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## Stakeholder Report

Compiled for the Vermont Healthcare Workforce Data Center  
(VT HWDC)

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**August 28, 2024**

## Table of Contents

EXECUTIVE SUMMARY .....	3
Overview of Stakeholder Engagement Activity .....	3
Overview of Recommendations .....	4
CHAPTER 1: USE CASES.....	6
Summary .....	6
Use Cases.....	6
Use Cases for Specific User Groups .....	7
<i>Table 1 - List of Healthcare Workforce Use Cases</i> .....	9
CHAPTER 2: DATA SOURCES AND PRIORITIZATION .....	11
Summary .....	11
Phased Approach to Data Source Integration.....	11
Enhancing the Collected Data .....	12
<i>Table 2 - List of Healthcare Workforce Data Sources</i> .....	14
CHAPTER 3: DATA GOVERNANCE .....	18
Summary .....	18
Data Governance Roles .....	18
Data Governance Framework.....	19
Other Data Governance and Integration Recommendations.....	20
Data Governance Challenges.....	20
CHAPTER 4: DATA SECURITY, ARCHITECTURE AND TECHNOLOGY .....	22
Summary .....	22
Security .....	23
Architecture and Technology .....	23
Data Model.....	24
<i>Table 3 - Recommended requirements for VT HWDC Solution</i> .....	26
CHAPTER 5: STAFFING .....	27
Summary .....	27
Staffing Recommendations for the HWDC.....	27
CHAPTER 6: FINANCING AND SUSTAINABILITY.....	29
Summary .....	29

# EXECUTIVE SUMMARY

## Overview of Stakeholder Engagement Activity

Freedman HealthCare (FHC) has been engaged by the Vermont Agency of Human Services (AHS) to facilitate stakeholder conversations, develop recommendations for implementing the Vermont Healthcare Workforce Data Center (HWDC) and drafting an analytic plan.

The approach to these stakeholder interviews was outlined in the Stakeholder Engagement Plan delivered to VT AHS on April 10, 2024, and included the following key elements:

### 1. Stakeholder Identification

- Four cohorts of Vermont stakeholder were identified:
  - i. VT Government Agencies (outside of AHS)
  - ii. VT AHS
  - iii. Educational Institutions
  - iv. Healthcare Associations and Hospitals/Medical Systems
- A comprehensive list of all stakeholders identified/contacted in each category can be found in the Stakeholder Engagement Plan.

### 2. Interview Structure:

- Three one-hour interviews for state agency stakeholders (Cohorts 1 and 2)
- Two one-hour interviews for non-state agency stakeholders (Cohorts 3 and 4)
- Interview guides were developed for each interview and provided in advance.

### 3. National Consortium:

- A “learning collaborative” of representatives from other states’ healthcare workforce data initiatives was also convened.
- This group met for four initial one-hour meetings to share best practices, challenges and success. This group will continue to meet on a quarterly basis going forward.

### 4. Timeline:

- Stakeholder interviews were conducted from May 22, 2024, to July 2, 2024, with follow-up emails for clarification and to request additional detail.
- National Consortium<sup>1</sup> meetings were held from June 20, 2024, to August 5, 2024.

### 5. Interview Focus Areas

- Current healthcare workforce data needs
- Vision for the VT HWDC
- Available data sources
- Recommendations for data architecture
- Considerations for data governance

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<sup>1</sup> The “National Consortium” is a panel of state human services and health agency managers who contributed their observations and lessons learned in developing and administering integrated data systems with capacity and resources like those envisioned for the VT HWDC.

- Staffing requirements
- Financial planning

## Overview of Recommendations

Vermont stakeholders generously made time for discussions and expressed their support for the concept. Building on Vermont's ongoing work to build insight into the state's healthcare landscape, stakeholders understood the importance of ensuring a strong healthcare workforce to meet public health needs and contribute to the state economy.

Stakeholders offered the following-high level recommendations.

### Users and Use Cases:

- Focus on three high priority use case categories:
  - workforce pipeline evaluation, such as healthcare workforce shortages
  - analysis for decision-making, such as educational program development
  - program evaluation/benchmarking for policy makers
- Plan to serve diverse users including job seekers, students, educational institutions, healthcare providers, and government agencies.

### Available Data:

- Integrate data from multiple sources, including professional licensure data, healthcare workforce census, labor market information, and educational institution data.
- Prioritize readily available datasets, those that are well-documented, and those that will support the most use cases.
- Implement a three-tiered approach to data integration: short-term (year 1), medium-term (year 2-3) and long-term (year 4-5) data sources.

### Data Governance:

- Establish a defined governance structure that ensures input and oversight from data suppliers, data users and data guardians.
- House the HWDC within the Agency of Human Services (AHS) and explore the possibility of leveraging the Unified Health Data Space.
- Develop and implement comprehensive data sharing agreements and governance policies.
- Create a tiered data access model to accommodate both public and restricted users to appropriate data resources.

### Data Security, Architecture, and Technology:

- Utilize cloud-based, modular solutions that align with the state's Unified Health Data Space initiative.
- Implement robust security measures including role-based access, element-level security, and data encryption.
- Develop a sophisticated, configurable website to provide various data products and self-service analytic capabilities.
- Create a comprehensive data model to map data inputs to outputs and maintain consistent definitions.
- Develop standardized data formats and APIs to facilitate data exchange and integration

with other state systems.

**Staffing:**

- Ensure ongoing capacity (via staff or contractors) to support day-to-day tasks typically associated with database administration (such as, but not limited to, oversight of data models, architecture, submitter agreements and user credentialing), data analysts (validation and report design), project management, training/technical support, and subject matter experts.
- Provide ongoing operations support for tasks such as new data ingestion, cross file linkages, data analysis, governance enforcement, user support, and access management.

These recommendations will be reflected in the tasks, milestones, and timeline detailed in the 5-year implementation plan and the reporting specifications provided in the analytic plan.

# CHAPTER 1: USE CASES

## Summary

Interviews with Vermont stakeholders explored healthcare workforce data needs, already identified use cases and other areas of interest. A distinct list of all use cases was developed from these interviews. These use cases will help inform the prioritization of ingesting and integrating data sources and producing data products.

Stakeholders focused on the need for data to assess, analyze and monitor the shortage of healthcare workers in the state of Vermont. Three use case themes emerged from the interviews:

- **Workforce Pipeline Evaluation:** Need for data to help assess the overall demand for healthcare workers compared to the availability/supply of skilled healthcare workers.
- **Analysis, Problem Solving, and Decision Making:** Need for data that allows VT state departments and agencies, educational institutions, healthcare associations, and members of the public to make informed decisions on legislation, policy, program development, and career opportunities.
- **Program Evaluation and Benchmarking:** Need for data to establish benchmarks and key performance indicators to monitor progress of programs and evaluate outcomes of health workforce related legislations, policies, and programs.

There is not a single data source that will meet all the needs and use cases. It will require the integration of various data sources over time to develop a rich data repository that will meet most user needs. See [Chapter Two](#) for the list of available data sources, their availability, and the priority of data sources to be ingested. Coordination of use cases with the timing of available data will help determine the short, medium, and long-term reporting strategy.

