SimLEARN

2021 ANNUAL REPORT

VA | U.S. Department of Veterans Affairs

Welcome to
SimLEARN

While SimLEARN has existed since 2009 and has been at the National Simulation Center (NSC) on the Lake Nona medical campus in Orlando, Florida since 2016, it's time to reintroduce ourselves.

SimLEARN is now the Simulation Learning, Evaluation, Assessment, and Research Network. We continue to set the standard for innovative healthcare solutions with simulation-based clinical capabilities for enterprise-wide impact and value. We aim to be the national simulation leader across the Department of Veterans Affairs (VA).

The change to our acronym from "Learning, Education and Research Network" to "Learning, Evaluation, Assessment, and Research Network" represents how our priorities have expanded under the Office of Discovery, Education and Affiliate Networks (DEAN) and Office of Healthcare Innovation and Learning (OHIL) umbrella.

The COVID-19 pandemic has required SimLEARN to reimagine learning as we shifted our training paradigm from bringing clinicians to the NSC for face-to-face training to creating a library of virtual training on our own platform, the SimLEARN Virtual Academy, and training trainers across the country at our new SimLEARN Innovation Centers for Education, or "SLICE" cells.

We are also strengthening our consultative capabilities by transforming and expanding upon pre-conceived ideas of what simulation is.

Simulation is more than training clinicians using manikins to learn medical procedures—although we do that well and manage the training of more than half a million Veterans Health Administration (VHA) professionals on the American Heart Association basic and advanced lifesaving courses.

It is partnering with VA's Office of Construction and Facilities Management to build models of primary care and emergency rooms to test workflows and identify potential safety hazards in the design before anything is built or remodeled.

It is creating a simulation of the Cerner Millennium Electronic Health Records (EHR) server to test workflows of how the new EHR system will be used in clinical settings.

It is incorporating gaming into education by creating an "Escape Room" experience to teach clinicians how to respond during cardiac arrest.

And it is partnering with the VA Innovation Unit, VHA's Innovation Ecosystem, VA Office of Information and Technology, and Verizon to bring 5G high-band behind the VA firewall to allow medical providers at other VA sites to share large files of Veteran medical information, such as x-rays and scans, more quickly.

With SimLEARN's first annual report, we aim to amplify the successes we've had this past year across our portfolios and share where we are heading in the year ahead.

Eric Bruns, MBA
Executive Director
SimLEARN

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INTRODUCTION

In 2009, the Acting Under Secretary for Health authorized the establishment of a national simulation training and education program for Veterans Health Administration (VHA).

This simulation-based program, SimLEARN, was part of the Employee Education System (EES) and provided education tools, curricula, and best practices nationwide for use in a clinical setting to teach clinicians with the goal of enhancing the clinical care of Veterans.

Historically, SimLEARN stood for Simulation Learning, Education and Research Network.

In October 2020, SimLEARN moved from EES to the Office of Discovery, Education and Affiliate Networks (DEAN), and the Office of Healthcare Innovation and Learning (OHIL). DEAN ensures that Veterans have access to the most innovative healthcare solutions by promoting medical research initiatives, training healthcare professionals, and developing community partnerships.

As part of the realignment, SimLEARN refocused its mission and vision and changed the definition of its name: SimLEARN now stands for the Simulation Learning, Evaluation, Assessment, and Research Network. The addition of Evaluation and Assessment to the name highlights SimLEARN's new, broader, more consultative approach.

SimLEARN's portfolios also changed to reflect this new broader focus. Training Operations split into two groups, Learning Management (LM) and Clinical Training and Engagement (CTE). The Simulation Outreach Network (SON) was renamed the Assessment, Collaboration and Outreach (ACO) portfolio, and in 2021 we added a portfolio, Emerging Healthcare Technology Integration (EHTI).

The Resuscitation Education Initiative portfolio was also renamed the Resuscitation Education and Innovation (REdI) portfolio, while the Support Services portfolio remained the same.

MISSION

Set the standard for innovative healthcare education solutions through simulation-based clinical capabilities that impact enterprise-wide outcomes.

VISION

Be the indispensable asset to the enterprise and its partners that provides world-class services to all Veterans through innovation and simulation education.

PURPOSE

Provide an ever-growing body of curricula and tools that improve Veteran well-being through simulation-based innovation and technologies delivered in a safe learning environment.

