VHCURES Overview

A Guide for Data Users

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VHCURES: A Guide for Data Users

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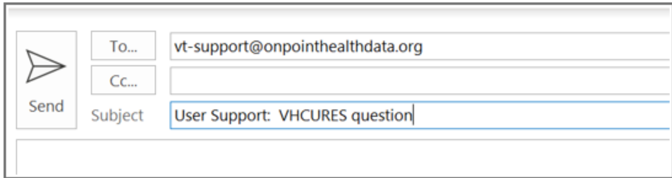
Version 1.0, January 2019

Introduction

The Vermont Health Care Uniform Reporting and Evaluation System (VHCURES) is the State's all-payer claims database. The VHCURES database includes eligibility information and medical and pharmacy claims provided by commercial health insurers as well as Medicaid and Medicare beginning in January 2007. Through data use agreements, VHCURES data is utilized by state agencies, state and federal contractors, and academic researchers to support analysis of health care access, spending, utilization, and quality. This guide provides an overview of VHCURES and links to a variety of resources that will be useful for VHCURES stakeholders and authorized users.

VHCURES User Assistance

Onpoint Health Data, the State's contracted data collection and consolidation vendor, wants authorized users of the VHCURES data set to understand the data in VHCURES and to know how to use the data effectively for analyses. Users can request assistance with technical questions by sending an email to vt-support@onpointhealthdata.org. **Emails should include "User Support" in the subject line of the email.**



Responses will be provided via email. However, users can request a call with an Onpoint technical representative as an alternative to working through email. Every effort will be made to provide a response to inquiries within 48 hours. However, more complex inquires may require additional time. Onpoint will keep the user informed of the status if additional time is needed.

VHCURES Overview

History

The State Legislature first called for the formation of an all-payer claims database in the 1990s, but it was not until 2009 with the enactment of 18 V.SA. 9410 that VHCURES was established. Today, VHCURES is regulated by the State in accordance with Regulation H-2008-01. The Green Mountain Care Board (GMCB) has been responsible for maintaining VHCURES since 2013.[1] The GMCB, created by the Vermont Legislature in 2011, works to ensure that the Vermont health care system provides quality, affordable health care to all Vermonters while reducing waste and controlling costs. To achieve these goals, the Green Mountain Care Board's priorities are focused on:

- Overseeing a health care payment and delivery system designed to improve the quality of care while reducing costs
- Monitoring and exerting downward pressure on overall health care spending
- Developing programs and creating partnerships to assess and enhance quality and safety in the health care system
- Enhancing system transparency and consumer involvement

The Green Mountain Care Board works closely with other state agencies, the Legislature, the Vermont business community, health care professionals and providers, and the citizens of Vermont to carry out its unique mission. In addition to VHCURES, the GMCB also oversees the State's hospital budgets and health insurance rates among other responsibilities. In 2014, the Board approved the implementation of a Data Governance and Stewardship Program. Central to the program is the Data Governance Council which oversees data stewardship in areas of data quality to promote the highest possible quality of GMCB's data resources, risk pertaining to data privacy and security, financial sustainability of the GMCBs data stewardship program, and data release to support clear processes for the evaluation of data requests and the release of data to State and non-State research entities.

Statutorily, the GMCB is required to maintain the VHCURES database for a variety 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.

[1] Before 2009, VHCURES was managed by the Vermont Department of Banking, Insurance, Securities & Health Care Administration (BISHCA), which later became known as the Department of Financial Regulation (DFR).

VHCURES Basics

The GMCB contracts with Onpoint Health Data, a Maine-based, nonprofit organization that manages VHCURES, including data intake, cleansing, consolidation, and extraction. The GMCB and Onpoint provide users with a variety of tools to assist them in analyzing VHCURES data.