## Use Cases

[Table 1](#) lists all use cases identified during both the stakeholder interviews and the National Consortium meetings. Outlined below are a few of the use cases in each of the three categories:

- **Workforce Pipeline Evaluation:**
  - Demand Modeling: Look at demand to assess shortages in specific specialties, licensures, and credentials and by region. Other data sources can also be integrated into the data center to forecast potential future needs (e.g., aging population and chronic conditions using APCD healthcare claims data).
  - Healthcare Workforce Supply: Track licensed and non-licensed individuals and whether they continue to work as a healthcare provider, track students pursuing a career in healthcare starting at the high school level through graduation and residency.
- **Analysis, Problem Solving, and Decision Making:**
  - Perform analysis to evaluate reasons for workforce shortage (e.g., turnover, attrition, salaries, access to training/educational programs)
  - Identifying existing training and educational opportunities and areas where these

training opportunities are lacking.

- **Program Evaluation and Benchmarking:**
  - Evaluate outcomes of educational and funding programs (e.g., scholarships, loan forgiveness, employer sponsored)
  - Compare VT Healthcare Workforce benchmarks across other states and against national benchmarks.

## Use Cases for Specific User Groups

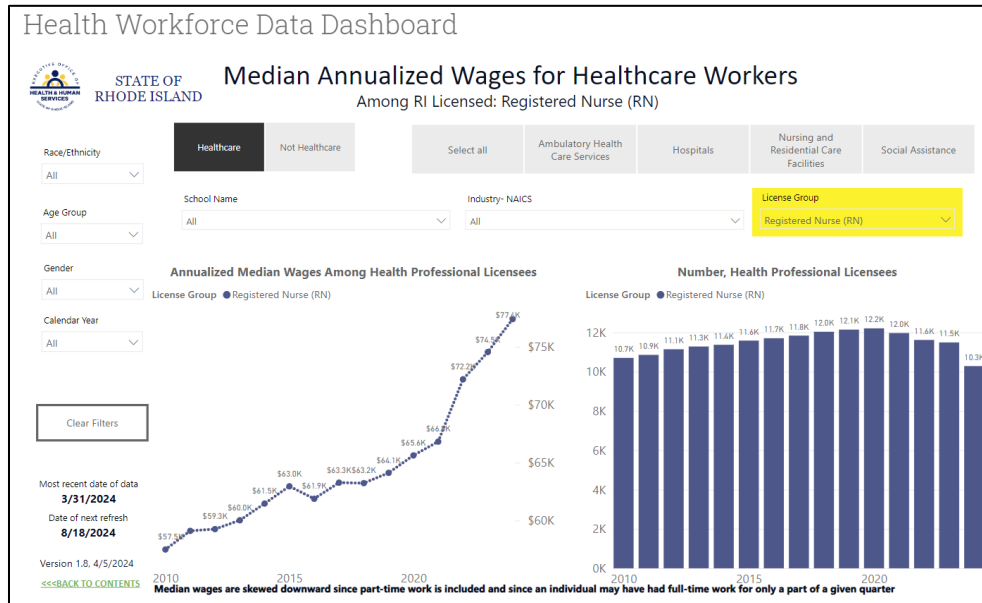
Stakeholders anticipate that there will be a high level of interest in analysis and reports using the healthcare workforce data. Expected users include:

- State agency analysts developing information for policy development and evaluation.
- Researchers and analysts who seek granular data to perform their own analysis.
- Individuals seeking static reports for specific studies.
- Member of the public seeking user-friendly dashboards and visualizations.

Examples of specific use cases include:

- **Job Seekers and Students**
  - Access information on healthcare career pathways and salaries to evaluate whether to pursue a career in healthcare and to remain in Vermont. Figure 1 below provides a snapshot of median annualized wages for Registered Nurses in Rhode Island.
  - Track availability of openings or clinical placements

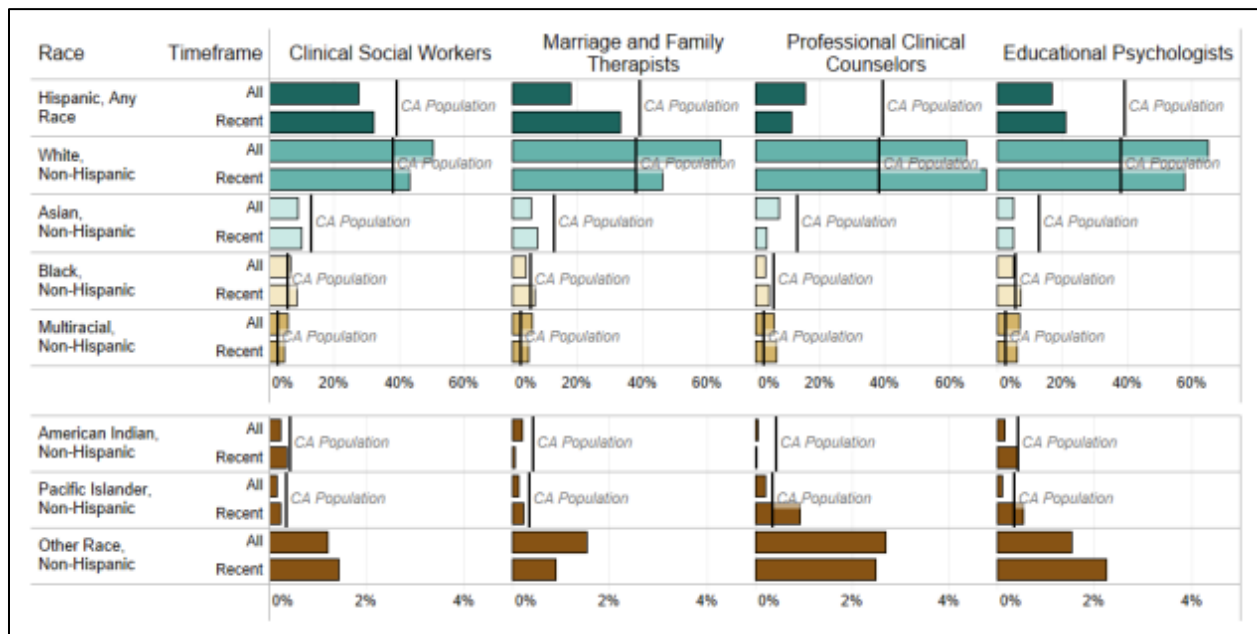
Figure 1 - Rhode Island Health Workforce Data Dashboard<sup>2</sup>



<sup>2</sup> Rhode Island Health Workforce Data Dashboard <https://eohhs.ri.gov/health-workforce-dashboard>

- **Educational Institutions:**
  - Interested in demand forecasting so they can proactively expand their educational and funding programs to meet the need.
  - Evaluation of educational programs and outcomes to build upon programs that demonstrate successful completion of programs and retention in the workforce.
  
- **Healthcare Systems and Providers:**
  - Assessments of network adequacy and access to care. Enhancement of that assessment with race, ethnicity, sexual orientation, and gender identity data of clinicians to evaluate whether the composition of the healthcare workforce meets the needs of Vermonters. For example, Figure 2 below illustrates CA's trend in behavioral health workers in relation to California's population.
  - Support and/or supplement a provider directory.

