September 11, 2024

Dear Colleagues,

In 2018, the Vermont Talent Pipeline organized a healthcare collaborative to tackle the workforce shortages affecting the industry. A strong healthcare workforce is vital to Vermont's economy and the well-being of its residents. Using the Talent Pipeline Management framework, developed by the U.S. Chamber of Commerce Foundation, the initiative analyzes job demand data to create effective educational pathways for in-demand careers.

The VBR Research and Education Foundation oversees this initiative, with a strategic focus on the healthcare sector. By fostering innovative employer-led pathways and apprenticeships, the Vermont Talent Pipeline strengthens the state's workforce and economy.

This report provides an analysis of authentic employer job demand data for **the most critical healthcare technician roles** from 13 Vermont Hospitals and offers insights to help align training and education with job needs. The need for healthcare training access and affordability are a continuing challenge for a small state ranked as one of the highest high school graduation rates, and lowest state investment in post-secondary education. Key findings of this report include employer perspectives on:

- Severe Vacancy Rates
- Reliance on Contracted Workers
- Local Education Gaps
- Recruitment Obstacles

The operational and financial impacts on hospitals are significant, particularly due to the reliance on contracted workers. There is a growing interest in developing in-house talent through on-the-job training and academic partnerships, which can fill immediate vacancies, build staff loyalty, and increase retention. This approach fosters a supportive culture that promotes diversity, equity, inclusion, and economic independence. By focusing on both short- and long-term workforce needs, our shared goal is to create sustainable career opportunities while meeting the evolving demands of the healthcare industry.

The challenges outlined in this report require urgent and strategic action. We encourage you to connect with the VBR Foundation for guidance and partnership in developing sustainable education pathways together.

Most Sincerely,

Abby Stevens
Program Manager

Mary Anne Sheahan
Chief Talent Officer

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1. Introduction

The results of the needs assessment provide a comprehensive overview of the current and future workforce needs for six critical healthcare technician roles identified by Vermont Hospitals:

- Radiology Technician
- Respiratory Therapist
- Medical Lab Technician
- Medical Lab Technologist
- Surgical Technologist
- Mental Health Technician

This data and summary are crucial to support the training and education of healthcare professionals to fill these roles. Strategic recruitment and retention initiatives will be essential to mitigate the substantial workforce gaps identified in these roles to ensure high-quality patient care and operational efficiency in Vermont's healthcare system.

2. Methodology

A. Identification of Critical Healthcare Roles

To identify the most critical healthcare technician jobs, we conducted a poll at the Vermont Association of Hospitals and Health Systems (VAHHS) annual meeting. Hospital representatives were polled using a rapid-prototyping process facilitated by a QR survey tool. This process allowed us to quickly and efficiently gather data on the top five high-demand technician roles among hospitals in Vermont.

B. Survey Design and Distribution

Based on initial feedback, a response for each job was requested from hospital department chairs to produce the most accurate assessment. We subsequently distinguished between Medical Lab Technician and Medical Lab Technologist roles, categorizing them separately, because of education variances. The survey was launched across 13 Vermont hospitals during April and May of 2024. The survey collected detailed information on the current number of employees and vacancies for each identified role; and a forecast for full time equivalent (FTE) growth and replacement positions over the next two years (from April 2024 to April 2026). It is important to note that the survey data does not include contracted workers.

C. Data Collection and Analysis

The survey gathered data on several key aspects:

1. **Current Workforce and Vacancies:** Each hospital reported the current number of FTE employees and vacancies for the critical roles.

2. **Growth and Replacement Forecast:** Hospitals provided projections for growth and replacement FTE roles over the next two years.
3. **Education and Credential Requirements:** The survey collected information on the minimum education and credential requirements for hiring.
4. **Willingness to Offer Clinical Training:** Hospitals were asked if they were willing to offer clinical training to support education.

D. Assumptions

The following assumptions provide factors influencing the need for new and replacement positions in the healthcare sector, as well as strategies related to recruitment and retention.