Claims data with dates of service back to 2007 have been collected in VHCURES since 2008. Data includes commercial payers, Medicaid, Medicare, and Medicare Advantage. The commercial payers include both fully and self-insured plans and include individuals insured by certain state government entities: State of Vermont health plan, University of Vermont, the Vermont Education Health Initiative.[2] The State originally required all claims data from third-party administrators of self-funded company plans. In 2014, a court decision held that ERISA prevents the State from mandating that ERISA-covered self-funded plans provide this information; today all non-ERISA covered self-insured plans report to the APCD, while only some ERISA covered self-insured employers opt-in.[3]

State regulations require that all health insurers, third-party administrators (TPAs), and pharmacy benefits managers (PBMs) that cover Vermont residents register with Onpoint each year by December 31. However, plans with fewer than 200 Vermont members are not required to submit data. Plans with 200 or more Vermont members must submit health care eligibility and claims data according to a monthly, quarterly, or annual schedule, depending on the number of members.

Submissions are limited to information about Vermont residents, but submitting plans need not be licensed to sell insurance in Vermont. The table below provides a further overview of information available in VHCURES, as well as data elements that are not available. Full details are contained in Onpoint's Data Submission Guide, which may be accessed at:
https://gmcboard.vermont.gov/document/vhcures-data-submission-guide-version-2.2

[2] The Vermont Education Health Initiative (VEHI) is a nonprofit member-owned trust that provides health and dental plans to member school districts and their employees.

3 United States Court of Appeals for the Second Circuit, *Liberty Mutual Insurance Company v. Susan Donegan,* 2014.

Type of Information	Types of Information Available in VHCURES	Types of Information NOT Available in VHCURES
Eligibility and Claims	• Eligibility information • Medical claims (paid), including many carve-out vendors • Pharmacy claims (paid)	• Fully denied claims • Pre-adjudicated claims • Test results from lab and radiology/imaging • Claims for services at Vermont providers delivered to non-Vermont residents
Payers	• Commercial • Certain third-party administrators / Self-funded: – State of Vermont health plan – UVM – VEHI – Opt-in employers • Medicaid • Medicare and Medicare Advantage	Data for the following categories of individuals: • Most ERISA self-insured employers • Uninsured and self-paying individuals • Individuals covered under VA, TRICARE, and FEHBP • Payers with Vermont resident enrollment of fewer than 200
Plan Details	• Insurer name • Insurance product type • Primary insurance indicator • Linked eligibility across multiple plans, including Medicare / Medicaid dual-eligible members	• Premium and benefit design information • Claims and eligibility data for dental carriers • Financial performance data (e.g., RBC)
Payments	• Payer payments • Deductible amount • Coinsurance and copay amounts • Estimated “prepaid” amount for claims that are included in capitation	• Non-claims payments, including capitation, shared savings, and incentive payments
Providers	• Provider charges • Unique provider identifiers • Rendering service provider • Prescribing provider • Billing provider • Professional identity code (specialty) • Blueprint medical home indicator • Vermont ACO indicator	• Certain data about substance use and abortion services is omitted by law • Complete information about provider affiliations (e.g., common ownership)
Members	• Encrypted member ID, linked across eligibility and claims records • Member demographics (e.g., age, gender, ZIP code)	• Members of Vermont health plans who do not reside in Vermont • Birth and death records • Risk scores • Demographic information not included in claims data (e.g., income, education); race/ethnicity data is available but is inconsistently populated • Some demographic data (e.g., date of birth) is not released for privacy reasons

Data Access, Data Protection, & Confidentiality

Vermonters' privacy with respect to VHCURES is protected by GMCB policy and by state and federal law and regulations. GMCB takes several steps to protect patient privacy and limits access to VHCURES to qualified users who also commit to protecting patient privacy.

VHCURES data is available to users who meet the requirements of the data release process. In order to gain access to VHCURES, an organization must have a data use agreement with the GMCB. The Green Mountain Care Board uses a different data use agreement process for state vs. non-state entities. Vermont State entities may apply for and secure a "broad use" data use agreement with access to commercial and Medicaid data. GMCB has discretion to include access to Medicare data in such agreements with state entities. Non-state entities may apply to gain access to the database, but only for a limited use data set, which does not provide access to Medicare data. GMCB does not collect a fee from non-state entities in order to gain access to VHCURES, however, under contract, researchers pay Onpoint a set fee for a customized data extract.