Figure 2 - CA Race/Ethnicity Trends in the Behavioral Health Workforce<sup>3</sup>



- **VT Governmental Agencies:**
  - Support new legislation or requests for state or federal funding for new programs.
  - Improve adequacy of, and access to, public health workforce and public services.
  - Tracking licensure compliance.
  - Support state and federal reporting requirements.

<sup>3</sup> CA Department of Health Care Access and Information January 2023 Health Workforce Research Data Center Annual Report to the Legislature <https://hcai.ca.gov/wp-content/uploads/2023/02/Research-Data-Center-Annual-Report-January-2023-1.pdf>



Table 1 - List of Healthcare Workforce Use Cases

Use Cases / Topic / Quote	Who mentioned it / affiliation
Predict future areas of need for healthcare workers based on trends in healthcare (e.g., aging population, chronic conditions using APCD data) to inform educational programs (e.g., demand modeling)	<ul style="list-style-type: none"> <li>• Vermont State University</li> <li>• VT Dept. of Health</li> </ul>
Evaluate the pipeline of healthcare workers starting at the high school / regional technical education centers level by identifying existing training and educational opportunities and areas where these training opportunities are lacking.	<ul style="list-style-type: none"> <li>• VT Dept. Of Labor Economic and Labor, Market Information Division</li> </ul>
Provide information to individuals regarding healthcare career pathways and salaries to entice/inspire individuals to pursue these careers and to stay in VT.	<ul style="list-style-type: none"> <li>• VT Dept. Of Labor Economic and Labor, Market Information Division</li> </ul>
Evaluate outcomes of educational and funding programs (e.g., scholarships, loan forgiveness, employer sponsored) - is the student engaged in the workforce, where are they working, etc. What are the most effective paths, how do educational programs focus on the best programs that ensure success in completion of programs and retention in the workforce.	<ul style="list-style-type: none"> <li>• Vermont State University</li> <li>• Vermont Student Assistance Corp.</li> </ul>
Perform workforce demand modeling, assess future workforce demands. Is workforce supply meeting the demand - compare workforce demands with graduating students and residents.	<ul style="list-style-type: none"> <li>• VT Association of Hospitals and Health Systems</li> <li>• VT Medical Society</li> <li>• Vermont Business Roundtable</li> </ul>
Look at shortage areas for potential opportunities for educational program expansions. Evaluating the demand for specific clinical areas of shortages (e.g., by specialty, licensure, geographically) coupled with educational programs and their waitlists for students to enter the programs.	<ul style="list-style-type: none"> <li>• Vermont State University</li> </ul>
Track availability of openings or availability of clinical placements for students pursuing degrees or licensure in healthcare. Provide students with practical experience to prepare students for "what they are getting into" to help with retention.	<ul style="list-style-type: none"> <li>• Vermont State University</li> </ul>
Assess shortages in specific specialties or individuals with specific licensures and certifications by region, what the current workforce is currently vs. what is needed. Develop benchmarks for positions needed to aid in evaluating shortage designations. Include non-certified, non-licensed workforce (e.g., personal care attendants)	<ol style="list-style-type: none"> <li>1. Department of Financial Regulation</li> <li>2. VT Dept. of Health, Division of Health Statistics</li> <li>3. VT Dept. of Health</li> <li>4. Office of Trauma Prevention</li> <li>5. VNAs of Vermont</li> </ol>
Evaluate workforce stability; turnover, attrition (to include individuals taking on a new role in administration), and retention by facility/organization/practice and by type of staff including predicting potential future turnover (e.g., aging workforce).	<ol style="list-style-type: none"> <li>6. CA Department of Health Care Access and Information (HCAI)</li> <li>7. VT Dept. of Correction, Health and Wellness Division</li> </ol>

Use Cases / Topic / Quote	Who mentioned it / affiliation
Define, measure, and track vacancies, at the position and FTE level (e.g., per diem positions)	8. VT Dept. of Mental Health 9. VT AHS, Health Care Reform 10. Primary Care Association & VT Rural Health Alliance.
Analysis of individuals' education and licensure to evaluate whether they continue to work in the healthcare field, that they are working to their level of licensure and/or whether they are no longer working in healthcare, and if so, where are they currently working.	11. National Consortium (RI dashboard demonstration)
Evaluate the progression of individuals education and licensure levels.	12. National Consortium (RI dashboard demonstration)
Licensing Data: Evaluate providers licensed in VT and whether they are still practicing or whether they are just maintaining their license and accounting for individuals that have more than one license.	13. VT Dept. of Health, Division of Health Statistics
Licensing data: tracking whether practicing individuals have a valid and current license and collection of information on non-licensed professionals. New legislation Peer Certification and tracking these individuals.	14. AHS, Health Care Workforce Data Center 15. VT AHS, Health Care Reform 16. Office of Trauma Prevention
Evaluate network adequacy and access to care.	17. VT Association of Hospitals and Health Systems
Evaluate changes in how services are provided and who is providing the services (e.g., due to the pandemic, telehealth services increased with many providers located outside of VT).	18. VT Dept. of Health, Division of Health Statistics
Analyze health equity data among the healthcare workforce focusing on equity, inclusion, and diversity	19. Office of Trauma Prevention
Evaluate whether the diversity of the healthcare workforce meets the needs of the Vermont population (e.g., race, ethnicity, sexual orientation, gender identify)	20. Office of Trauma Prevention 21. VT Dept. of Health, Division of Health Statistics
Partner with neighboring states to be able to include out of state providers in the data since many Vermonters receive care from NH and MA.	22. VT Dept. of Health, Division of Health Statistics
Use data to support / supplement a provider directory	23. VT GMCB
National data sources do not always accurately reflect the Vermont landscape (e.g., CMS data showing that VT is over-resourced in nursing)	24. Vermont Healthcare Association
Use the data to help get additional State or Federal resources and funding	25. VNAs of Vermont
Compare benchmarks across states and against national benchmarks.	26. Workforce Development & Recruitment

## CHAPTER 2: DATA SOURCES AND PRIORITIZATION

### Summary

During the stakeholder engagement process, Vermont stakeholders and members of the National Consortium provided descriptions of existing healthcare workforce data that are either being collected by a VT state agency, institution, or organization or available nationally. Members of the National Consortium also provided insight into additional data sources and data collection efforts that they have pursued or plan to pursue to develop a rich healthcare workforce data warehouse. With over 20 identified and discussed potential data sources, key recommendations to ensure a successful implementation and ongoing operations include:

- Integrate data from multiple sources, including professional licensure data, Vermont’s healthcare workforce census, labor market information, and educational institution data.
- Prioritize readily available datasets, those that are well-documented, and those that will support the most use cases.
- Implement a three-tiered approach to data integration: short-term (year 1), medium-term (year 2-3) and long-term (year 4-5) data sources.
- Seek opportunities for additional data collection or to expand on existing data collection efforts.

The goal of these data collection and integration recommendations is to ensure a smooth implementation and the development of a successful operational data strategy.

### Phased Approach to Data Source Integration

**Data Prioritization:** [Table 2](#) lists the 22 data sources that were identified during both the VT stakeholder calls and National Consortium meetings. [Appendix A](#) describes each data source in more detail, including the type of data contained in each data source, frequency of data collection and updates, who currently has access to the data, and whether the data is currently shared with other VT stakeholders.

