ONPOINT Health Data

Vermont Health Care Uniform Reporting and Evaluation System (VHCURES)

Public-Use File (PUF) User Guide

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Introducing the Public-Use File

The Vermont Health Care Uniform Reporting and Evaluation System (VHCURES) is the state's all-payer claims database (APCD) – a valuable resource for researchers and the public that collects health care-related eligibility and claims data for Vermont residents. Under state statute, the Vermont Green Mountain Care Board (GMCB) oversees VHCURES to support an array of purposes, including: (1) determining the capacity and distribution of existing state resources; (2) identifying health care needs and informing health care policy; (3) evaluating the effectiveness of intervention programs for improving patient outcomes; (4) comparing costs between various treatment settings and approaches; (5) providing information to consumers and purchasers of health care; and (6) improving the quality and affordability of patient health care and health care coverage. As part of this important work, the GMCB has authorized the creation of a public-use file (PUF) that features fully de-identified VHCURES data for general public access and use.

Identifying the Data Included in the Public-Use File (PUF)

The VHCURES PUF offers summarized information related to health care claims for high-level demographic stratifications. Specifically, the PUF includes information related to the following populations:

- Vermont residents under the age of 65 years
- Members whose primary insurance coverage was provided by commercial or Medicaid insurance (i.e., members with Medicare are excluded)
- Members who had insurance coverage and any reported services during the included reporting period(s)

Reporting periods – typically either a calendar year (CY) or rolling year (RY) – for the currently available PUFs are detailed in the following table, which cites both "incurred" and "paid" dates. An "incurred" date is the date on which the actual medical service was provided, the prescription was filled, etc. A "paid" date is the date on which a bill for payment – either the original bill or an adjustment to the original bill (see below for more detail) – was submitted.

PUF #	Reporting Period	Incurred/Paid Start Date	Incurred End Date	Paid (Run-Out) End Date
1	CY16	1/1/2016	12/31/2016	6/30/2017
2	CY17	1/1/2017	12/31/2017	6/30/2018
3	CY18	1/1/2018	12/31/2018	6/30/2019
4	CY19	1/1/2019	12/31/2019	6/30/2020
5	CY20	1/1/2020	12/31/2020	6/30/2021
6	CY21	1/1/2021	12/31/2021	6/30/2022
7	CY22	1/1/2022	12/31/2022	6/30/2023

Understanding the Structure of the PUF

The data available in the PUF is organized into six (6) key content sections to increase the file's utility and efficiency for end users. These sections – detailed below in the same order as they appear in the PUF – include nearly 60 fields as noted in the following table.

Section	Contents	# of Fields	Based on…	Information Includes…
1	Selection criteria	5	Eligibility data	Reporting year, member age group, sex, coverage type, county of residence
2	Results overview	4	Eligibility data	Counts of members sharing the selection criteria (above), total number of months with insurance coverage
3	Disease prevalence	21	Claims data	Average health-risk score, counts of members with specific chronic conditions (e.g., asthma, breast cancer)
4	Quality measures	16	Claims data	Counts of members receiving preventive care (e.g., breast cancer screening, diabetes testing, well-care visits)
5	Utilization counts	6	Claims data	Counts of emergency department (ED) visits, inpatient hospitalizations, hospital and ED readmissions
6	Cost	6	Claims data	Sum of member and plan payments by type of service (e.g., inpatient, outpatient, professional, pharmacy)

Using the PUF

The PUF's first five fields – Reporting Year, County Name, Age Band, Member Sex, and Primary Insurance Type – together form a "stratification" that determines the results displayed in the remaining fields. Each stratification – all commercially insured women, ages 18–64 years, residing in Chittenden county in 2021, for example (see below) – is included as a separate row in the PUF.

Warehouse Name	Common Name	Selection
year	Reporting Year	2021
county_name	County Name	Chittenden
age_band	Age Band (in Years)	18-64
gender_code	Member Sex	Female
product_type	Primary Insurance Type	Commercial

Supplementary Code Stewards

The VHCURES PUF includes a series of disease prevalence counts, preventive and quality measures results, and expenditure totals for each reporting stratification. Many of these fields use specifications based on widely used standards authored and maintained by third parties, including the following:

- **Johns Hopkins Adjusted Clinical Groups® (ACGs®).** The PUF includes an average ACG risk score (avg_acg_risk_score) for each stratification that provides an overall measure of health status based on morbidity, age, and sex for each reporting year. ACGs were developed and are maintained by Johns Hopkins. Additional detail can be found online using the following link: https://www.hopkinsacg.org