1. **New Positions**: These represent the need for additional FTEs needed such as expansion of facilities and services, increased prevalence of illness, an aging population requiring more services, and higher patient census.
2. **Replacement Positions**: These account for FTE turnover to fill vacancies created by retirements, attrition, and internal transfers and promotions.
3. **Recruitment and Retention**: Each organization is actively implementing recruitment and retention strategies, which can be enhanced through shared decision-making and adoption of best practices.
4. **Economic Barriers**: The analysis recognizes that Vermont faces economic challenges impacting recruitment, including the cost and availability of housing, childcare, transportation, and the high tax burden, all of which are deterrents for potential workers to relocate to Vermont.

3. Findings

A. Vacancy Rates

The vacancy rate represents the percentage of unfilled positions, compared to the total number of jobs available. Vacancy rates are a vital indicator of workforce shortages. The results of this survey provide a comprehensive overview of the current and future workforce needs for critical technician healthcare roles in Vermont. This information is crucial for developing targeted strategies to address workforce shortages and support the training and education of healthcare professionals.

The research reveals that not all hospitals employed Mental Health Technicians (also known as Psychiatric Technicians) or Surgical Technicians. This finding highlights the variability in staffing needs and practices among different hospitals.

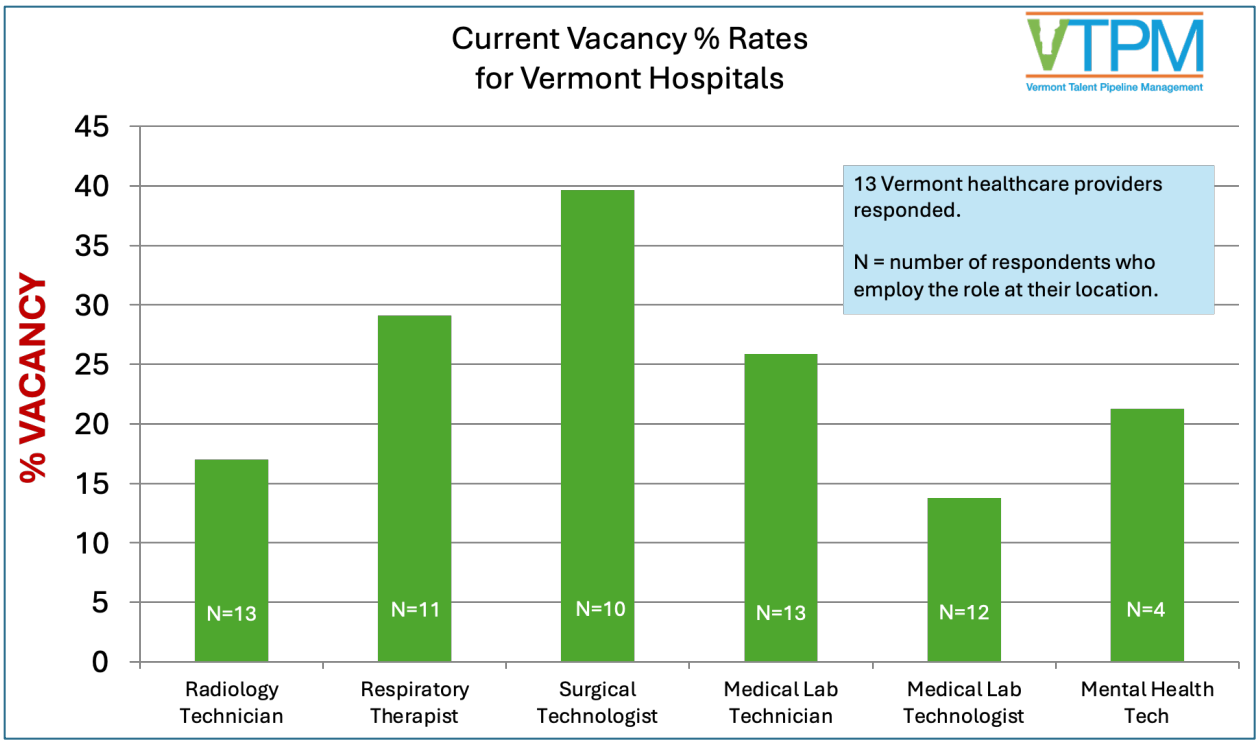

Figure 1: Healthcare Technician vacancy rates for six critical roles identified by hospitals in Vermont. "N" represents the number of respondents who employ the role at their location. Graph created by VBR Foundation/Vermont Talent Pipeline.