At time of data submission, the State's commercial insurers and Medicaid program hash the names of the insured, their Social Security numbers, and other member identifiers before submitting to Onpoint, which then encrypts this data again prior to data release.

GMCB data use agreement forms may be accessed at https://gmcboard.vermont.gov/data-forms-library.

Governance

The Green Mountain Care Board chartered the Data Governance Council to oversee the stewardship of VHCURES, including the development and revision of principles and policies to guide decision-making in four key areas: risk, data quality, finance and data release. Working with its Data Governance Council, the GMCB is responsible for monitoring the quality and utility of VHCURES, following best practices with regard to protection of privacy and data security of VHCURES data, and ensuring the financial sustainability of the database.

The Data Governance Council supports the GMCB decision-making process for applications requesting use and disclosure of VHCURES data sets by non-state entities. The Data Governance Council is composed of seven voting members and convenes every other month in an open, public meeting.

Available Products

Public Reports

GMCB produces two public reports that provide statistics describing the Vermont health care system as reported to VHCURES: (1) an Enrollment Trend Report and (2) a Medical Expenditure Trend Report.

These reports include enrollment and spending by plan and funding type for both commercial and public payers. The Medicaid data includes some Medicaid eligibility subcategorization as well.

The data are derived from VHCURES and therefore reflect only data submitted to VHCURES, so enrollment and spending of other Vermonters is not included (see chart above for which kinds of coverage are included in VHCURES).

The notes on these reports include details about validation efforts that the GMCB undertook to confirm the accuracy of the data with certain submitting payers.

Analytic Files

In 2018, the GMCB developed a set of VHCURES Analytic Files designed to reduce the technical knowledge that users need in order to derive meaningful information from VHCURES, while preserving sufficient detail to allow for flexible and meaningful analysis. Previously, qualified users could access only the "full consolidated extract," which requires significant technical ability to derive meaningful analysis. The Analytic Files will reduce barriers to effective and efficient use of VHCURES.

The Analytic File set includes commercial and Medicaid data as well as an alternate version that includes Medicare data (users will be able to request and receive Medicare data only when permitted by data release regulations). Accompanying documentation enables analysts with data analysis skills to perform interesting queries, but the Analytic Files notably do not require significant experience with claims data.

The Analytic Files use a simplified file layout and linking schema based on four files:

1. Claim summary file (one line for each medical or pharmacy claim line, with a person identifier and billing provider identifier)
2. Member month file (one line for each person for each month of eligibility, reporting their de-duplicated primary coverage, with basic demographic and eligibility data; links to the claim summary file)
3. Medical claim header file (aggregating claim lines to the header level)
4. Inpatient stay summary file (aggregating claim lines to a single inpatient stay)

While direct identifiers such as name and birth date are removed, some risk of re-identification remains due to the level of detail provided (e.g., dates of service). Accordingly, use of these files requires an application process and Data Use Agreement (DUA) for release.

More details about VHCURES data and the Data Dictionary are found in the next sections.

Consolidated Extract

Qualified users also may apply for the consolidated VHCURES extract. This is the most detailed VHCURES data set. It includes data fields as submitted by payers as well as Onpoint value-added tables and fields. Effective use of the consolidated extract requires technical knowledge of claims data as well as sufficient database management infrastructure and expertise.

Onpoint's Analytic Enclave

Onpoint provides the Green Mountain Care Board with access to an Analytic Enclave. The Enclave is a secure, cloud-based environment where authorized users can access tools and data to perform analyses and reporting. The Enclave offers a highly performant environment for running analytic queries and reporting on VHCURES data. In addition, the Enclave is an effective environment for sharing VHCURES data across multiple State users.

Technical Data

Overview of the Most Recent VHCURES Release

Due to the frequency of VHCURES Releases, details about each data release are included in the documentation delivered with the extracted data set and also are available upon request by emailing vt-support@onpointhealthdata.org.