- **HEDIS measures.** The PUF's quality and screening measures – Astha Medication Ratio (amr_den, amr_num), Breast Cancer Screening (bcs_den, bcs_num), HbA1c Testing (cdc_hba1c_den, cdc_hba1c_num), for example – use specifications for the Healthcare Effectiveness Data and Information Set (HEDIS®) from the National Committee for Quality Assurance (NCQA). Additional detail for these measures can be found online using the following link: https://www.ncqa.org/hedis/measures
- **CCW chronic condition flagging.** The PUF includes counts of members within each stratification who were reported with diagnoses for a series of chronic conditions such as Atrial Fibrillation (afib_flg), Alzheimer's (alz_flg), and Acute Myocardial Infarction (ami_flg). The flags used to identify these chronic conditions are based on specifications developed for the Chronic Conditions Data Warehouse (CCW) at the U.S. Centers for Medicare & Medicaid Services (CMS). Additional detail can be found online using the following link: https://www2.ccwdata.org/web/guest/condition-categories-chronic

Data Processing for VHCURES

More than 30 submitters report eligibility and claims data to Vermont's APCD, providing the foundation for VHCURES data products, including the PUF. This arriving data includes a wide array of demographic, diagnosis, procedure, prescription, and expenditure information that must be cleansed, validated, aggregated, enhanced, and organized for effective use by downstream end users. This complex process includes a series of data processing steps that include the following:

- **Claims de-duplication.** Over the course of file submissions, duplicate data can be reported to the APCD under multiple scenarios, including within a submitter's own files as billing parties finalize decisions regarding which party owes exactly how much for which services – a process known as "adjudication." Over time, a single service can be the subject of multiple "adjustment" claims that must be reconciled and rolled up into a "final" claim through the consolidation process. Only these final claims are included in the PUF data to remove double-counting and other issues related to duplicate reporting.
- **Member de-duplication.** Similar to the claims data, members may have their information reported multiple times by multiple payers to the APCD. Duplicate member reporting – including minor variations and mistakes in the reporting (e.g., John vs. Jhon vs. Jon vs. J.) – is addressed through Onpoint's identity-resolution process, which uses a series of "clustering" algorithms that scrutinize the available data elements (e.g., name, date of birth, sex) using both deterministic and probabilistic ("fuzzy") matching to de-duplicate redundant member information. Onpoint's identity-resolution process also addresses duplicate member reporting that can arise when the same individual is reported by more than one payer – when a person changes health plans due to a change in employers, becomes eligible for Medicaid, or experiences other life events that affect their insurance, for example. This process is key to ensuring that member counts and their related measure and expenditure information are de-duplicated and accurate.
- **Primary designation.** Onpoint's enhancements for VHCURES data include the designation of a primary payer for each member whose information is reported by more than one payer type (i.e., commercial, Medicaid, and Medicare) or by multiple payers within a single payer type (e.g., commercial insurers Acme Co. and Alpha Co.). The established algorithms use a series of hierarchical steps and tie-breaker logic to designate a single payer or payer type as primary in cases of overlapping coverage. For the PUF, this logic is used to designate whether a member's primary insurance type (product_type) was commercial or Medicaid for each reporting period.
- **Member information.** The first fields in the PUF – Reporting Year, County Name, Age Band, Member Sex, and Primary Insurance Type (see above) – are used in combination to determine the displayed results for each stratification. These fields provide key information

regarding the member population and are based on data in Onpoint's Member Year table for VHCURES. Member Year summarizes all reported member information into a single table – with one record per member per year – and provides tie-breaker data points for information that is reported redundantly (e.g., multiple ZIP codes of residence for a member who moves, multiple last names for a member who changes their name after getting married). Member Year's data source is the information reported in the VHCURES eligibility data files.

Exclusions

To eliminate outlier and incomplete data that can distort results, some data is excluded from the PUF. These exclusions include the following:

- **Orphaned claims.** Orphaned claims are adjustments to original claims that were never reported to the APCD – a scenario that results in outlier negative paid amounts that deflate total expenditures and inflate utilization counts.
- **Denied claims.** Denied claims are claims for which all plan and member payment amounts (e.g., paid, copay, coinsurance, deductible) were reported as zero, indicating that the service should not be included in analytics.
- **Medicare claims.** The PUF uses only claims covered by commercial and Medicaid insurance plans. Medicare Fee-for-Service coverage provided by the U.S. Centers for Medicare & Medicaid Services (CMS) and Medicare Advantage coverage provided by commercial insurers have been excluded.
- **Members aged 65 years and older.** Similar to the exclusion of Medicare data, members aged 65 years and older also have been excluded to avoid distortion in the reporting given their low numbers in the commercial and Medicaid populations.
- **Out-of-state residents.** Only Vermont residents have been included based on their reported ZIP code of residence in the eligibility data. Members with a non-Vermont ZIP code of residence are excluded even if their service was provided in Vermont. (Note that members with a missing or invalid ZIP code also have been excluded.)
- **Uninsured individuals.** Data reported to VHCURES is provided by insurers and therefore includes only individuals who have medical, pharmacy, or dental insurance coverage. Information regarding the demographics and health care services provided to uninsured individuals is not available in the VHCURES data.
- **Members reported with an unknown, missing, invalid, or non-binary sex.** Members reported to VHCURES with a gender code of 'U' (Unknown) and those reported with a missing or invalid gender code have been excluded. Members reported with the nonbinary gender code ('I') recently adopted for VHCURES also have been excluded due to low numbers.

Data Redaction

Certain data elements are redacted in the PUF due to small population size and/or counts. Details include the following:

- For member counts, disease prevalence counts, measure numerators and denominators, and visit counts, **any non-zero value of 10 or fewer is redacted** and displayed with a value of '-1'. Note that calculated values of 0 are displayed.
- Similarly, disease prevalence counts, measure numerators and denominators, and visit counts that have **a difference of 10 or fewer from the member count of that row also are redacted** and displayed with a value of -1. If the calculated difference is 0, the value is displayed.
- Expenditure measures are **never redacted**.

A walk-through of these redaction steps is included below using example data.

Step 1. Data is generated for the PUF.

Reporting Year	County Name	Age Band	Member Sex	Primary Insurance Type	Count of Unique Members	Asthma Flag	Child and Adolescent Well-Care Visits Denominator	Child and Adolescent Well-Care Visits Numerator	Total Cost
year	county_name	age_band	gender_code	product_type	unique_member_cnt	asthma_flag	wcv_den	wcv_num	total_cost
2021	Bennington	18-64	Female	Commercial	400	38	0	0	32398.12
2020	Bennington	18-64	Female	Medicaid	200	25	0	0	26421.56
2019	Bennington	18-64	Male	Commercial	400	46	0	0	35214.36
2018	Bennington	0-17	Female	Medicaid	8	2	6	4	3982.45
2017	Bennington	0-17	Female	Commercial	100	18	77	56	14002.32
2016	Bennington	0-17	Male	Medicaid	50	9	48	42	8004.55

Step 2. Values of 10 or fewer are redacted.

Reporting Year	County Name	Age Band	Member Sex	Primary Insurance Type	Count of Unique Members	Asthma Flag	Child and Adolescent Well-Care Visits Denominator	Child and Adolescent Well-Care Visits Numerator	Total Cost
year	county_name	age_band	gender_code	product_type	unique_member_cnt	asthma_flag	wcv_den	wcv_num	total_cost
2021	Bennington	18-64	Female	Commercial	400	38	0	0	32398.12
2020	Bennington	18-64	Female	Medicaid	200	25	0	0	26421.56
2019	Bennington	18-64	Male	Commercial	400	46	0	0	35214.36
2018	Bennington	0-17	Female	Medicaid	-1	-1	-1	-1	3982.45
2017	Bennington	0-17	Female	Commercial	100	18	77	56	14002.32
2016	Bennington	0-17	Male	Medicaid	50	-1	48	42	8004.55

Step 3. Values that have a difference of 10 or fewer from the member count of that row are redacted.

Reporting Year	County Name	Age Band	Member Sex	Primary Insurance Type	Count of Unique Members	Asthma Flag	Child and Adolescent Well-Care Visits Denominator	Child and Adolescent Well-Care Visits Numerator	Total Cost
year	county_name	age_band	gender_code	product_type	unique_member_cnt	asthma_flag	wcv_den	wcv_num	total_cost
2021	Bennington	18-64	Female	Commercial	400	38	0	0	32398.12
2020	Bennington	18-64	Female	Medicaid	200	25	0	0	26421.56
2019	Bennington	18-64	Male	Commercial	400	46	0	0	35214.36
2018	Bennington	0-17	Female	Medicaid	-1	-1	-1	-1	3982.45
2017	Bennington	0-17	Female	Commercial	100	18	77	56	14002.32
2016	Bennington	0-17	Male	Medicaid	50	-1	-1	-1	8004.55