B. Employer Insights

Specific feedback provided by the department heads supports the following indicators:

1. Surgical Technologists:

The research revealed a 40% vacancy rate, a critical shortage indicating that nearly half of the Surgical Technologist positions are unfilled. For a short-term credential and no degree requirement, hospitals are commonly filling this role with travelers. This vacancy rate impacts hospital capacity to perform surgeries, leading to delays or cancellations of procedures, and increased workload for existing staff.

Without capacity to train others in house, some hospitals are turning to Licensed Practical Nurses (LPNs) to fill gaps in scrub tech and surgical tech positions. Others are using Registered Nurses (RN) to fill in, where RNs are highly skilled and function as the most critical role needed in hospitals, they are expensive, and traveler surgical techs can be even more expensive.

2. Respiratory Therapist:

The 29% vacancy rate suggests that almost one-third of these crucial positions are vacant. One hospital reports having a Respiratory Therapist position open for over a year. Another reports that when one position is filled, another one becomes vacant, and they can't fill it. This shortage poses serious risks for patient care, especially in managing respiratory emergencies or chronic respiratory conditions. It also impacts the hospital's ability to deliver timely and effective treatment. There is one Respiratory Therapy program in Vermont, with in-person classes in Williston. It serves up to 20 people and is not at full capacity.

3. Medical Lab Technician:

A 26% vacancy rate highlights a significant shortage for more than a quarter of all jobs. This shortage restricts the availability of laboratory services, crucial for both emergency and routine medical care. To effectively manage emergencies, hospitals must maintain minimum staffing levels, including an Emergency Room provider, a Radiology Technician, and a Medical Lab Technician. Due to constant vacancies, Vermont Hospitals competing for a limited number of graduates from neighboring states' educational programs.

For training options, a few organizations have been successful in upskilling phlebotomists into Medical Lab Techs with an associate's degree. Phlebotomy licensure is a short-term credential also in high-demand and short supply. There are online materials to prepare students for Phlebotomy exams; however, students also need a clinical training component to develop skills. The current shortage of Medical Lab Technicians compromises the availability of essential lab services, delaying diagnostic testing and impacting care.

4. Radiology Technician:

The vacancy rate for radiology technicians stands at 17%, indicating a significant need for pathway development in this field. To address shortages, facilities rely on traveling radiology technicians. Some organizations are implementing internal radiology training programs to enable employees to acquire additional credentials in various radiology modalities. Organizations are divided on their willingness to support clinical training, 50% in favor and 50% opposed.

A high proportion of traveling staff creates a bottleneck for mentorship and education within clinical settings, a challenge common to other technician roles. To mitigate these issues, one organization has hired a student coordinator to oversee clinical education opportunities and facilitate staff upskilling. Vermont State University in Williston offers the state's sole associate degree in radiology. A previous non-degree program in Rutland was discontinued when the board requirements changed. Associate degree programs in radiology are available at

neighboring River Valley Community College in New Hampshire and Massachusetts College of Liberal Arts (MCLA) in Massachusetts.

5. Mental Health Technician:

Mental Health Technicians account for a 21% vacancy rate and the highest number of new and replacement positions among the roles surveyed. Yet, of the 13 hospitals surveyed, only 4 said they actively utilize the mental health technician role. The forecasted new positions indicate a plan to expand staff as demand rises. The forecasted 100 replacement positions over the next two years reflect high burnout rates, more than retirements.

Organizations reported using the terms *Mental Health Technicians, Behavioral Health Technicians, and Psychiatric Technicians* interchangeably, each serving as direct support staff for crisis management and de-escalation. In some cases, Licensed Nursing Assistants (LNAs) are also used in this capacity. The difference in training skills allows LNAs to take vital signs and care for basic needs. Further, organizations say they would benefit from creating formal Mental Health Technician training and related career ladders for preceptors. By developing skill credentials, organizations could better support diverse hiring initiatives.