WE ARE...

- Amplifying Outcomes
- Reimagining Learning
- Transforming Simulation
- Enhancing Veteran Health

SIMULATION

LEARNING
Develop simulation-based curricula and tools that support learner-centered and problem-based learning environments.

EVALUATION
Create processes and tools to evaluate simulation experiences, learner behaviors, and outcomes.

ASSESSMENT
Use simulation as a proactive approach to assess the effectiveness of clinical spaces, personnel, and systems that impact the quality of care provided to Veterans.

RESEARCH
Assemble a body of knowledge in simulation-based education, translate technology and innovation into evidence-based best practice and standards, and collaborate with partners to maximize impact and global reach of simulation and innovation research.

NETWORK
Build strong collaborations with internal and external partners to leverage best practices and innovation aimed at continuous improvement throughout the enterprise.

2021 HIGHLIGHTS

In response to COVID-19, SimLEARN reinvented the way it develops, implements, and delivers its simulation training, moving away from in-person courses toward virtual modalities. It transformed the meaning of simulation to include simulating new or remodeled clinical spaces, as well as simulating workflows to determine how technology impacts delivery of Veteran care.

Scott Wiltz, MD
MEDICAL DIRECTOR
SimLEARN

As SimLEARN's Medical Director, Dr. Scott Wiltz serves as the lead clinical advisor and oversees the clinical aspects of SimLEARN's education and innovation.

- SimLEARN created the SimLEARN Virtual Academy (SVA), located on the VA intranet. More than 700 people signed up for courses through the SVA in 2021.

- At the close of 2021, there were 23 new SimLEARN Innovation Centers for Education (SLICE) cells.

- 41 VA facilities currently have basic, intermediate, or advanced simulation program certifications, which is a SimLEARN tool to establish and standardize structured programs that support local delivery of simulation-based training. Certified facilities actively confirm their commitment to quality improvement, patient safety, and accountability, improving Veteran patient outcomes. Various criteria must be met for certification, including funding, space, equipment, number of simulation personnel, simulation curriculum offered, resuscitation education accreditation, and more.

- VA Secretary Denis R. McDonough toured the National Simulation Center (NSC) in June 2021.

- More than half a million employees completed American Heart Association courses on advanced, basic, or pediatric life support, including refresher Resuscitation Quality Improvement (RQI) training to maintain life support skills.

- In partnership with the Office of Electronic Health Record Modernization (OEHRM) and Office of Information & Technology (OI&T), the Emerging Healthcare Technology Integration (EHTI) portfolio is implementing a sandbox instance of the Cerner EHR at SimLEARN to aid in EHR optimization.

- We established 5G High-Band Millimeter Wave service at the NSC.

Dr. Wiltz also develops and manages conversations and relationships between SimLEARN and VA national leaders, as well as with academia and the private sector. Once Dr. Wiltz establishes these relationships, he hands them off to the individual SimLEARN portfolios to implement and expand on them to further the goals of SimLEARN to be VA's national leader in simulation.

Beginning in 2017, Dr. Wiltz was the Clinical Associate Director of Training, coordinating the role of clinical faculty to support SimLEARN's training courses. In 2018, Dr. Wiltz took on the role of Associate Medical Director, and in February 2021, he became the Medical Director.

The main role of the Medical Director is to serve as the clinical lead for SimLEARN; the position is equivalent to a Chief of Staff in a hospital. At its core, SimLEARN aims to make things better for Veterans and the staff who care for them, minimizing patient safety risk from ever reaching Veterans.

Dr. Wiltz tries to connect with organizations inside and outside of VA to make them aware of SimLEARN and its mission. He aims to remove barriers between organizations and is also the advisor on clinical programs, especially when SimLEARN hosts outside medical groups, such as those representing Poland or Kuwait.

During 2021, one of Dr. Wiltz's main projects has been the Cerner Millennium Project to implement the EHR platform throughout VA. This major modernization project will impact all 152 VA facilities.

Dr. Wiltz works to ensure that Cerner can fit within the workflows of everyone who will use it. When the EHR platform was implemented in Spokane, Washington, there was no user testing. SimLEARN has developed a "sandbox" server to aid in EHR optimization and user proficiency.