Identified data sources were prioritized based on the following considerations:

- Importance to identified use cases:  
Data sources varied in how many use cases they could meet. The more use cases the data set could fulfill, the higher the priority for integration.
- Availability:  
Data sources with fewer data sharing limitations, and which were already being shared with AHS or other state agencies, were given a higher priority.
- Readiness for integration into the data center:  
Data sources already normalized in a machine-readable format, with existing documentation in the form of a data dictionary, were given a higher priority for data collection.

Based on these priority considerations, available data sources were categorized into a three-phased approach for ingestion and integration into the HWDC. Further work during the design phase will help confirm this data collection plan.

- **Phase 1: Short-term (Year 1):**

1. State Health Care Workforce Licensure and Licensure Survey Data (VT Dept. of Health): This is the highest priority data source due to its relevance to multiple use cases and readily available documentation. While some legal and data sharing questions need to be addressed, the potential value makes it worth pursuing immediately.

This data source would allow for tracking licensed professionals over time, including demographic characteristics. This data source will support all 3 types of priority use cases.

2. Economic Data (VT Dept. of Labor), showing counts of all employees in the healthcare industry.

This data source also will be a fundamental component for supporting all the priority use cases, as it includes actual employment information over time and key metrics for tracking career progression (e.g., wages).

- **Phase 2: Medium-Term (Years 2-3):** See Table 2 for a full list of all data sources recommended for ingestion and integration in years 2-3. These data sources are lower priority than the short-term data sources due to factors such as:
  - Fulfilling fewer identified analytic needs and use cases
  - Lacking readily available documentation
  - Having additional data governance restrictions

- **Long-Term (Years 4-5):** The remaining data sources are recommended for future data ingestion and integration in the HWDC for a variety of reasons: complexity of the data, fewer use cases, unclear data governance and path to data sharing.

## Enhancing the Collected Data

Based on recommendations from states that have already implemented healthcare workforce analytic platforms, Vermont should consider ways to enhance, extend, or improve existing data sources. Key strategies to enhance data collection efforts for the HWDC recommended from other states include:

- **Expanding Amount of Data Collected:**
  - Evaluate existing data collection processes to identify opportunities for gathering additional relevant information. This includes collaborating with identified data providers to explore the possibility of sharing more comprehensive data sets that

- align with analytic needs.
  - Review and potentially expand existing surveys to capture missing information. Participants of the National Consortium provided examples of their own surveys to help with this effort. An example of one such survey used by the California's Department of Health Care Access and Information can be found here: <https://hcai.ca.gov/wp-content/uploads/2023/03/HCAI-Health-Workforce-License-Renewal-Survey.pdf>.
- **Simplify Data Collection Process:**
    - Evaluate mechanisms used to collect data and simplify the process, if possible, to encourage participation in providing the data for a more complete and comprehensive data set.
    - Incorporate a survey directly embedded into the licensing renewal process tool would improve data by increasing response rate. The distinction here is between direct display of Health Professions Survey questions on the re-licensure window as opposed providing a link and redirecting to another web-page to complete the "health professions survey".

Table 2 - List of Healthcare Workforce Data Sources

Data source	Department /Agency Owns Data	Data Source Description	Rec'd Phase 1: Year 1 2: Years 2-3 3: Years 4-5	Data Dictionary	Data Sharing Limitations
<a href="#"><u>VT Healthcare Workforce Survey and Professional Licensure Data</u></a>	VT Dept. of Health	Location(s) of practice, specialty, type of practice setting, and the number of hours worked per week.	1	X	No large data-sharing agreements exist with other Vermont state agencies. Sharing raw data is challenging due to protected values like date of birth. Sharing requires specific guidelines and legal involvement.
<a href="#"><u>Economic data (unemployment rates)</u></a>	VT Dept. Of Labor - Economic and Labor Market Division	Census count of all employees within the healthcare industry. The data includes various types of employees.	1	X	No
<b>Occupational Information - Bureau of Labor Statistics</b>	VT Dept. Of Labor - Economic and Labor Market Division	Detailed occupational-level information and has advanced coding systems to distinguish roles such as advanced practice nurses and registered nurses.	2		No
<b>Workforce Placement Data - VT State University</b>	Vermont State University	Employment data through surveys and Equifax, using credit data to verify employment and employer details. Data supports job placement efforts, particularly for healthcare students graduating into related fields.	2	X	Limited Sharing, cannot share individual student data.
<a href="#"><u>National Center for Education Statistics (NCES)</u></a>	Nat'l Center for Education Statistics	High-level data on primary and secondary education, including by type of program	2		N/A
<a href="#"><u>IPEDS (Integrated Postsecondary Education Data System)</u></a>	U.S. Dept of Ed. Nat'l Center for Education Statistics (NCES)	IPEDS gathers information from every college, university, and technical and vocational institution that participates in the federal student financial aid programs. # of students enrolled, staff employed, dollars expended, and degrees earned.	2		N/A
<a href="#"><u>NPPES NPI Registry</u></a>	U.S Centers for Medicare & Medicaid Services (CMS)	NPI Registry Public Search is a free directory of all active National Provider Identifier (NPI) records. Healthcare providers acquire their unique 10-digit NPIs to identify themselves in a standard way	2		N/A

Data source	Department /Agency Owns Data	Data Source Description	Rec'd Phase 1: Year 1 2: Years 2-3 3: Years 4-5	Data Dictionary	Data Sharing Limitations
		throughout their industry.			
<a href="#">CMS Clinician and Hospital Data</a>	U.S Centers for Medicare & Medicaid Services (CMS)	Useful information about doctors, clinicians and groups, affiliations, commonly performed procedures.	2		N/A
<a href="#">FY25 Hospital Budgets</a>	VT Green Mountain Care Board (GMCB)	For each VT Hospital, lists number of FTEs by position.	2	X	No
<a href="#">Labor Force Employment and Wage Data</a>	VT Dept. Of Labor	Detailed, identified historical wage and employment history information. They gather quarterly wage data from all employers in Vermont covered under the unemployment insurance program, likely encompassing a significant majority of the state's healthcare workforce.	3		Limited sharing. There is a large amount of sensitive data; consider MPI
<a href="#">Dept. of Corrections Staffing Data</a>	VT Department of Corrections	VT DOC staffing data such as Demographics, staffing numbers, Vacancy and Turnover data, sum of Overtime, Standby and Sick hours, and Hire and Exit numbers.	3	X	No
<a href="#">State Wage Interchange System (SWIS)</a>	VT Dept. Of labor	Quarterly wage data from all VT state agencies	3		Access to raw data is strictly limited to the WIOA core. VT Dept of Labor is part of the SUIA and holds the SWIS agreement.
<b>VT Hospital Staffing Data (VHHS)</b>	VT Association of Hospitals and Health Systems	Workforce data collected from hospitals. The data informs policy decisions, particularly regarding workforce trends and challenges, which was disrupted during COVID-19.	3		Data sharing requires approval from both the hospitals and the board of directors. The survey is voluntary, with less than 50% of hospitals reporting annually.
<b>VNA's of Vermont - Vacancy and Turnover Data</b>	VNAs of Vermont	Vacancy and turnover rates.	3		
<b>Public workforce development initiatives data</b>	VT Agency of Human Services		3		
<b>Mental Health Services</b>	VT Dept. of	Staffing data from designated and specialized	3	X	No known limitations