4. Use of Travelers

Vermont's healthcare system currently relies heavily on contracted traveling healthcare technicians to fill high-demand roles. Some HR professionals report that over 50% of their technicians are contracted short-term hires. This reliance on contracted technicians is costly and creates workforce instability, as full-time workers earn less than half the bill rate of a contracted worker. Due to persistent staffing needs, hospitals are hiring travelers for continuous rotations; in one instance, an organization reported contracting a technician role with the same traveler for five consecutive rotations.

Beyond the high bill rate cost, the use of travelers also complicates the training of new technicians due to a lack of tenured clinical staff. Without a stable full-time workforce, organizations cannot provide upskilling pathways for their employees, even when support and interest exist. Additionally, the lack of housing continues to be a major issue for both full-time and traveling staff. One rural hospital reported that a respiratory therapist position remained unfilled for over a year, and that several qualified candidates declined offers due to Vermont's housing shortage and high taxes. Even traveling staff who wish to transition to full-time positions face the challenge of securing stable housing in Vermont.

5. Future Forecasts

Job demand is becoming more acute in these high-demand, high growth positions. The current vacancy rate, coupled with projected growth and replacement needs, underscores the necessity for immediate action. The compound effect of these factors indicates that measures to address this staffing crisis are overdue. Many of the current healthcare workers are well-beyond retirement age.

To address these challenges, hospitals are finding success in supporting the advancement of existing staff members into high-demand technician level positions. This 'grow your own' strategy helps build a stable, well-trained workforce from within the region. Additionally, hospitals are expanding their search processes to include international candidates. Despite longer lead times, higher costs, and visa limitations, recruiting internationally offers one potential solution.

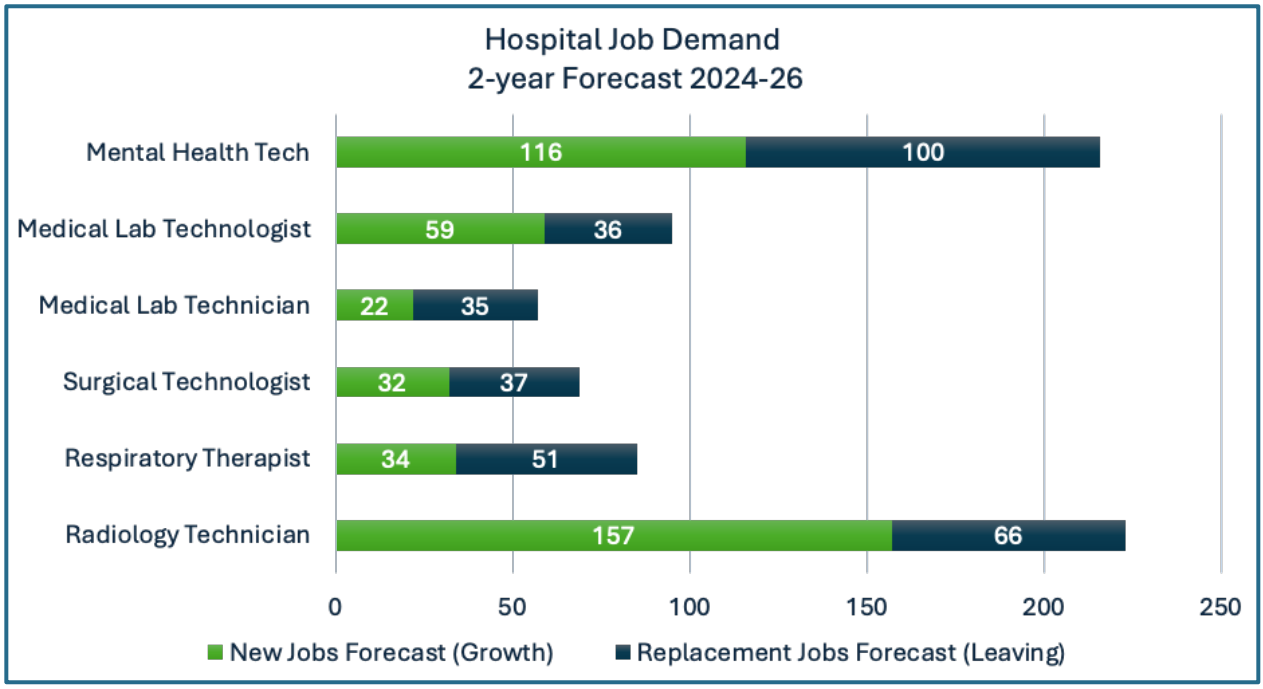

Figure 2: Figure 2: Hospitals forecast the number of new and replacement technician positions needed over the next two years (April 2024-2026). Graph created by VBR Foundation/Vermont Talent Pipeline.