For the next implementation, in Columbus, Ohio, the project will use simulated patients to work through the process to find any gaps.

Dr. Wiltz also champions "SimVET," or Simulation Validation, Evaluation, and Testing. This new model sets up SimLEARN as a testbed for pre-procurement decision-making to include technology, facilities, and other factors.

For example, EHTI tests technology, such as the Medivis Surgical Augmented Reality (AR) suite, used for pre-surgical planning, pre-procedural planning, interventional radiology, and to look at a patient's anatomy and navigate images, with the goal of integrating it into patients' medical care.

Through these efforts and others, SimLEARN is reshaping and making real the future of Veteran healthcare.

Lisa Baker, MEd, BSN

DIRECTOR
Clinical Learning and Innovation

NATIONAL PROGRAM DIRECTOR
Resuscitation Education and Innovation

Lygia Arcaro, PhD, RN

NATIONAL DIRECTOR OF NURSING PROGRAMS
SimLEARN

Dr. Lygia Arcaro serves as the National Director of Nursing Programs for SimLEARN.

Lisa Baker, a 21-year Naval Veteran, joined SimLEARN in 2019 and now serves as the National Program Director for Resuscitation Education and Innovation. In 2021, as SimLEARN has reorganized, she was also appointed as the Director of Clinical Learning and Innovation.

In these roles, Ms. Baker is responsible for enterprise-wide oversight and support of a robust resuscitation portfolio, the design and distribution of standardized simulation-based training through innovative learning platforms, and leveraging interprofessional simulation education and expertise through collaborative engagement with VA medical centers.

Over the past year, in support of VA's Fourth Mission, she was selected to the national workgroup tasked with identifying solutions and capabilities for the pediatric COVID-19 vaccination expansion.

She also led the effort that successfully migrated VHA, the largest healthcare system in the nation, to the updated 2020 international guidelines in resuscitation education.

Through this work, over 2,500 VA resuscitation instructors received training updates by the required deadline to avoid end user gaps in access to critical lifesaving training.

Ms. Baker possesses experience in executive medicine, quality management, patient safety, risk management, and critical care and education.

Prior to this position, Ms. Baker served as the Associate Director for Training, responsible for the oversight of all SimLEARN operations related to the development, delivery, evaluation, and sustainment of simulation-based training projects and national curriculum.

Ms. Baker has worked in several executive details throughout her VA career, to include Chief, Organizational Performance Improvement; Assistant Director, Facility Support; and Assistant Director, Geriatrics and Mental Health.

In this role, Dr. Arcaro collaborates with leadership from national program offices and field facilities throughout VHA, which include interprofessional teams for clinical and administrative personnel using simulation-based education and training.

She has moderated the monthly Simulation Community of Practice Calls since fiscal year (FY) 2012 and collaborated to have current simulation activities featured in the Simulation Exchange Newsletter since FY 2011. The newsletter provides information to staff at VA medical centers to assist with moving simulation forward in VHA.

Dr. Arcaro has been an invited speaker from various offices in the VHA and has presented in a variety of simulation conferences.

She is a graduate of Leadership VA, the VHA Health Care Leadership Institute, and the VHA Executive Career Field Program; and holds a certificate in Modeling and Simulation from the Naval Post Graduate School.

Dr. Arcaro has been recognized by EES for her professional contributions as technical advisor for the award-winning SimLEARN newsletter in 2016 and 2017 and was a member of the Amber Blaze Team Award for Customer Service in 2019.

Earlier in her career, she was the only VHA employee to serve for eight years on the American Nurses Association (ANA) Standards and Guidelines Committee.

Dr. Arcaro is currently a co-author in progress on a chapter of a nursing simulation textbook.

Some of Dr. Arcaro's 2021 career highlights at SimLEARN include supporting the COVID-19 Vaccine Implementation Team for VHA by developing education and training materials, serving as the technical advisory group chair for the FY 2021 VHA Field Simulation Capability Study, and mentoring new nurses and other staff members at the VHA.

ASSESSMENT, COLLABORATION AND OUTREACH

The Assessment, Collaboration and Outreach (ACO) portfolio reimagined learning in 2021 through growing opportunities for field-based simulation education in VHA.