Overview of File Types

Vermont's data is collected and stored using Onpoint CDM (Claims Data Manager), which incorporates both automated and manual processes, including hashing, encryption, master member and provider indices, and consolidation, and is designed to vet submitted data for utility and reliability in follow-on research and analysis. Onpoint CDM serves not only as a storehouse for originally submitted claims data but holds a wealth of value-added elements built through linkage and enhancement. The data warehouse consists of three primary types of data sets: core data sets, supporting data sets, and reference data sets. Separately, each provides a discrete path into the data; combined, they offer a comprehensive roadmap to understanding how health care is being used:

- **Core data sets** represent the bulk of the claims and eligibility information most frequently used for analysis. Core sets not only preserve the data as originally submitted but are supplemented with a range of enhanced and value-added fields to aid in the use of the data. Examples of core data sets include: medical claims, pharmacy claims, and medical and pharmacy membership.
- **Supporting data sets** contain additional data elements not frequently used for analysis (e.g., admission hour) along with Medicare-specific fields.
- **Reference data sets** are primarily look-up files containing all valid codes and their associated labels. Reference sets also may include elements that allow the summarizing of core data at a higher level. For example, the geography reference data set is ZIP-code based with one record for each ZIP code; it also includes the county and hospital service area (HSA) codes associated with that ZIP code. Linking the medical claims data set to the geography reference data set on the ZIP code field allows the user to summarize data by county. Reference data sets also may include data for nonstandard code values used by individual data reporters; these often are referred to as "local" or "homegrown" codes.

In the case of medical and pharmacy claims, only final claims are included in the extracted data set.

Overview of Data Dictionary

A comprehensive Data Dictionary for the Analytic File and the Consolidated Extract is provided when an extract is delivered. These data dictionaries provide a list of available data elements — some as originally submitted, others as enhanced by Onpoint through review, standardization, and value-add processes. Elements are listed by table and provide technical specifications and background information, including inter-element mappings so that users can plot the most efficient path to the data they need. Each table is detailed on its own Excel-based tab, with columns that provide helpful details, including:

- Warehouse name
- Common name
- Type
- Length
- Description
- Origin
- Table linkage
- Onpoint notes
- User notes

The VHCURES publicly accessible Data Dictionary may be accessed at https://gmcboard.vermont.gov/health-data-resources/vhcures.

Data Collection Process

Under Vermont laws and regulations, health insurers providing services to Vermont residents are required to register on an annual basis with the State of Vermont. This requirement pertains to comprehensive major medical health benefit plans that may be insured or self-insured, Medicare Supplement, and Medicare Parts C and D. Agencies serving 200 or more Vermont resident members also must report claims to VHCURES. Agencies serving fewer than 200 Vermont residents must register annually but are not required to report to VHCURES. Submission of eligibility and claims data is not required for non-resident members who receive covered services from Vermont health care providers or facilities or by insurers providing Medicare Supplement policies covering Vermont residents.

Currently both annual registration and VHCURES reporting occurs via the Onpoint Claims Data Manager. The Data Submission Guide with more detailed registration and reporting information may be accessed at https://gmcboard.vermont.gov/document/vhcures-data-submission-guide-version-2.2.

Linking Across File Types

Information about linking across file types and an Entity Relationship Diagram are included in the Data Dictionary. This includes being able to link members reported in eligibility to their associated medical and pharmacy claims as well as tracking members over time and across payers by using the Onpoint-assigned unique ID for each reported member. This is also true for providers. Providers can be linked between medical and pharmacy claims no matter their role (e.g., rendering, billing, prescribing, etc.).

Onpoint also provides IDs for most submitted codes so that they can be easily linked to their associated reference table to capture the codes' descriptions and other information. Each record in a table is assigned a unique record ID, which enables for linkage across files. These IDs can be linked to associate medical claim detail lines to their header record or to review the detailed records associated with an inpatient stay.