Data source	Department /Agency Owns Data	Data Source Description	Rec'd Phase 1: Year 1 2: Years 2-3 3: Years 4-5	Data Dictionary	Data Sharing Limitations
<b>Staffing Data</b>	Mental Health	service agencies that DHMH oversees. Includes total # of staff positions and total # of staff vacancies - from 12 community partner organizations and agencies.			
<b>Hospital Staffing Data</b>	VT Green Mountain Care Board (GMCB)	Staffing and full-time equivalent (FTE) data for Vermont's 14 hospitals. Staffing levels, FTE counts, turnover rates, and vacancies, categorized by hospital, department, and service area, covering clinical and nonclinical roles.	3		Few
<b>VT Medicaid Provider Management Data</b>	Department of Vermont Health Access (DVHA)	All healthcare providers in Vermont eligible to be paid by Medicaid - NPI, taxonomy, physical address, accepting new patients, gender, accessibility, ages of patients seen, languages.	3		
<b><u>VT Agency of Education Data</u></b>	VT Agency of Education	Student enrollment numbers and background characteristics, student performance, and financial expenditures. Seems to be mostly elementary and middle schools	3	X	
<b>Statewide Longitudinal Data System</b>	VT Agency of Education	Still under development - The statewide longitudinal data system tracks K-12 education outcomes.	3		There are protections to safeguard student information, especially in higher education settings.



## Looking ahead: Legislative Recommendations to Ensure HWDC Receives Useful Data

Section 22A of H. 707 proposes several workforce development initiatives that may increase focus on reliable data sources:

- 1) Establishment of the Office of Workforce Strategy and Development
- 2) Restructuring the State Workforce Development Board
- 3) Formation of a Task Force for Data Management
- 4) Creation of a Special Oversight Committee to review and revise workforce-related statutory language.

These initiatives could lead to targeted policies addressing specific healthcare-workforce needs, such as professional shortages. As a centralized repository for all Vermont's healthcare workforce data, complete with data analytic capabilities, the HCDW could facilitate essential analysis and reporting to support informed decision-making in workforce development and training programs.

To further support the HWDC's mission, we recommend considering legislation that empowers AHS to enter into data sharing agreements with other state agencies for established research, analytic and public reporting purposes. Furthermore, state agencies and organizations should be directed to expand data collection provisions to further enhance data resources.

Stakeholders noted opportunities such as:

- Collecting certain data from licensed healthcare professionals during license renewal processes
- Employment status, location, and specialty of healthcare workers.
- Enrollment and graduation rates from healthcare training programs.
- Job vacancies and hiring trends in the healthcare sector.

Directions to collect new data or new authority to share existing data should include conveying authority to AHS to develop a comprehensive data governance structure, terms to ensure the confidentiality and protection of sensitive information.

## CHAPTER 3: DATA GOVERNANCE

### Summary

Vermont stakeholders emphasized the need for a robust yet flexible data governance framework for the Vermont Healthcare Workforce Data Center (HWDC). Key recommendations include:

- Ensuring diverse stakeholder representation to advise on the strategic direction of the data center.
- Housing the HWDC within the Agency of Human Services (AHS) to leverage existing data infrastructure and regulatory oversight.
- Implementing formal data sharing agreements and data governance policies.
- Creating a tiered data access model with role-based permissions.
- Strategically mapping HWDC data to other state data assets while addressing privacy and competitive concerns.

These data governance recommendations embrace essential privacy and security safeguards while providing access for state priorities and public information. Ongoing stakeholder engagement as part of a five-year implementation plan will be crucial to refine the initial HWDC data governance approach.

### Data Governance Roles

**Administering Entity:** The HWDC should be administered by a state entity with experience managing large datasets and data sharing agreements. Based on stakeholder feedback, a dedicated unit within AHS seems well-positioned to take on this role given AHS' role in other healthcare reform efforts and statewide health care planning. AHS also expressed initial interest in hosting the HWDC in the Unified Health Data Center, subject to further analysis and investigation as the project becomes more defined.

**Governance Structure:** The HWDC unit should be well-integrated with existing State data management processes. At the same time, similar initiatives have developed an engagement process that seeks input from data owners, data creators and data users.

The National Consortium representatives described their experience with multiple groups providing focused opportunities for direction, oversight and stakeholder engagement as well as technical guidance. Based on their experiences, the HWDC governance structure could include the following components, in addition to leveraging existing AHS processes:

- **Data Stewards:** Comprised of stakeholders from relevant Vermont state agencies, healthcare providers, educational institutions, and workforce organizations whose data is being collected by the HWDC. This committee would provide strategic direction, advice and oversight.
- **Technical Advisory Group:** A group of data experts and IT professionals who will provide technical guidance on data management, security, and integration processes.

- **Public Stakeholder Advisory Panel:** Including representatives from various healthcare sectors, patient advocacy groups, and other relevant stakeholders. This panel would provide feedback and insight to the data analytic plans, the public reporting agenda and tools and resources available to the public.

## Data Governance Framework

The data governance framework should focus on establishing clear policies and procedures to ensure data quality, security, access, and compliance. Stakeholders highlighted several key elements that should be included in the HWDC data governance plan:

- **Data Governance Documentation:**
  - Data sharing agreements (DSA's) and data use agreements (DUAs) between the HWDC and data contributors/users which clearly specify permitted uses, privacy protections, and security requirements.
  - A data dictionary and/or metadata repository detailing data elements, definitions, quality, and lineage is critical given the diverse data sources and the need for consistent interpretation.
- **Data Governance Policies:**
  - Data quality assurance processes to validate data and ensure consistency across sources.
  - Procedures to track data access and use, with process to revoke access if terms of the DUA are violated.
  - A data retention and destruction policy aligned with relevant regulations.
  - Processes for reviewing and approving new data uses and linkages.
  - Processes for managing role-based user access, including credentialing, system authorizations, security and documentation.
- **Data Access:**
  - **Access Control:** Create tiered, role-based access controls to ensure that only authorized personnel can access specific data sets and reports. This will be crucial in maintaining data confidentiality and integrity. Potential access levels, pursuant to approval processes, include:
    - Public access to aggregate, de-identified data and reports
    - Restricted access to more granular data for approved users,
    - Administrative access for system management
  - **State Agency Capacity:** Help desk, user support, documentation repository and version control
  - **User Training:** Providing comprehensive training programs for all restricted and administrative access users on data governance policies, data security best practices, and the ethical use of data.
  - **Fees:** Consideration of potential fees for access for non-state entities or commercial use.

## Other Data Governance and Integration Recommendations

Other recommendations related to data integration, include the following:

- **Standardized Data Formats:** Adopt standardized data formats, valid value sets and terminologies, where possible, to ensure compatibility with other state data systems (e.g., race and ethnicity categories).
- **APIs and Data Connectors:** Develop APIs and data connectors to facilitate real-time data exchange and integration with other state databases, such as VHCURES (Vermont All-Payer Claims Database (APCD)) and other relevant health and workforce data systems.
- **Cross-State Collaboration:** Explore data sharing with neighboring states, particularly New Hampshire, given cross-border workforce patterns.
- **User Group Meetings:** Establish a user group composed of representatives from different institutions to share insights, challenges, and solutions regarding data sharing and use of the HWDC.