ACO, previously known as the Simulation Outreach Network (SON), is a one-stop shop simulation experience for medical providers seeking guidance to and for clinical simulation practice activities, assessment and evaluation for medical system and hospital activations, and simulation training programs at local VA medical facilities supporting Veterans who live in rural areas.

The ACO portfolio disseminates best practices from NSC and collaborating partners, offers quality assurance of SimLEARN programs in the field, conducts systems testing, and identifies hidden or potential hazards to amplify best practice outcomes and minimize risks to Veterans.

ACO is led by LeAnn Schlamb, Associate Director of Assessment, Collaboration and Outreach.

ACO saw success in 2021 through a new partnership with the Office of Construction and Facilities Management (CFM) to use simulation during the design phase of new construction and renovations to begin developing new design standards.

In addition, ACO innovated with its Mobile Sims Cart to conduct virtual activations during the COVID-19 pandemic and planned and piloted a "COVID-19 Escape Room" to prepare new employees with coronavirus policies.

As ACO continues to reimagine learning for VHA sites and providers, it is working toward expanding its capabilities to enhance Veteran health and wellness through simulation training.

COVID-19 ESCAPE ROOM

ACO reimagined learning by coordinating a COVID-19 Escape Room at the Tampa VA Hospital in partnership with the Tampa Advanced Simulation Center to enforce COVID-19 policies and prepare new employees.

An escape room is best known as a game in which players solve puzzles, uncover clues, and complete tasks in one or more rooms to accomplish a goal in a set amount of time.

The COVID-19 Escape Room training adaptation provided participants a space to practice communication, clinical skills, leadership, team building, and problem solving in a dynamic and innovative way.

One of the major training highlights was the introduction of new respiratory equipment the Tampa VA acquired. COVID-19 units at the Tampa VA were having issues with their Powered Air

Purifying Respirators (PAPRs) breaking down, so the hospital introduced a new kind of PAPR, which had different steps to follow for use. The new PAPR training was introduced to escape room participants during the game as they learned more about COVID-19 policies and procedures.

The COVID-19 Escape Room proved to be an effective way to engage learners in an immersive environment. The training serves as an example of the targeted, transformational work ACO can bring into VHA facilities across the enterprise to reimagine how healthcare providers are learning to enhance Veteran health and wellness.

ACO's mission to grow and support simulation education opportunities in the VA enterprise happens through:

- Standardization of best practices for improved quality and sustainment.

- Opportunities for innovation.

- A network of resources, partnerships, and collaboration.

"
Escape room training has motivated, changed attitudes, and has created an enthusiasm for training. No boring moment with great impact!

Thomas Miller
TAMPA VA EMS TRAINER

SYSTEMS HOSPITAL ACTIVATION (S/HA)

S/HA is one of the new simulation services ACO offers to improve VA medical facility design and function across the country.

ACO uses process-oriented simulation as a tool to proactively identify gaps or weaknesses for new clinical facilities, spaces undergoing renovation, or sites offering new services.

S/HA is designed to detect and find solutions for potential hazards linked to new processes, equipment, and staff new to VA. In 2021, ACO completed activations at four virtual locations with a total of 97 participants and three in-person activations with a total of 173 participants. ACO identifies and mitigates hazards by using process-oriented simulation scenarios to observe staff responses to patient flow, workflow, equipment, and emergency procedures.

The assessment uses manikin-based simulation, standardized patients, or tabletop exercises to identify gaps, challenges, and latent hazards, which could potentially put Veterans and others at risk. Once hidden or potential hazards are prioritized, strategies are developed in collaboration with facility staff to fix them prior to activation of new or renovated patient care areas or the implementation of new patient care services.

VA facilities across the country are encouraged to request S/HA services, which include strategic collaboration with facility management to identify potential safety hazards and ideas for process-oriented simulation scenarios.

ACO develops unique scenarios to test concerns and runs the simulations with site staff. Finally, the ACO team provides a written report to facility and service leadership listing each finding, the potential risk, and mitigation recommendations.