Supplemental Information

Data Validation Process

Data collection and validation for VHCURES submissions is performed by Onpoint's suite of data integration and processing services, Onpoint CDM. Onpoint CDM begins with submitter registration and ends with processed, standardized data. In between, it spans a series of complicated steps that include mapping submitters' data, benchmarking data, vetting data against an extensive library of data quality validations, tuning acceptance thresholds, verifying quality, mapping identifiers, compiling records, and consolidating the resulting data into an accurate resource for follow-on research and online reporting. Throughout the process, Onpoint CDM's secure online interface serves as a resource for data reporters and clients alike.

Data Limitations

VHCURES does not contain complete data on the Vermont health care market because of its specific scope and the exclusion of certain payers, including ERISA self-insured payers (a few may opt-in), federal employee plans, Veterans' Affairs, and TRICARE, self-pay (uninsured), and payers with an average Vermont resident enrollment of fewer than 200. There is also a variety of data that is not included in VHCURES such as capitation payments or other non-claims payments, clinical information necessary for calculating certain quality measures, financial performance information, and services not covered by insurance. In addition, claims data in the VHCURES extract has not been risk adjusted, which can limit the ability to make meaningful cross-payer and cross-provider cost and quality comparisons.

While every effort is made to ensure the utility of VHCURES data, it is critical to understand that there are inherent challenges to working with submitted claims data. While carve-out and use flags have been added to enhance data utility, extensive caution still must be used when linking between claims and membership records in both the medical and pharmacy files to avoid duplicate counts and overlaps. If you need assistance in understanding how to improve the reliability of your data set, please contact Onpoint or GMCB to inquire about training and consulting services.

Major Enhancements

Master Patient Index

Foundational to an APCD is a unique member identifier that allows data users to track an individual over time and across health plans. With more than 70 health plans submitting data to VHCURES, each with their own proprietary enrollment and adjudication systems and plan-specific identifiers, generating a reliable master patient index (MPI) is critical. Onpoint's MPI solution has been continuously enhanced over time and, for the State of Vermont, has been able to achieve very positive results as evaluated by survival analyses, particularly considering that the primary matching fields are deidentified through a hashing algorithm prior to submission.

Master Provider Index

A master provider index that accurately and consistently identifies a provider across plans and over time is also a critical component of any data aggregation and reporting solution. Like the master patient index process, Onpoint's provider clustering process involves a complex series of algorithms, both deterministic and probabilistic, internal and external reference files, and automated linkage steps. Onpoint's provider index solution assigns unique IDs to providers no matter their role – PCP, rendering, billing, prescribing, etc. – to enhance linkage results. The clustering process incorporates national reference files, including a monthly subscription file from the National Plan and Provider Enumeration System (NPPES). This external source of truth is utilized to improve the accuracy.

Key Analytic Techniques

Onpoint's core data management solution includes a robust set of data enhancements that are delivered to the GMCB and their approved researchers. These include analytic use flags that allow easy identification of subsets of records for analysis, multi-claim inpatient stays that are grouped into a single institutional stay, and individual service lines of claims summarized into a header record, providing claim-level costs and flags to aid analysts in their research.

Current analytic enhancements being delivered to VHCURES data users include:

- **Member month.** Determines the primary medical and pharmacy payer and product for each member for each month of eligibility
- **Inpatient stay summary.** Assigns a single identifier to all records associated with an inpatient stay/discharge
- **Medical claim header**. Groups detail-level medical claims as provided by the submitter into a header-level record in which the payment, provider, member, and claim type information is summarized

Use Case Examples

Type of Information	Type of Information Available in VHCURES	Type of Information NOT Available in VHCURES	What You Cannot Do with VHCURES	What you CAN Do with VHCURES
Claims, Eligibility, Enrollment	• Medical claims (paid) including many carve-out vendors. • Pharmacy claims (paid) • Enrollment records • Eligibility information (Medicaid)	• Denied claims • Pre-adjudicated claims • Test results from lab and radiology/imaging • Claims for services at Vermont providers delivered to non-Vermont residents	• Clinical data analyses • Some quality measures (non-claims)	VHCURES data is available to users with an approved Data Use Agreement, a legal agreement between data users and the GMCB. Users with the appropriate experience, technical skills, and data management resources can analyze: • Enrollment data • Health expenditures, e.g., inpatient expenditures PMPM, outpatient ED expenditures PMPM • Geographic differences, e.g., Geographic variations in cost PMPM • Variation in payments by service type • Utilization, e.g. inpatient discharges, outpatient ED discharges • Claims-based quality measures NOTE: The technical requirements and knowledge required vary depending on the analysis.

