. Data are updated for a variety of reasons:

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

Claims data submissions are based on the date a medical service incurred while eligibility data submission is based on the effective date of enrollment. CMS reports claims data based on the paid date. See Appendix A-G and 1 & 2 for detailed information regarding data currently submitted by reporters.

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 2020 were released in early 2022. This lag time helps ensure that the data are as complete and reliable as possible.

Data management. OHA maintains oversight and management of APAC, and contracts with a data 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. To ensure reliability and validity, the data 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 previously reported data and identifies any anomalies and significant deviations from trends. 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 protected health information (PHI), several layers of protections are implemented to ensure the privacy and security of the data from intake to release. All data are encrypted during transmission and storage and are housed in a secure data center. Access to APAC data is limited to authorized staff.

Requests for APAC data are subject to the standards and regulations of the Health Insurance Portability and Accountability Act of 1996 (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 vendor solution is transparent with no proprietary methodologies. Please note, the new vendor methodology for assigning a unique person identifier across payers and years differs from the previous vendor. Data requesters who received APAC data prior to January 2021 will need replacement data should they decide to request additional data elements or years of data. Proprietary data elements from the previous vender are no longer available. The APAC team is working with the new vendor to address data anomalies and quality issues. We anticipate an iterative process and improvements to APAC data with each data release.

APAC data availability

APAC includes

- Medical, pharmacy and dental claims data, including:
  - Claim status or type
    - Paid fee-for-service, managed or coordinated care encounters, denied, orphan, reversed and coordination of benefit
  - Payments from commercial insurers, Medicaid and Medicare
  - Expected payments from members copayment, coinsurance, deductible or patient paid
  - Diagnosis and procedure codes
  - Bill type, place of service and revenue codes
  - Line of business (LOB)-Medicare, Medicare and commercial

- Monthly member eligibility data
  - Demographics, LOB, relationship, product codes and primary insurance

- Member demographics
  - Gender, age, race, ethnicity and primary language

- Member demographics (identified data)
  - Date of birth, date of death, address, zip code and county

- Provider data
  - Attending, pharmacy and billing providers
  - National Provider Identifier, names and work location

- Alternative payment methodologies such as population-based payments, capitation per member per month and value-based payments (VBPs)

- Medicare data reported by commercial insurers (Medicare Advantage and Stand-Alone Part D)

- Data submitted by mandatory and other voluntary 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
  Medicaid
  Medicare data from Centers for Medicare & Medicaid Services

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
  - Self-insured plans exempt from APAC
  - Stop loss plans
  - Student health plans
  - Federal Employee Health Benefit plans
  - Indian Health Service
  - Military Health
  - Tricare
  - Veteran Affairs
  - Corrections (federal, state, county or 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

APAC data not available for request

- CMS-reported Medicare claims data are not available for request except by Oregon State agencies per OHA's data use agreement with CMS
- Substance use disorder claims are not available for data request due to federal restrictions. The algorithm used to identify substance abuse claims is available in the APAC data dictionary

- The names of commercial payers and identifiers are not available by request in combination with amount paid, allowed or billed
- Billed premium data in APAC is not available for request at this time, but summary data is available to view
- Requesters interested in only Medicaid data need to request data from the Medicaid program directly at OHA.HealthAnalyticsRequest@state.or.us

APAC data that may be available with restrictions

- Requests for identified data require detailed justification, higher security measures and are subject to greater scrutiny by the DRC and DOJ. Identified data includes, but is not limited to:
    - Date of birth
    - Zip code
    - County
    - Names
    - Addresses
- HIPAA permits release of identified and identifiable PHI data for public health surveillance by Oregon Public Health, but not for research or publication

APAC data request types

APAC offers two data products, public use files and limited data sets. These data products vary in level of detail, requirements, cost and anticipated timeframe (see our APAC Data Request Fact Sheet for more information).

Public use files

There are four different annual public use files (PUF) available for request: medical claims, pharmacy claims, medical member month data and pharmacy member month data.

Denied claims, orphan claims, substance use disorder claims and CMS-reported Medicare data are excluded from all PUFs. See the PUF data dictionary for a list of the data elements. Data requesters receive all data elements for each requested PUF.

An urban/rural flag is provided. County and zip code data elements are not available to ensure compliance with HIPAA. PUF data may not be linked to external data. PUF data requests do not require IRB approval.