4 VIRTUAL LOCATIONS

3 FACE-TO-FACE LOCATIONS

97 VIRTUAL PARTICIPANTS

173 FACE-TO-FACE PARTICIPANTS

2021 S/HAs

Increased complexity to ED with two simulations:

Fayetteville, NC Urgent Care Center

57 PARTICIPANTS
12 SCENARIOS

Simulated three new spaces:

Kansas City, MO KCVAMC

Virtual CT (Virtual)
26 PARTICIPANTS
02 SCENARIOS
10 PCI/LST IDENTIFIED

Liberty Clinic (Virtual)
14 PARTICIPANTS
02 SCENARIOS
15 PCI/LST IDENTIFIED

Lenexa CBOC
20 PARTICIPANTS
13 SCENARIOS
63 PCI/LST IDENTIFIED

Simulated two spaces:

Indianapolis, IN VAMC

Lafayette CBOC
53 PARTICIPANTS
12 SCENARIOS
20 PCI/LST

Brownsburg CBOC
60 PARTICIPANTS
SCHEDULED
18 SCENARIOS

SIMULATION-BASED HEALTHCARE DESIGN TRAINING (SbHDT)

SbHDT was ACO's greatest accomplishment in 2021.

ACO's S/HA team partnered with the Office of Facilities Standards Service (FSS) and CFM to use SbHDT to test designs prior to the start of design and construction.

SbHDT assists VA facilities in preventing significant cost impacts or service delays through simulation at the design and construction phase.

ACO conducted a simulation-based testing workshop on design standards at SimLEARN's NSC. The goal was to test the safety and functionality of the designs prior to the publication of the VA Design Standards for Space Criteria and Design Guidance. Identifying these issues before construction begins results in significantly lower design change costs and avoidance of construction related delays.

A team of VA emergency department (ED) providers, healthcare architects, and simulation experts created a full-scale mock-up of multiple individual treatment areas under development where they evaluated the safety and functionality of the spaces.

The team was able to identify positive attributes of the designs to maintain and uncovered potentially negative design elements that could result in impacts to workflow, patient flow, and safety hazards.

The use of SbHDT will improve the quality and accuracy of the VA Design Standards. This innovative project is an example of how simulation can transform VHA's delivery of services for VA staff and facilities and enhance Veteran health and wellness for years to come.

2 PARTICIPATING ED ROOMS

22 INTERPROFESSIONAL WORKSHOP PARTICIPANTS

MOBILE SIMS CART

The Mobile Sims Cart sits at the intersection of innovation and adaptation.

ACO's S/HA team facilitated the creation and implementation of the Mobile Sims Cart, a virtual simulation system that supports VA facilities with training activations.

Prior to the COVID-19 pandemic, the S/HA team would travel to VA facilities that needed assistance with systems-focused simulation to evaluate new or renovated patient care areas for hidden safety threats prior to opening.

ACO coordinated with Fayetteville, North Carolina Veterans Affairs Medical Center (FNCVAMC) to develop the Mobile Sims Cart to virtually support an activation at its facility.

The team selected VA standard computer systems, equipment, and programs, which allow the Mobile Sim Cart to be utilized by organizations across VA.

The transition to a virtual platform has presented several advantages for ACO's S/HA program. The team can now support activations at more sites, offer simulations across multiple days and shifts, and incorporate subject matter experts who may not have been able to participate otherwise.

ACO has transformed simulation and reimagined learning using the Mobile Sims Cart in 2021 and looks to adapt the innovation for activations at VA facilities across the country.

FAYETTEVILLE, NORTH CAROLINA
Veterans Affairs Medical Center

CLINICAL TRAINING AND ENGAGEMENT

The goal of SimLEARN's Clinical Training and Engagement (CTE) portfolio is to deliver high-quality simulation training and engagement throughout VHA. Led by Associate Director Dr. Bonnie Haupt, CTE leverages its clinical simulation expertise to educate and collaborate with VA medical centers to deliver critical skills to staff and ultimately enhance Veteran outcomes.

CTE accomplishes this by:

- Acting as liaisons, consultants, and subject matter experts leveraging interprofessional expertise, enabling stakeholders to build and sustain innovative simulation-based trainings.
- Leading enterprise simulation collaboratives to evaluate educational effectiveness of simulation-based training programs.
- Advancing healthcare in VHA and the nation by promoting and supporting simulation-based education to enhance clinical performance and safety.

- Reimagining learning during COVID-19 by redefining the delivery of simulation-based training through innovative, virtual modalities.
- Partnering with Learning Management (LM) to transform existing face-to-face simulation-based training to be delivered in a just-in-time, asynchronous environment using national and field-based subject matter experts.