Payers	• Commercial
	• Certain Third-Party Administrators/Self-funded:
	  ○ State of Vermont health plan
	  ○ UVM
	  ○ VEHI
	  ○ Opt-in employers
	• Medicaid
	• Medicare and Medicare Advantage
		Data for the following categories of individuals:
		• Most non-government self-insured employers
		• Uninsured and self-paying individuals
		• Individuals covered under VA, TRICARE and FEHBP
		• Payers with Vermont resident enrollment less than 200
			• Complete statewide analyses (enrollment, services, etc.)
			• Analyses of services provided to the uninsured	

Plan Details	• Insurer name • Insurance product type • Primary insurance indicator • Linked enrollment across multiple plans, including Medicare / Medicaid dual-eligible members.	• Premium and benefit design information • Claims and eligibility data for dental carriers • Financial performance data (e.g. RBC)	• Analyze benefit design trends	
Payments	• Payer payments • Deductible amount • Coinsurance and copay amounts • Estimated "prepaid" amount for claims that are included in capitation	• Non-claims payments including capitation, shared savings, and incentive payments	• Calculate comprehensive PMPM (by payer or provider)	
Providers	• Provider charges • Unique provider identifiers • Rendering service provider • Prescribing provider • Professional identity code (specialty) • Blueprint medical home indicator • Vermont ACO indicator	• Certain data about substance use and abortion services is omitted by law. • Complete information about provider affiliations (e.g. common ownership)	• Count the total number of providers (there are duplicates and exclusions) • Easily group individual providers to practices or parent organizations. (i.e., identify all practices associated with a larger medical group).	
Members	• Encrypted member ID, linked across enrollment records • Member demographics (e.g., age, sex, zip code)	• Members of Vermont health plans who do not reside in Vermont. • Birth and death records • Risk scores • Demographic information not included in claims data (e.g. income, education). Race/ethnicity data is available but is inconsistently populated. • Some demographic data (e.g. date of birth) is not released for privacy reasons.	• Risk-adjusted comparisons between providers.	

For more information, please visit the VHCURES webpage on the Green Mountain Care Board website https://gmcboard.vermont.gov/ or contact the GMCB analytical team at gmcb.data@vermont.gov. The website also provides additional information about privacy restrictions and the data use agreement application and process. If VHCURES will not meet your needs, a Data Encyclopedia maintained by the Department of Health provides an overview of other health data sources available from the State of Vermont.

Reference Materials

Data Governance Materials

Enabling statute: 18 V.S.A. 9410

GMCB Regulation: Regulation H-2008-01

The GMCB's data use agreement forms: https://gmcboard.vermont.gov/data-forms-library

Acronyms used throughout this Guide

1. APCD: All-Payer Claims Database.
2. CDM: Onpoint Claims Data Manager.
3. ERISA: Federal law exempting certain employer-sponsored health plans from reporting to VHCURES.
4. National Plan and Provider Enumeration System (NPPES). The Centers for Medicare & Medicaid Services developed this system to improve the efficiency and effectiveness of the electronic transmission of health information.
5. PBM: Pharmacy Benefit Manager.
6. RBC: Risk-Based Capital, which is a metric related to insurance company financial health.
7. TPA: Third-Party Administrator.
8. UVM: University of Vermont.
9. VA, TRICARE and FEBHP: various federal sources of insurance that are not required to report to VHCURES.
10. VEHI: Vermont Education Health Initiative.
11. VHCURES: Vermont Health Care Uniform Reporting and Evaluation System, Vermont's All-Payer Claims Database (APCD).