Limited data sets

Limited data sets offer a higher level of detail than PUF data and may contain PHI. Limited data may be used to inform activities related to health care operations, treatment, payment, public health, or research defined in HIPAA. There are more than 300 data elements available for request.

Requests generally require an Institutional Review Board (IRB) approval prior to submitting an APAC data request. Requests require approval from the Data Review Committee (DRC) and may require approval from and the Oregon Department of Justice (DOJ).

To ensure compliance with HIPAA, only the minimum necessary data elements and data years will be approved and provided. For example:

- We will not provide all pharmacy claims data for a project that will only analyze a specific pharmaceutical.
- We will not provide multiple years of data for a project that does not conduct a longitudinal analysis.

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. **OHA prefers to conduct APAC data linking in-house and share only encrypted identifiers with data requesters.**

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.

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)

Identifiers in APAC member month and claims data

Member identifier. The vendor creates a member identifier (dw_member_ID) based on the member identifier reported for each member by payer and plan. A person has multiple dw_member_IDs when they are insured by the same payer in different plans over time. A person also has multiple dw_member_IDs when they are insured by different payers, either over time or at the same time. Member identifiers are present in claims, member month and demographic data tables.

Unique person identifier. The vendor assigns a unique person identifier across payers and data years based on the payer reported member identifier, subscriber name, date of birth and address and by member first name, last name, date of birth and address. The vendor method assigns more than one identifier for about 3 million people. OHA continues to work with the vendor to identify a unique identifier for each person so that a person's enrollment and claims can be analyzed longitudinally across payers and data years. As an interim solution, OHA developed a unique person identifier based on the first four letters of the first name, first four letters of the last name and date of birth. Data requesters receive the OHA uniquepersonID and a crosswalk to the vendor identifier. Unique person identifiers are present in claims, member month and demographic data tables.

Eligibility or member month data view

Payers report monthly eligibility data for members by plan. See the APAC Data Dictionary for a list of data elements for the member month data. A member has up to 12 monthly eligibility segments or rows of data per year per plan by payer.

Primary keys for member month eligibility include:

- dw_member_ID
- me003_product_code
- month_eligiblity
- year_eligibility

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

Tips for eligibility or member month data

PBMs. Most Pharmacy Benefit Manager Plans (PBMs) report either pharmacy benefits only or Medicare Part D as the product code for member eligibility and claims. This is because most PBMs do not have access to member medical plan eligibility data. PBM members may have other coverage and those payers report eligibility and claims data for members independent of PBMs. Requesters may need to deduplicate monthly eligibility for PBM members to avoid counting them twice in member month calculations and analyses.

Pharmacy only coverage. There are no pharmacy only plans in Oregon. People with pharmacy coverage have medical coverage. However, that medical coverage may not be reported to APAC, or the vendor was not able to link records. Some Oregon residents enrolled in stand-alone Medicare Part D commercial plans do not have medical member month data in APAC. Requesters may consider imputing medical member months for people with pharmacy, but no medical coverage.

Relationship. Medicare does not enroll dependents and spouses. However, the relationship data reported by some commercial Medicare Advantage and Stand-Alone Part D plans includes subscriber, dependent and spouse. The relationship variable for Medicare members should not be used in analyses. Data users may consider recoding relationship for Medicare members or counting all Medicare members as self or subscriber.

Claims data views

Medical, pharmacy and dental claims are reported by payer by plan for members. See the APAC Data Dictionary 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.

Tips for claims data
Linking. To link with eligibility or member month data, data users need to convert or transform the following from one date variable to two variables- month and year: start date for medical claims; fill date for pharmacy claims; and start date for dental claims.

Claims and member months: People with no claims are not present in the medical, pharmacy or dental claims data. Monthly member data includes people if they did or did not have a claim. Monthly member data is the APAC population or denominator.

Claim line. Medical and dental claims may include one or more lines or rows of data. The data user must aggregate data across claim lines to calculate the amount paid by the payer plan. Pharmacy claims have one row of data in APAC.

Coordination of benefit (COB) claims. When people are enrolled in more than one payer plan at the same time, the primary payer pays a claim first. Subsequent payers then pay any contractually obligated amount that was not paid by the primary payer. Subsequent payer payments are reported as coordination of benefit claims (COB) and are flagged in the medical claims data view. Currently payers do not report COB claims for dental or pharmacy claims.

Tips for claims data (cont.)
Claims are not visits. Multiple payers may pay for a single service for the same person on the same date. In these instances, there are unique claim identifiers and claim lines from each payer (called COB claims). The data user must aggregate data across claim lines and payers to count unique visits, and calculate the total paid for that visit.