MILESTONES
In 2021, the CTE team:

Developed and implemented the virtual Introduction to Clinical Simulation (ICS) course, established this year for the first time to meet the challenges posed by COVID-19.

Added a virtual Musculoskeletal (MSK) Telehealth Training to the MSK Suite.

Wrote and recorded more than 20 "how-to" and "quick tip" educational videos, which are available via SimTube, an intranet-based video platform that offers just-in-time video refreshers that have been created by our simulation experts.

CTE TRAINING COURSES

Out of Operating Room Airway Management (OOORAM) & Out of Operating Room Airway Management - Instructor (OOORAM-I)
OOORAM and OOORAM-I, offered through the SLICE Program, targets learners who have a substantial role in performing airway management training and are trained to oversee a facility's OOORAM program. Learners who complete the course can instruct an OOORAM course to train local healthcare providers.

Introduction to Clinical Simulation (ICS)
ICS training provides qualified physicians, dentists, and nurses a theoretical foundation for simulation-based training by combining didactic, small group, and virtual simulation activities. Upon completion of the course, graduates participate in monthly SimLEARN Community of Practice conference calls that guide the implementation of simulation into the healthcare training programs at their facilities.

SimLEARN Faculty Instructor Course (SFIC)
SFIC trains seasoned clinical faculty educators. Participants develop enhanced skills required to provide traditional instruction geared toward adult learners, conduct simulation-based healthcare training scenarios, and build their capacity for a thorough debrief of such events during SimLEARN training programs in their work centers.

Musculoskeletal (MSK) Suite
The MSK Suite offers various levels of training focused on providing a framework necessary to perform musculoskeletal examinations. Learners review common musculoskeletal complaints during patient care, practice using the verbal instructions delivered to Veterans before and during the musculoskeletal physical examination, and provide a diagnosis based upon observations.

EMERGING HEALTHCARE TECHNOLOGY INTEGRATION

The Emerging Healthcare Technology Integration (EHTI) portfolio, led by Associate Director Brian Stevenson, creates unique opportunities to transform Veteran healthcare by fusing emerging health technology with simulation and learning.

The portfolio helps operationalize and amplify outcomes of new technologies that ultimately enhance Veterans' health and wellness.

EHTI was established in 2020 with the goal of understanding how emerging technologies, such as 3D imaging and augmented reality, can be used to accomplish learning objectives and improve health outcomes for Veterans.

Furthermore, EHTI continues to assess the safety, usability, and clinical workflow integration of emerging technologies before they are operationalized and dispersed throughout VHA.

5G HIGH-BAND MILLIMETER WAVE

SimLEARN's National Simulation Center (NSC) is one of the first facilities in the VHA to operationalize 5G high-band.

SimLEARN's operation of 5G high-band was controlled in a low-risk simulation environment before it is dispersed to help Veterans throughout the VHA system.

The integration effort was led and completed by SimLEARN's Chief Technology Officer Jeffrey Saura, who worked with Verizon's network engineers to expedite installation at the NSC.

EHTI's work with 5G high-band will allow medical providers at other existing VA sites to share large files of Veterans' medical information, such as x-rays and computed tomography (CT) scans, more quickly through augmented or virtual channels.

SimLEARN is helping to expand 5G varieties to other VA facilities through the VA Innovation Unit (VAIU). VAIU is leading the planning, installation, and integration of 5G throughout the VA system.

Collaboration on 5G integration through SimLEARN and the VAIU is expected to improve access and quality of care for Veterans across the country.

5G allows for faster speeds, more network capacity, decreased lag time, and the possibility of more hyper-interconnected environments.

The EHTI portfolio focuses on the integration of emerging health technology into clinical care through:

- Identifying solutions that advance the standard of clinical learning and simulation.

- Informing SimLEARN's curriculum development, focusing on emerging health technologies to improve care delivery.

- Optimizing workflows of emerging health technologies in a simulated, risk-free environment.

CERNER MILLENIUM EHR INTEGRATION AT SimLEARN

EHTI developed a sandbox—or practice version—of the Cerner EHR platform at SimLEARN to help test the platform's optimization and proficiency in a controlled, low-risk environment.