Employers comment on the fact that there are too many travelers and not enough full-time staff. Travelers typically have the benefit of setting their own schedule, and benefit from earning higher rates of pay. If they find housing, they are better financially prepared for the high cost of living. Most of the in-house challenges continue to fall on the full-time staff who sometimes earn half as much. It is estimated that the bill rate for a traveler in Vermont is approximately 2.5 times the annual salary with benefits for the FTE employee.

The housing shortages in Vermont have significantly increased the cost of living, exacerbating recruitment and retention for healthcare technicians. Affordable housing is scarce, presenting a major obstacle in housing full-time employees at average wages. This scarcity perpetuates a cycle of reliance on higher paid contracted workers who may require living stipends. The challenge of attracting skilled workers is further compounded by Vermont's tax burden, which ranks third among all states.

6. Education Requirements

Looking ahead, Vermont's healthcare system must prioritize creating more sustainable and collaborative approaches to healthcare education and workforce development. A key component is the establishment of partnerships with education providers. These collaborations between hospitals and educational institutions help to distribute the resource burden of training by providing in-house clinical experiences. A commitment from partners will add and ensure training access for these high-demand skills.

A key workforce strategy will be the expansion of employer-sponsored apprenticeships. Apprenticeship pathways furnish hospitals with solutions to "grow their own" technicians by providing hands-on training and mentorship while participants earn education with wages and benefits. Apprenticeships not only help to address immediate workforce shortages, but also create long-term career pathways for critical jobs needed.

To address the ongoing challenges in education, flexible training options tailored to adult learners should be developed. Many adult learners need to balance education, work and other responsibilities. Providing training with support services will attract a broader pool of potential technicians who otherwise would be unable to pursue these careers.

A. Degree, Credential, or both

Each critical job typically requires training to ensure competency in the role. The following chart are the minimum education and credential requirements and preferences for hiring provided by Vermont hospitals.

Critical Job	Required Education	Required Credentials	Preferred Credentials	Willingness to provide clinical training?
Radiology Technician	Associate's degree in radiologic technology	ARRT certified	RRT, CT, Radiography or Sonography certified	YES 50%, NO 50%
Respiratory Therapist	Associate's degree in respiratory therapy	Vermont RCT Licensure, Basic Life Support, Advanced Cardiac Life Support, NBRC certified	Pulmonary Diagnostic certified	YES
Surgical Technologist	Surgical Technician Certificate program	none required	Certified Surgical Technologist	YES
Medical Lab Technician	Associate's degree in medical laboratory technology	Certified Medical Laboratory Technician	ASCP board certified	YES
Medical Lab Technologist	Bachelor's degree in medical laboratory science, chemistry or biology	American Med Tech Certified; ASCP Board Certified		YES
Mental Health Tech	High School diploma or GED, preferred	none required	Certified Mental Health Technician, Crisis Management Certified, Certified EHRS, Am Assoc of Psych Technician Certified	NO

Figure 3: Requirements for hiring indicate the education credentials needed for each role. Chart courtesy of VBR Foundation/Vermont Talent Pipeline.

B. Clinical Education Support

Many technician roles require precepting for clinical hires. Preceptors are experienced staff who mentor and train newcomers. However, because contracted workers often fill these positions, they can't effectively serve as preceptors, creating a bottleneck for clinical education. Hospitals that are eager to implement a "grow your own" strategy to upskill their own staff, hindered by the lack of available full-time staff for training and clinical education.

To overcome this challenge, one rural hospital has turned to a contracted preceptor, while another has hired a clinical education coordinator to ensure staff have

opportunities for upskilling. Employers expressed an idea that a clinical resource could be shared resource across hospitals for training purposes.