Orphan claims. Claims without a linked eligibility month are considered “orphan claims.” Orphan claims occur when there is a grace period to pay a premium. During this grace period, monthly eligibility is reported. However, the monthly eligibility is corrected and removed the next quarter if the premium was not paid. Payers may or may not recoup payments for claims during this grace period for people who are later removed.

Zero dollar paid claims. Payers report claims even when the payer and member paid zero dollars. Zero dollar paid claims occur for both fee-for-service and managed care payment arrangements. From 2011 to 2020, the number of zero dollar paid claims in APAC (excluding COB claims and where the allowed or charged amount was >$0) ranged from 2.1 to 5.9 million claims annually. These zero dollar paid claims are not equally distributed by payer type. Medicaid accounted for about 70% of zero dollar paid claims annually. About 10% all Medicaid claims were paid zero dollars, compared to 2% of Medicare claims and 1% of commercial claims. Data requesters may consider imputation for zero dollar paid claims.

Pharmacy claims. Pharmacy claims do not have diagnosis, procedure or modifier codes associated with the claim. Requesters may consider linking pharmacy claims to medical claims using uniquepersonID. Data users will need dates of service to obtain associated diagnosis codes from medical claims.

Deduplicate hospital transfers. Data users should consider deduplicating or aggregating inpatient hospitalization data. People can be discharged and admitted from one unit to another in the same hospital, without any break in time. Failure to aggregate will result in one hospital visit counting as two visits, and the second visit may incorrectly be counted as rehospitalization.

Tips for claims data (cont.)
Denied claims. Denied claims are not included in APAC data requests unless a data requester makes a specific request. Caution is needed with denied claims, because they may duplicate paid claims and there is no mechanism for deduplication. Reasons for denial are not provided. Claims are denied for different reasons including, but not limited: the member was not covered by the payer at the time the service was rendered; there was an error in the claim; or the payer did not cover the rendered service.

Demographic data

Payers submit member demographic variables each quarter. Member month data include gender, race, ethnicity and primary language.

- For claims data (medical, pharmacy and dental), the vendor calculates age and age group on date of service
- For member month data, the vendor calculates age and age group at the start of each month
- Gender is available for claims (medical, pharmacy and dental) and member month data. Currently reported values include male, female and unknown
- Race and ethnicity data are available in separate tables or views
  - One view has all the races and ethnicities reported by payer and plan for each member across all years. This mirrors the member month data
  - In a second view, the vendor identifies the rarest race ethnicity across all years for each member (dw_member_ID) based on an algorithm created by OHA
  - In a third view, the vendor identifies the rarest race ethnicity for each person (dw_person_ID) based on the algorithm

Primary keys for demographic data include:

- UID for demographic data for member month or eligibility data
- DW_member_ID for the latest quarterly demographic data
- DW_person_ID for demographic data by person across payers, plans and data years

Required footnote for publishing APAC race, ethnicity and language data. Race, ethnicity and language data are missing for most people in APAC. Payers are not required to correct, update or resubmit quarterly data when race, ethnicity, and language data are mostly missing or unknown (for more information see Limitation: Missing demographic data in APAC).

Due to these limitations, APAC race, ethnicity and primary language data does not robustly represent the Oregon population or members of APAC. Therefore, we require all data requesters using these fields to include the following footnote in their findings and publications:

> Oregon All Payer All Claims (APAC) data for race, ethnicity and primary language are poorly reported by commercial payers as these data are not required for commercial transactions. Therefore, most members in APAC have race reported as unknown or null. The majority of known race, ethnicity and primary language data comes from public (Medicaid) and Medicare Advantage payers. Any analysis of APAC race, ethnicity and primary language data cannot be reported as representative of members in APAC. For more details, see metadata in the APAC Data User Guide.

This footnote may be modified to better match your project's description, but changes **must be approved by APAC prior** to use or publication. If you have questions about the required footnote or data limitations, please contact us at APAC.Admin@dhsoha.state.or.us.

Provider data view

Unique Provider Identifier. The vendor assigns a unique provider identifier across payers, plans and years (dw_provider_ID) to attending, pharmacy, dental and billing providers. This 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. Not all payers report NPI, DEA, state license number or TIN. Some payers report the same NPI for people and organizations with different names and addresses.