Cerner Millennium is an EHR platform that helps medical providers document and access critical patient data, streamline workflows, improve safety, and enhance the overall Veteran experience.

EHTI is collaborating with the OEHRM and OI&T to implement Cerner Millennium across the VHA.

EHTI's focus on Cerner Millennium site readiness and assessment/evaluation will continue into FY 2022. The portfolio assists with simulation scenarios for sites to walk through their current workflows and compare them to the standardized post-Cerner workflows.

EHTI also organizes workflow optimization events, oversees development and distribution of clinical simulation scenarios, and makes vulnerability assessments.

EHTI is actively assessing the need for short- and long-term innovations that may be needed in the future.

The scope of the work ranges from integrating existing or new devices and systems into Cerner with the same testing completed in the NSC's simulated hospital to evaluating/assessing emerging devices and technology for integration to enhance performance at the sites.

> " **By allowing VHA staff the opportunity to 'practice like they play,' SimLEARN seeks to provide a safe, realistic simulated environment to ensure that before care is delivered to a Veteran using this new system, that we as an organization have prepared not just until we get it right, but until we cannot get it wrong.**
>
> **Eric Bruns**
> SimLEARN EXECUTIVE DIRECTOR

MEDIVIS: DAY IN THE LIFE – WOMEN'S HEALTH

EHTI achieved an approved Enterprise Risk Assessment, which enables all VHA sites that have the Medivis system to use it behind the VA firewall.

This accomplishment allows VA medical providers to pull Veteran's 3D images for interventional radiology and pre-surgical and pre-procedural planning.

Medivis uses augmented reality (AR) and artificial intelligence to advance surgical visualization, and SimLEARN used the system to create its first simulation that features surgical augmented reality.

The simulation explores a day in the life of a female Veteran to highlight the importance of women's health. The simulation shows the Veteran and her medical provider meeting with the Veteran's family through a shared AR experience.

The technology allows the Veteran's family to look inside their loved one's body with the medical team to see what is wrong, what is going to be repaired, and what types of surgery would be most effective.

The simulation then features how a Veteran could have surgery performed using holographic registration through surgical AR.

EHTI relied on the hyperconnectivity of 5G high-band as a first step toward integration and operationalization of the technology.

The next step for dispersing the tools represented in the simulation is getting the 5G high-band technology needed into physical medical spaces where lags in latency cannot be afforded.
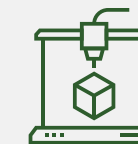
3D PRINTING

EHTI reimagined learning with 3D printing in 2021.

The portfolio welcomed a new 3D Printing Lab at the NSC that now serves as an ad hoc internal service offering to SimLEARN's operational programs. In recent years, 3D printing shifted from a niche technology to a game-changing innovation, which SimLEARN is using to support a myriad of programs.

EHTI is using its small fleet of 3D printers to aid programs with 3D printed feature sets not currently available within its procured simulation products. EHTI prints bioidentical parts for manikins and small structural components for site activations.

The anatomical parts or structural components EHTI prints are expensive to purchase or may be unavailable for the tools SimLEARN uses during simulation. Examples of some of the products EHTI prints include thyroids or phased infection of the thyroid, and small items in simulated rooms, such as sink parts, soap dispensers, and paper towel dispensers.

LEARNING MANAGEMENT

SimLEARN's Learning Management (LM) portfolio, led by Associate Director Dr. Jonathan Borgwing, provides management, leadership, and educational expertise related to short- and long-range simulation-based training solutions for VA healthcare facilities, field consultation, and field-based intake.

The portfolio's mission is to facilitate simulation-based development, curricula, distribution, and tools that supports innovative, enterprise-level healthcare solutions.

LM reimagined learning in 2021 by leveraging virtual platforms to distribute just-in-time clinical-based simulation training both synchronously and asynchronously.

The ability to scale access to these course offerings became a force multiplier in reaching direct care staff throughout the COVID-19 pandemic.

DISTANCE LEARNING MEETS SIMULATION: SimLEARN VIRTUAL ACADEMY

The SimLEARN Virtual Academy (SVA) is SimLEARN's unique simulation training platform, allowing clinical training anytime, anywhere. In 2021, over 700 students enrolled for courses in the SVA.

In March of 2020, impact of a pandemic was spreading. At the time, in-person training operations were still taking place at SimLEARN, but discussions began about how to continue simulation training in a world where that wasn't possible in the same physical space.

