

Summary

Vermont collects extensive health care-related data in a variety of ways and through many agencies.

- The Green Mountain Care Board (GMCB) maintains and manages health care claims administrative data known as VHCURES,¹ and hospital discharge data known as VUHDDS.²
- Vital Statistics, the Clinical Registry and the Cancer Registry are all managed by the Vermont Department of Health.³
- Vermont Information Technology Leaders (VITL) collects clinical data.

Each data source tells a part of the health care story in Vermont. Some questions are best answered by combining health care data from multiple sources to get a fuller picture. By linking and integrating these data sets, we may be able to perform more nuanced and sophisticated analysis to better understand how health care is accessed, delivered, utilized, and paid for in Vermont.

Understanding Data Linkage

The term “data linkage” is commonly defined as matching variables about the same entity using different sets, or sources, of data. In its data linkage policy, the GMCB describes data linkage as “the merging of two or more unique data sets or files to connect common identifiers across the sets.”⁴

Why Link Data Sources?

There are many benefits of data linkage. According to the U.S. Census Bureau, data linkage helps “improve the content and coverage of its data collections, permit cross-sectional and longitudinal analyses of populations and establishments, explore and improve the quality of estimates and other administrative data, and ultimately provide curated data products that would otherwise be infeasible without adding cost or burden to the public.”⁵ There are a variety of reasons why researchers may want linked data, including enabling more comprehensive research through the creation of more detailed and expansive data sets that can provide answers to questions which a single data set cannot resolve, improved accuracy of analyses, and reduced data collection burden. Other researchers similarly describe the benefits as providing the potential for “more complete information without the time and cost burden of additional and often duplicate primary data collection.”⁶ Some commonly linked data sets include claims files, disease registries, and data in electronic medical records.

¹ [Vermont Health Care Uniform Reporting and Evaluation System.](#)

² [Vermont Uniform Hospital Discharge Data System.](#)

³ [VDH Health Statistics & Vital Records.](#)

⁴ [GMCB Data Governance Council Policy Regarding Data Linkage.](#) August 14, 2020.

⁵ [Census Bureau Data Stewardship Program Data Linkage Policy.](#)

⁶ Bradley, Cathy J, Lynne Penberthy, Kelly J Devers, and Debra J Holden. “[Health Services Research and Data Linkages: Issues, Methods, and Directions for the Future.](#)” Health Research and Educational Trust; 2010.

Green Mountain Care Board

The purpose of the Green Mountain Care Board is to promote the general good of the State by:

1. Improving the health of the population;
2. Reducing the per-capita rate of growth in expenditures for health services in Vermont across all payers while ensuring that access to care and quality of care are not compromised;
3. Enhancing the patient and health care professional experience of care;
4. Recruiting and retaining high-quality health care professionals; and
5. Achieving administrative simplification in health care financing and delivery.

18 V.S.A. § 9372

Examples of Data Linkage Projects in Vermont

The University of Vermont Larner College of Medicine (UVM-LCOM) is approved by the GMCB's data governance council and the Vermont Department of Health to link VHCURES with the Vermont Cancer Registry to conduct research using detailed cancer diagnosis data in combination with health care utilization data in Vermont. This research will study patterns of lung cancer screening, diagnosis, and outcomes in Vermont, and how these patterns vary by time, geography, and other sociodemographic factors.⁷ Additionally, UVM-LCOM is approved to link Vital Statistics data with VHCURES for a variety of research projects, including examining the effectiveness of post-discharge care following intensive care stays in Vermont hospitals, and evaluating the impact of provider payment reforms on service utilization and health outcomes.⁸

The Department of Vermont Health Access (DVHA) is approved by the GMCB's data governance council to link VHCURES with clinical data from the electronic health records and care management system through the Vermont Health Information Exchange (VHIE) to support program evaluation, quality improvement, and payment reform? implementation work, including supporting initiatives related to non-opioid management of chronic pain, and screening, brief intervention, and navigation to services.⁹

Data Integration

Data integration further enhances linked data. When data from disparate systems is integrated into one larger more complex system, users can leverage more data for research. This may be useful for consistent access to more complex data and can improve business processes. However, it is important to understand the distinction between integration and linkage. Integrated data systems often provide substantial methods for addressing duplication and mismatched records and provides opportunity to extend the combined data to other tools. For example, integrating clinical information with claims information would allow for a more detailed, longitudinal picture of patients' diagnoses. Diagnoses and their history could then be grouped into related categories using specialized software. Integration also offers the opportunity to provide an ongoing, standard system to combine data over time, whereas linkage, as implemented today, is largely devoted to one-time projects. Standard, integrated sources also provide the opportunity to expand access to more potential users, as the cost of piecemeal linkage may be prohibitive for some approved data users.

GMCB Efforts to Enrich Data for Research

The ecosystem of data in health care is varied and complex. Most data are part of systems designed to serve a specific, limited purpose. The GMCB is beginning to examine potential opportunities to implement a data model to help collect and disseminate data in a more flexible and standard manner.

Currently, the GMCB has permitted data linkages for a variety of research projects conducted by Vermont state agencies with authorized access to GMCB data assets. The GMCB is also pursuing opportunities to enhance the usefulness of the claims data by integrating it with other data sets, such as birth and death certificates. This pilot will provide a roadmap for potentially integrating other data sets with VHCURES.

The GMCB is also assisting DVHA as they pilot the integration of claims with the VHIE. Combining clinical and claims information is one of the most exciting opportunities, as it can expand understanding of patient care patterns for providers, researchers, and the health care delivery system at large.

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⁷ [UVM-LCOM VHCURES-Vermont Cancer Registry data linkage project application.](#)

⁸ [UVM-LCOM VHCURES-Vital Statistics data linkage project application.](#)

⁹ [DVHA VHCURES-clinical data linkage project application.](#)