## Data Governance Challenges

Stakeholders also identified several challenges related to data governance, including:

- Need for a common identifier or master person index to link some datasets while protecting privacy.
- “Small N” problem in Vermont. As the second least populated state in the country, Vermont has a similarly small number of hospitals, healthcare workforce training programs, and minority citizens/residents. Special attention will need to be given to protecting against the potential identification of individuals while providing important information on the healthcare workforce in the State.
- Legal and regulatory constraints on data sharing, particularly for education data (Family Educational Rights and Privacy Act (FERPA)) data.
- Healthcare providers’ concerns about sharing detailed vacancy and workforce data.
- Limited resources on hand at AHS to support HWDC data governance. State staff and technology resources will need to be augmented and expanded to effectively manage and oversee the work.
- National Consortium members emphasize that this is a process to conduct slowly and deliberately as the project builds trust among data contributors and concerned parties. The technical build should be carefully staged, including iterations for data quality at multiple points.

### **Data Linkage Strategy**

Stakeholders noted that linkages are essential for proper integration and analysis. Unique identifiers need to be used for each institution. For example, a longitudinal analysis of education and career progress would benefit from a uniform coding system for Institutional IDs, Program IDs, and student/ Graduate IDs. This will also require that all files have the same format, column names and naming conventions and development of indices that unify the data across the various data sources (e.g., master person index) to allow the tracking of individuals throughout the workforce pipeline and over time.

## CHAPTER 4: DATA SECURITY, ARCHITECTURE AND TECHNOLOGY

### Summary

The technological infrastructure currently in development by AHS will likely accommodate the business needs of the VT HWDC. To ensure that those needs are fulfilled, the HWDC should focus on three critical workstreams in preparation for developing a solution:

- **Developing data governance:** As discussed in [Chapter 3, Data Governance](#), proper governance of data is crucial to successful integrated data systems (IDS). The challenge for the HWDC will be harmonizing governance across disparate data sources which have different levels of authorizable access
- **Creating a data model:** Creating a framework for the lifecycle of data from ingestion to distribution will allow more agile development of data products. Understanding the output required to answer stakeholders' most pressing questions will involve creating a suite of definitions. For example, there will likely be more than one definition of a full-time equivalency (FTE) and primary care depending on the use case.
- **Gathering functional requirements from key data stewards:** Finally, getting more detail from the stewards of priority data sources will provide essential functional requirements for the solution. This will help determine the variety of source file types, potential methods for ingestion, as well as the cadence for new and refreshed data. This will help the HWDC make its needs as tangible as possible before beginning to implement a solution.

## Security

Security for IDs such as the VT HWDC should include considerations related to:

- Protecting individuals' privacy
- Administering data governance policies
- Ensuring robust monitoring of data throughout its lifecycle

As discussed in [Chapter 3, Data Governance](#), one key to successful IDs rests with meaningful data governance. The policies and standards established should drive the security requirements of the state's solution.

At a minimum, the security requirements should follow certain essential conventions:



Allow **role-based access** to the solution. Developing appropriate access based on a user's approved *role* will help maintain fidelity between appropriate access authorized by data governance protocols with end users – whether they are submitting information, accessing output, or providing administrative functions for the solution.



Provide options for **element level security**. Having the flexibility to apply access to data elements on a row and/or column basis, in addition to those applied at the data source more globally, will provide the most flexibility in brokering authorized access to approved user roles.



Include tools for data **encryption** at rest and in motion, which provides additional security in preventing data leakage and unauthorized access.



**Auditing** and **monitoring** of the solution will be critical to demonstrate compliance with data governance and should allow for the traceability and lineage of data through their lifecycle.

As data sources are reviewed for integration in the HWDC's solution, constraints on use must be documented and incorporated into the solution. Stakeholders identified varying levels of allowable uses, ranging from those available in the public domain (e.g., [aggregated results from provider censuses](#)) to those with more constraints (e.g., [State Wage Interchange System](#)). Having security mechanisms in place that work together at the data source, data element, and user role levels will all need to be harmonized to ensure governance may be applied throughout the solution.

Many stakeholders identified the preference to be able to access data sets, reports, and interactive tools outside of a secure analytic environment. From a security standpoint, all data outputs should be carefully configured so that information provided minimizes the risk of identifying individuals or other sensitive information.

## Architecture and Technology

The efforts to build and deploy the Vermont Unified Health Data Space (VUHDS) are well-

aligned with the architectural and technological needs for the VT HWDC. The provider directory component of the envisioned resource will be a dependency for the VT HWDC. To fulfill the stated business needs of stakeholders, the HWDC should also include a sophisticated, highly configurable website to provide a variety of data products that includes streamlined, self-service capabilities.

### **Recommended infrastructure**

Like many other states, the State of Vermont is pursuing more modern technological solutions. Most of these solutions involve cloud-based tools designed to be modular and highly interoperable.

At its core, the HWDC will require:

- Mechanisms to ingest a variety of data types through multiple different channels.
- A data warehouse for extracting, transforming, and storing data and related material.
- Tools to access and distribute data through multiple channels.

The state's current initiative to deploy a modular, technologically agnostic data lake, data warehouse, and analytics platform would likely fulfill these requirements. Extending these resources to fulfill the needs of the HWDC should be technologically straightforward and would be a worthwhile extension of the resources.

Establishing dedicated pipelines for new data streams, integrating existing data when possible and appropriate, and developing customized data structures to accommodate the definitions that may be specific to HWDC's business needs will require customization for the HWDC. These requirements should be collected and incorporated into the State's procurement and IT development strategy.

Stakeholders frequently mentioned that current data sources are highly fragmented and that bringing these data together in one place would be extremely helpful. Maintaining a stable identifier for the wide range of providers will be most successful if it works with a well-designed provider directory. The business needs for the directory will likely be different for the HWDC than other use cases. Therefore, these requirements should be documented and included in any artifacts related to procuring a provider directory.

Finally, interviews with stakeholders revealed substantial differences in preferred methods and formats of accessing data and information that the HWDC will produce. Some preferred accessing data, reports, and dashboards either directly or through a secure, cloud-based 'enclave' environment. Others preferred static, executive level summaries that could be emailed on a regular cadence.

Being able to accommodate so many use cases would be more successfully satisfied through a website that allows for sophisticated configuration. When considering the development of the website, the state should consider features for stewards to submit and monitor data, for data users to access data in several ways (including APIs), and potentially mechanisms for collecting fees, if determined to be implemented for the VT HWDC.

## **Data Model**

The utility of the information that the VT HWDC can provide will rely in part on its face validity. In other words, the HWDC will need to make sure it maintains fidelity to the definitions and constructs at play for individual use cases.



Mappings from source data to definitions should be carefully developed in partnership with stewards, including its metadata and regular procedures to keep them up to date. Some development cycles forget to complete this step, instead jumping right to the collection of data. This can result in substantial rework of pipelines and data flows as additional requirements are enveloped by a solution or additional details of requirements emerge when data products are not calibrated to their intended use.

