



Nursing Simulator Report

January 13, 2023

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BACKGROUND

The Vermont State Colleges System (VSCS) is comprised of Castleton University, Northern Vermont University, Vermont Technical College, and Community College of Vermont. On July 1, 2023, the three residential colleges (Castleton University, Northern Vermont University, and Vermont Technical College) will unify to a single university, Vermont State University, with locations throughout the state. After July 1, the Vermont State Colleges System will be comprised of Community College of Vermont and Vermont State University.

The VSCS institutions graduate over 375 nurses at all practice levels each year and 83% of our graduates obtain a license to practice in Vermont after graduation. We offer both a traditional 4-year Bachelor of Science in Nursing program (BSN) at Castleton University and a 4-year ladder credential program at Vermont Technical College. The Vermont Tech program is designed for students to achieve a Practical Nursing Certificate, leading to Licensed Practical Nursing licensure (LPN) after the first year. The second year, students achieve their Associate of Science in Nursing degree (ADN) and may sit for their Registered Nurse (RN) licensure exam. The third and fourth year consist of a RN to BSN bridge program, after completion of which, students graduate with their BSN. As students achieve each credential, they may enter the workforce or choose to continue their education.

Castleton University also offers a Master of Science in Nursing program, and Community College of Vermont offers an Allied Health Preparation Certificate, which feeds directly into Vermont Tech's nursing program. All these offerings and pathways will continue when Castleton, NVU, and Vermont Tech unify this summer.

The nursing program hosted by Vermont Tech is unique in that it is offered at 15 separate educational sites around Vermont and 3 in New Hampshire. The 4-year BSN program is offered in-person at Castleton and Bennington, and the RN to BSN bridge program is offered online. The PN and ADN program is offered in communities throughout Vermont, including Newport, Lyndon, Morrisville, St. Albans, Bennington and Brattleboro, among others. Many of these sites are co-located at Career and Technical Education Centers, CCV educational sites, or on our residential campuses, while others are based in area hospitals.

The average student age in VSCS nursing programs is 29-30 years old, although we do serve many traditional 18-to-24-year-old students as well. Most of our non-traditional students are embedded in their communities and access the VSCS' nursing program because it is locally available, affordable, and offers a strong return on investment. The challenge of our model is the expense of delivery. Maintaining our many locations throughout the state, the needed masters and higher educated faculty, and the clinical partnerships require significant investment.

Nursing program curriculum requires that students have access to regular classroom space, skill laboratory space, and clinical placements for practical experience. Simulation laboratories, also known as Sim labs, offer an alternative to some clinical placements as they provide simulated patient care experiences to students. These laboratories are extremely expensive to build and maintain, as they require complex robotic equipment, including medium and high-fidelity simulators, that are used to create real-world patient scenarios. Capable of mimicking human physiologic functions, from breath sounds to changes in vital signs, simulators enable our students to engage in patient care scenarios and advance their skills.

USE OF FUNDS

In [Act 180 of 2022](#), the legislature appropriated \$800,000 of capital funds to the Vermont State Colleges for renovation and upgrades to simulation laboratories as part of a multi-faceted effort to assist the state colleges with expanding capacity in the nursing programs. This investment is significant, allowing the VSCS to purchase an estimated 12 simulators and 18 patient beds, replacing malfunctioning and broken equipment that limits program participation and hinders the nursing students' experiences.

SIMULATORS

Numerous VSCS nursing sites have simulators that were purchased in 2010 and have long outlived their life cycle. The vendors of these simulators no longer offer replacement parts or maintenance, and some have connection issues, causing them to stop working while being used. Other have outdated technology or design limitations, which restricts their usefulness and the locations they can be used at. While our birth simulator is newer (purchased in 2018), it was returned to the manufacturer for maintenance three times in the last year, disrupting student learning opportunities.

The VSCS is in the process of purchasing 12 replacement simulators, using state capital funding. These simulators will range in price from \$25,000 for smaller pediatric simulators to \$70,000 for the larger and more technical simulators, such as the birthing simulators. On January 13, 2023, the preferred simulator vendor is providing an onsite demonstration of the simulators to our nursing faculty and program leads. If the program leads are satisfied with their review of the equipment, we anticipate placing an order within the next few weeks. Final pricing of each simulator and quantity of each type will be determined after the equipment review. We anticipate that once an order is placed, the simulators will be delivered to the VSCS within 10 weeks.

BEDS

In addition to the purchase of replacement simulators, the VSCS will be purchasing an estimated 18 replacement beds for the simulation laboratories. The current beds no longer reflect the current hospital environment and replacement parts are no longer manufactured. Additionally, many of the current simulation laboratory beds have broken or outdated parts, including brakes, safety rails, side rails, and panel controls. These limitations pose safety and equipment breakage risks in the laboratories and limit students' ability to receive the high-quality simulation experience they need.

This month, the VSCS completed a needs assessment of simulation beds in sites across the state and anticipates purchasing 18 replacement beds. To ensure the best use of the investment for the VSCS nursing program and the state, we plan to purchase refurbished hospital beds, ranging in price from \$2,500 to \$5,000 each. Once ordered, we anticipate the beds will arrive within 6 weeks.

CAPITAL FUNDS

Expended: \$0

Encumbered: \$0

Unexpended: \$800,000

Since Act 180 of 2022 was signed, the VSCS has been engaged in a needs assessment of simulation laboratory equipment, Request for Proposal process for new equipment, and is now testing equipment for potential purchase. We anticipate a final decision will be made by the end of January, funds will be fully encumbered by mid-February 2023, and all equipment will be delivered by late April 2023.

CONCLUSION

The Vermont State Colleges System is incredibly grateful for the support received from the state for our nursing program. This simulation laboratory investment will increase the quality of education and simulation experience our students will receive, will help ensure our booked laboratory experiences remain on-schedule, and will enable us to offer a more effective and realistic simulated clinical experience for our students. We are excited by the opportunity to invest in our simulation spaces and look forward to providing the legislature additional updates as the purchasing process continues.