C. Healthcare Education Access and Affordability

A significant challenge contributing to the workforce shortage is the lack of regional healthcare education. Vermont currently hosts no Surgical Technology, nor Medical Lab Technician training. Vermont State University (VTSU) is the only option for Respiratory Therapy (located in Williston, with capacity for 20 students) and for Radiology Technician (located in Castleton, with capacity for 20 students). Each of these VTSU programs has an in-state cost of $26,688 for tuition and fees each year – for two years, plus some additional program-specific costs (Vermont State University) (MyFutureVT).

D. Out-of-State Education Cost Comparison:

A Vermont student would pay approximately $53,376 for tuition and fees to earn a 2-year associate's degree in respiratory therapy at Vermont State University. If they live outside of Vermont, like many of the workers in Vermont's border hospitals, the cost is nearly twice as much. However, at River Valley Community College in New Hampshire, a Vermont student could spend less than half, or $24,520 for the same degree, at an in-state rate through the good neighbor policy. The estimated annual cost for each year is estimated at $12,260, excluding additional program-specific fees (River Valley Community College Catalog) (RVCC Soar) (RVCC Soar).

This cost disparity makes neighboring states' community colleges much more competitive for Vermont students (or sponsoring employers) seeking an affordable pathway for respiratory therapy and other health-related degrees, particularly for those students living within a 50-mile radius of neighbor states' community colleges to qualify for in-state tuition rates.

7. Regional Educators with Pathway Programs

A. Surgical Technologist

- Dartmouth Health Medical Center, Certificate, NH
- UVM Professional and Continuing Education, Online Certificate

B. Radiology Technician

- River Valley Community College, Associate Degree, NH
- Vermont State University, Associate Degree, VT
- Greenfield Community College, Associate Degree, MA
- Hudson Valley Community College, Associate Degree, NY

C. Phlebotomy

- River Valley Community College, Certificate, NH

- UVM Professional and Continuing Education, Online Certificate

D. Medical Laboratory Technician

- River Valley Community College, Associate Degree, NH

E. Medical Laboratory Technologist

- University of Vermont, Bachelor of Science, VT

F. Respiratory Therapist

- River Valley Community College, Associate Degree, NH
- Vermont State University, Associate Degree, VT
- Greenfield Community College, Associate Degree, MA
- Hudson Valley Community College, Associate Degree, NY

8. Vermont Average Pay Rates

Critical Job	Vermont Avg Hourly Rate (May 2023) *
Respiratory Therapist	$ 38.62
Radiology Technician	$ 36.18
Mental Health Technician	$ 20.99
Surgical Technician	$ 29.93
Med Lab Technician	$ 30.22
Med Lab Technologist	$ 32.06
Phlebotomist	$ 20.74

Table 1: Vermont Rates of Pay per hour determined May 2023 by the US Bureau of Labor Standards

9. Employers Participating in the Needs Assessment

- Brattleboro Memorial Hospital
- Brattleboro Retreat
- Central Vermont Medical Center; UVMHN
- Copley Hospital
- Gifford Health Care
- Grace Cottage Hospital
- Mt. Ascutney Hospital and Health Center; Dartmouth-Hitchcock
- Northeastern Vermont Regional Hospital
- Northwestern Medical Center
- Porter Medical Center; UVMHN
- Rutland Regional Medical Center
- Southwestern Vermont Healthcare
- UVM Medical Center; UVMHN

10. Appendix: Healthcare Technician Needs Assessment Data Summary

Technician Role	Number of Respondents	Filled Positions	Vacant Positions	Total Positions	Vacancy Rate	New Jobs Forecast	Replacement Jobs Forecast	* Total Forecast 2024-26
Radiology Technician	13	420	86	506	17%	157	66	223
Respiratory Technician	11	139	57	196	29%	34	51	85
Surgical Technologist	10	67	44	111	40%	32	37	69
Medical Lab Technician	13	86	30	116	26%	22	35	57
Medical Lab Technologist	12	182	29	211	14%	59	36	95
Mental Health Tech	4	200	54	254	21%	116	100	216
Total:		**1094**	**300**	**1394**	**22%**	**420**	**325**	**745**

Figure 4: VBR Foundation Needs Assessment data collected for hiring for the period April 2024-April 2026 with 13 Vermont Hospitals.