The metadata and data architecture should leverage the state's existing master person index to help the data assets work as seamlessly as possible with other state data assets. The data model should ideally work in concert with data governance to address the potential pitfalls identified by participants:

- risk of re-identifying individuals due to small numbers
- ensuring relevant, timely benchmarks (across states and nationally)
- understanding if a licensed provider is still practicing (and how much)

Establishing a model for ideal outputs will also help identify areas of focus for changing or otherwise supplementing data collections to help fill in holes. For instance, determining feasible ways to share data across state lines.

Table 3 - Recommended requirements for VT HWDC Solution

Requirement	Description	Considerations for HWDC
Accommodate multiple types and flows for data ingestion	Ability to ingest data in multiple formats (e.g., text, Excel, API, SFTP).	Stakeholders mentioned data source types such as spreadsheets, databases, and national data sets. These different types of source data may require different tools to bring into the HWDC.
Accommodate multiple types and flows for data output	Ability to distribute data products in multiple formats (e.g., text, Excel, API, SFTP).	Stakeholders were varied in their preferred means of access (e.g., enclave, website, email) to several types of data products (e.g., dashboards, data files, standard reports).
Auditing and monitoring	Provides detailed insight into who is accessing which data to ensure compliance with security and privacy protocols, as well as to establish compliance with regulatory requirements.	Data resources identified by stakeholders included those that are readily shared and those that would require data use agreements to codify constraints on its use.
Data model	A data model maps data inputs to their outputs, including a set of definitions that will be required to differentiate between use cases (e.g., the definition of primary care) and any necessary reference data required to produce outputs.	Many desired uses of HWDC overlapped among stakeholders, however there was also important nuances in definitions being used, which in some cases are determined by law or other regulations.
Element level security	Ability to apply more refined and complex access to data, which can restrict access to a row and/or a column of data.	Stakeholders indicated requiring different levels of access for different components. More sophisticated security protocols would provide as much authorized access as possible while maintaining appropriate governance.
Encryption	Transformation of identifying data into a meaningless version so if there were an unauthorized interception of data, it would be less vulnerable to misuse.	This is a standard convention for optimizing security and privacy protections.
Interactive website	A modern website that allows a great deal of user configurations will be critical for providing user-friendly data products.	Stakeholders identified a wide variety of desired data products (e.g., reports, data files, and interactive dashboards). A highly configurable website that allows embedded graphics and dashboards will support a high-quality and effective user experience.
Master person index	A master person index helps reconcile identities across data sources in a consistent and efficient way.	Tracking workforce longitudinally will be critical to several use cases highlighted by stakeholders, such as tracking workforce progression and return on investment from incentive programs.
Meta data management	Organizes information about data resources.	Maintaining information about the data resources being managed will help ensure a smooth, compliant solution that is kept up to date.
Modular solutions	Technologies used to implement the business needs of the HWDC should be developed in consideration of how components can be used in conjunction with other architecture and/or extended for similar state business needs.	The State of Vermont's Agency of Human Services is in the process of developing components of a technology stack as it develops the Unified Health Data Space. This architecture will likely fulfill many of the VT HWDC's requirements.
Provider directory	Provider directories differ in their functionality, ranging from focused identity management to more comprehensive services (e.g., credentialing, practice characteristics).	A source of truth for providers will be a critical dependency for the VT HWDC. The State of Vermont should include VT HWDC use cases if it decides to procure a statewide provider directory.
Role-based access	Approved types of users should be categorized together based on approved, authorized need.	This is a standard convention for optimizing security and privacy protections.

## CHAPTER 5: STAFFING

### Summary

Stakeholders highlighted the need for both specialized and general staffing resources to support the data center's functionality, accessibility, and utility. This chapter outlines the recommendations for essential staffing resources.

### Staffing Recommendations for the HWDC

Stakeholders identified five major staffing categories.

1. Database Administrators
2. Analyst Resources
3. Project Management
4. Training and Technical Support Specialists
5. Subject Matter Experts

A description of each staffing category and estimated level of effort in the first year of HWDC implementation, follows:

	<b>Role Description</b>	<b>Estimated FTE (Yr 1)</b>
<b>Database Administrators</b>	<ul style="list-style-type: none"> <li>• Configure, deploy, maintain, and optimize the secure AHS/Unified Health Data Space infrastructure.</li> <li>• Ensure seamless integration of various data sets from various entities and in various formats, including linking datasets using a common identifier or master person index.</li> <li>• Oversee the development and implementation of effective data governance policies and procedures, including agreements governing data collection and data access.</li> </ul>	1.0
<b>Analysts</b>	<ul style="list-style-type: none"> <li>• Skilled in SQL, Tableau, Power BI and other data visualization tools to work with the raw data, validate data during and after incorporation into the environment.</li> <li>• Create standard reports and dashboards for a variety of audiences.</li> </ul>	1.0 (beginning 6 months after start)
<b>Project Management</b>	<ul style="list-style-type: none"> <li>• Oversee the project plan, including all implementation and operations activities.</li> <li>• Support the Administrator to Implement and enforce all data governance policies to ensure data is collected, shared, and used in appropriate ways.</li> <li>• Facilitate all data access requests and data use agreements.</li> <li>• Liaise between different stakeholders to align the data center's capabilities with user needs and State requirements.</li> </ul>	1.0
<b>Training and Technical Support</b>	<ul style="list-style-type: none"> <li>• Access to training and help desk support to answer questions and assist with data interpretation.</li> </ul>	0.25

<p><b>Subject Matter Experts</b></p>	<p>Specialized staff to be available on an as needed basis such as:</p> <ul style="list-style-type: none"> <li>• Legal counsel to advise on state laws and rules affecting data sharing, privacy, and data use concerns, as well as content for data sharing agreements.</li> <li>• Web-developers to build and maintain a public-facing HWDC website.</li> </ul>	<p>0.5</p>
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## CHAPTER 6: FINANCING AND SUSTAINABILITY

### Summary

Stakeholder discussions reflected a high degree of excitement about and enthusiasm for the HWDC, centering on the opportunities to fill knowledge gaps and improve state health and labor workforce insights. Looking ahead, the HWDC team will need to develop a financing plan to support the implementation and ongoing costs of the HWDC and work with stakeholders to build support for the selected financial model.

National Consortium members reported on several financing strategies used to start and sustain their IDS. See “Best Practices in Data Integration: Compiled for the VT HWDC”, delivered on April 10, 2024, for a detailed discussion. The HWDC might consider the following as the formal planning process gets underway:

- **State budget appropriations:** A recurring allocation from the state budget would provide a stable financial foundation for the HWDC. This funding should be included in the annual budget of the Vermont Agency of Human Services (AHS) to ensure continuous support.
- **Federal grants or funding opportunities:** The HWDC could actively pursue federal grants and funding opportunities that support workforce data collection and analysis. Programs from agencies such as the Health Resources and Services Administration (HRSA) and the Centers for Medicare & Medicaid Services (CMS) can provide substantial financial support.
- **User fees for certain types of data access or reports:** the HWDC could implement a tiered fee structure for non-state users. Fees can be based on the type of data accessed, frequency of access, and user category (e.g., academic researchers, private companies).
- **Private Grants, Trust, and Foundations:** Private grant dollars can also substantially contribute to the operational costs of the HWDC. Examples of private grants include the Robert Wood Johnson Foundation which typically supports analyses that highlight health equity and healthcare access issues and college grants/endowments that focus on current state priorities and providing a data source for graduate students to conduct research.