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)

Tips for provider data
Providers, not individuals. Not all providers are individuals. Some providers are clinics or facilities.

dw_provider_ID. Caution is needed when using the vendor generated unique provider identifier (dw_provider_ID). Data users may consider creating their own unique provider identifier based on the detailed provider data in APAC.

APAC data limitations

APAC is a robust source of administrative health care data but has gaps and limitations. For example, APAC does not contain claims or eligibility data for between 3% and 12% of the Oregon population. Not all payers are required to report data to APAC, and some people do not have insurance.

Payers who submit data to APAC collect and store data using varying data systems, collection methods and definitions. OHA has adopted rules and a standardized process for how payers submit data to APAC. However, 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.

Medicaid reported data to APAC

Medicaid member month data is modified for APAC. Unlike other payers, Medicaid eligibility is not restricted to the first day of the month; 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. Additionally, 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 as FFS.

On the other hand, Medicaid claims are individually assigned by the CCO responsible or FFS. This is unlike member month data, which is based on eligibility on the last day of the month. Some medical services and pharmaceuticals are excluded from CCO coverage and thus paid FFS. As such, claims for Medicaid members may be paid on a FFS basis, even while enrolled in a CCO.

Medicaid does not require CCOs with sub-capitation payment arrangements to report the amount paid to a provider. CCOs frequently report paid claims to Medicaid as zero or amounts less than a dollar. Subsequently, Medicaid reports these claims as no or low dollar payments to APAC.

Caution is needed when using Medicaid claims and eligibility data, as it differs from Medicaid Management Information System (MMIS) data. Data users should consider contacting the APAC team for consultation prior to requesting Medicaid data.

Missing demographic data in APAC

As stated above, race, ethnicity and language data are missing for most people in APAC. For the people in APAC:

- 55% of race/ethnicity is missing or unknown
- 50% of primary spoken language is missing or unknown

Additionally, race/ethnicity data for people in APAC varies by payer type. For people with a reported race/ethnicity in APAC:

- Medicaid reported race/ethnicity data for 60%
- CMS reported race/ethnicity data for 30%
- Commercial insurers reported race/ethnicity data for 29%

Below is a summary table of missing or unknown rates of race/ethnicity by insurance type.

Table 8a. Race/ethnicity missing or unknown by insurance type 2011-2020

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Medicare	23%	22%	22%	22%	18%	18%	17%	16%	16%	23%
Medicaid	19%	20%	21%	21%	22%	25%	29%	32%	31%	32%
Commercial	58%	58%	62%	61%	59%	61%	62%	62%	60%	57%

The summary table on the following page outlines the race/ethnicity data available for people in APAC.

Table 8b. APAC summary race/ethnicity data 2011-2020[15]

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Native Hawaiian or Pacific Islander	0.2%	0.2%	0.2%	0.2%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%
Black or African American	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
American Indian or Native Alaskan	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Asian	1%	1%	1%	1%	2%	2%	2%	2%	2%	2%
Hispanic or Latino	5%	5%	5%	5%	6%	6%	5%	5%	5%	5%
White	38%	38%	38%	39%	40%	41%	41%	40%	38%	35%
Other	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Missing/unknown	50%	49%	50%	48%	45%	44%	45%	46%	48%	51%

For context, Census race and ethnicity data of the Oregon population is provided below. The Census reports race and ethnicity as separate data elements. Additionally, the Census uses different methodology than APAC for assigning race and ethnicity. Therefore, race and ethnicity data in APAC is not directly comparable to Census data.

Table 8c. Census data: Oregon population race/ethnicity 2011-2020

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Native Hawaiian or Pacific Islander (alone or in combination)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Black or African American (alone or in combination)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
American Indian or Native Alaskan (alone or in combination)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Asian (alone or in combination)	5%	5%	5%	6%	6%	6%	6%	6%	6%	6%
Hispanic or Latino (any race)	12%	12%	12%	13%	13%	13%	13%	13%	13%	13%
White (alone or in combination)	88%	89%	90%	89%	90%	90%	89%	88%	88%	8%
Other (alone or in combination)	5%	4%	3%	4%	3%	3%	4%	4%	4%	4%
White alone not Hispanic	78%	78%	78%	77%	77%	77%	76%	75%	75%	75%

[15] Ordered from rarest to least rare race ethnicity (except other and no race or ethnicity reported). One race ethnicity identified for each person. Rarest race ethnicity algorithm available in APAC Data Dictionary

HEALTH POLICY AND ANALYTICS
All Payers All Claims (APAC)
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