Appendix A

Data Sources – Additional Information

Data source	Additional Information about the Data	Update Frequency	Who provides?	Who currently has access to this dataset?	Is this data currently shared with any other VT state agency?
<a href="#">CCV (Community College of Vermont data)</a>	<p>Enrollment Data by Program: broken down by specific academic programs.</p> <p>Disaggregated Demographics: details for students of color and information on students' gender identity.</p> <p>Employment Data: Employment status is collected through an annual graduate survey, with less than 100% response so this section of the data set is incomplete Partnership with Equifax:</p> <p>Collaboration for employment data verification with a processing time of 3-6 months</p>	<p>Annual &amp; on a rolling basis</p>	<p>This is student-generated data and reports are generated through Equifax.</p>	<p>CCV Staff</p>	<p>No. CCV needs time to make decisions about what they can share with AHS</p>
<a href="#">VT Healthcare Workforce Survey and Professional Licensure Data</a>	<p>This does not include calculated variables, such as FTEs or age, or variables added during data processing e.g., county town codes for practice site locations.</p> <p>The data set includes protected values such as date of birth and plans for the next 12 months, which require careful handling and legal involvement for sharing agreements. Age is aggregated into larger groups for public release to protect individual privacy.</p> <p>Data collected depends on profession with data from different professions stored separately. Questions are changed over time, so data dictionaries from year to year may have minor differences.</p>	<p>Every 2 years during the license renewal period. The ending month and year of the 6-week renewal period vary by profession. e.g., dentists renew in September of odd years, and psychologists renew in January of even years, which is when the data for these professionals is</p>	<p>Collected directly from providers as they renew their license.</p>	<p>Health Care Workforce Census team Members and supervisor</p>	

Data source	Additional Information about the Data	Update Frequency	Who provides?	Who currently has access to this dataset?	Is this data currently shared with any other VT state agency?
<a href="#">Economic data (unemployment rates)</a> <a href="#">VT Department of Labor</a>		collected.  Administrative industry employment data is updated quarterly	Vermont employers	All releasable data is public. Micro data is governed by federal confidentiality agreements and not available to anyone outside the division.	
Occupational Information - Bureau of Labor Statistics		Occupational wage and employment data are updated annually; long-term occupation and industry projections are updated every two years.	Vermont employers	All releasable data is public. Micro data is governed by federal confidentiality agreements and not available to anyone outside the division.	
<a href="#">FY25 Hospital Budgets</a>	New data collection effort, only FY 2024 data is currently available.	Annually	VT hospitals.	The GMCB has access to this data but has authority to publicly disclose and / or share it.	It is not being shared with another agency. There would be few limitations/ challenges to sharing this data.
<a href="#">Dept. of Corrections Staffing Data</a>	Monthly reports from Wellpath that includes employee name, current status, change in status, In addition, Wellpath provides to our team via web-based dashboards data including employee swiped hours, authorized hours, facility, shift, employee type, employee position, FTE Productive, FTE Authorized, FTE Paid, FTE Assigned, Vacancy, Turnover, OT Hours, Non	Monthly reports Real-time dashboards	Vendor: Wellpath The Comprehensive Health Services vendor, Wellpath, is required to	DOC's Health, Wellness, and Engagement team DOC's Research and Data Unit.	

Data source	Additional Information about the Data	Update Frequency	Who provides?	Who currently has access to this dataset?	Is this data currently shared with any other VT state agency?
	Prod Hours and more. Most of these can be split by month or week, site, employee status, position		provide various data by contract.		
<b>Workforce Placement Data - VT State University</b>	Information includes:  # of students by degree program # of graduates Student professional licensure passage rates Employment rates	2 x per year in October and February.	Employment data is self-reported Other data comes from our database re: counts/passage rates	VTSU Data Team, Admissions, and Registration	
<a href="#"><u>Labor Force Employment and Wage Data</u></a>	The Department holds extensive data on employment and unemployment, including employer, employee, wage, and demand-related information. The information linked is more focused on unemployment insurance and claimant data rather than general employment data. The Department also collects state employment data for the UI program, including employer counts, employee numbers, and wages.	Quarterly	Information is collected from all liable employers in Vermont, including details such as employees' SSNs, names, gender, wages, employment status (hourly or salary), and hourly rate.	Only the Department of Labor employees have direct access to our data.	Information is shared with State partners based on their specific needs. For example, SSNs may be received from entities to provide aggregate wage data, or wage information may be shared with the Tax Department for crossmatching. However, direct access to data is not granted, nor is all information provided directly. If specific data is needed, it can be discussed how the Department might provide it.
<a href="#"><u>State Wage Interchange System (SWIS)</u></a>		Quarterly	The SWIS Clearinghouse is the central processing operation	Access to the dataset is restricted exclusively to designees of the	Aggregate data is provided for only the TANF and ICAN program at this time for annual reporting



Data source	Additional Information about the Data	Update Frequency	Who provides?	Who currently has access to this dataset?	Is this data currently shared with any other VT state agency?
			through which SWIS requests, queries, replies, and results are processed. WIOA core partners send requests files to the SWIS Clearinghouse, and the SWIS Clearinghouse looks for matches from information provided by other participating state and US territory UI agencies.	WIOA program core partner programs Aggregate data is provided for only the TANF and ICAN program at this time for annual reporting purposes as these programs are considered	purposes as these programs are considered Third Party Entities in the SWIS agreement.
<b>VT Hospital Staffing Data (VHHS)</b>	Annual counts of total FTEs and per diems at each hospital by specific clinical positions and as a facility total. Permanent separations, both including and excluding per diems and their associated turnover rates FTE reductions not attributable to separations (i.e. staff that transitioned to part time or to per diem Reasons for changing employment for voluntary separations	Annually, in January.	HR directors at hospitals	VAHHS, although the data is best characterized as an annual survey of hospital vacancies. Data are not uploaded to a dataset.	
<a href="#"><u>Mental Health Services Staffing Data</u></a>	No staffing data is collected via the DMH Monthly Service Report (MSR). DMH collected the following by program: a. Total number of staff vacancies. b. Total number of staff positions	Quarterly	Designated Agencies and Specialized Service	Internal staff only	No, DMH is unaware of any limitations to sharing these data with AHS Central Office or

Data source	Additional Information about the Data	Update Frequency	Who provides?	Who currently has access to this dataset?	Is this data currently shared with any other VT state agency?
			Agencies overseen by DMH		other AHS departments.
<b>Hospital Staffing Data</b>	Using Adaptive software, the number of "clinical" and "non-clinical" FTEs by hospital department and sub-department is collected. A data dictionary is not provided, it is assumed that the categories are self-explanatory and otherwise allow hospitals to provide the data how they best see fit.	Annually, in July.	The hospitals provide this data directly to the Board. We do minimal amount of vetting but largely rely on the hospitals for their accuracy.	The GMCB has access to this data but has authority to publicly disclose and / or share it.	It is not being shared with another agency. There would be few limitations/ challenges to sharing this data.