SimLEARN quickly strategized to deliver COVID-19 related courses, and in 2021 was able to continue simulation training through the expanded SVA.

Throughout 2021, SVA provided a comprehensive and accessible pathway for students to see progress despite an inability to be in the SimLEARN center.

The SVA virtual training platform eliminated travel for students, saving precious resources and decreasing clinicians' time spent away from Veteran care. These courses reached learners where they were—in their clinical areas. Synchronous courses throughout 2021 included virtual instruction through learning platforms, such as SimIQ, MS Teams, WebEx, and Zoom.

Asynchronous instruction offered clinicians pre-learning options for synchronous events, just-in-time training solutions such as Moodle, a Learning Management System platform, videos, scenarios, and refresher training.

Thanks to SVA, SimLEARN has provided numerous virtual trainings through 2021, allowing for continued clinical training despite not being able to be physically together.

LM seeks to be the premier national resource in leveraging local development for national implementation of simulation-based education across the VHA enterprise by:

- Identifying best practices and innovative learning strategies to advance the standard of simulation education and learning.

- Incorporating best practices to enhance SimLEARN's curriculum development at an enterprise level.

- Standardizing the provision of simulation education by providing instructional resources, technology, mentorship, and consultation to instructors and learners.

- Optimizing SimLEARN's ability to measure the success of simulation education and training by integrating monitoring and evaluation metrics throughout the portfolio.

To learn more about SVA and SimLEARN's other training programs, visit innovation.va.gov/simlearn

SimLEARN INNOVATIVE CENTERS FOR EDUCATION

SimLEARN Innovative Centers for Education (SLICE) is a network of partnerships between SimLEARN and participating medical centers reimagining learning by improving outcomes for Veterans through standardized simulation-based education and training.

Affiliated SLICE cells deliver SimLEARN standardized curriculum to address facility specific educational needs for clinical healthcare staff.

Learning Management partners with VA medical centers to identify and nationalize local course offerings to address enterprise-wide educational gaps.

The LM team builds a train-the-trainer component to augment the training curriculum to allow large-scale distribution across the network. SLICE cells coordinate with the NSC to ensure continuity and best practices of curricula across the entire VHA workforce.

This training model reduces the requirement for local employees to travel to the NSC, which reduces training cost as well as the time healthcare staff are absent from the delivery of Veteran care.

The SLICE network creates a framework to:

- Support the deployment of a standardized, evidence-based methodology simulation education, training, evaluation, and data collection.

- Educate local facility instructors to teach national programs through remote learning.

- Standardize the provision of simulation education by delivering instructional resources, technology, mentorship and consultation to instructors and learners.

- Reduce the barriers of innovation implementation within the VHA enterprise by using training as a distribution network to build required and pre-requisite competencies at scale.

THE SLICE NETWORK

Veterans Integrated Service Network (VISN)

1
VA Maine Healthcare System - Togus VAMC – Augusta, ME
White River Junction VMAC – White River Junction, VT
Manchester VA Medical Center – Manchester, NH
VA Connecticut Healthcare System – West Haven, CT

2
VA NY Harbor Healthcare System – NYC, NY
James J. Peters VAMC – Bronx, NY

4
Pittsburgh VAMC – Pittsburgh, VA
Wilmington VA Medical Center – Wilmington, DE
Erie VA Medical Center – Erie, PA

8
Orlando VA Healthcare System - Lake Nona – Orlando, FL
Janes H. Haley Veterans' Hospital – Tampa, FL

10
VA Northeast Ohio Healthcare System, Cleveland VA – Cleveland, OH
Cincinnati VA Medical Center – Cincinnati, OH
Chalmers P. Wylie Ambulatory Care Center – Columbus, OH

12
Clement J. Zablocki VA Medical Center – Milwaukee, WI

15
Kansas City VAMC – Kansas City, MO

17
Audie L. Murphy VA Hospital (South Texas Veterans Health Care System) – San Antonio, TX

19
Oklahoma City VA Healthcare System – Oklahoma, OK

21
Las Vegas (VASNHS) – Las Vegas, NV
VA Northern California Healthcare System (VANHCS) Sacramento VAMC – Mather, CA

23
Minneapolis VA Healthcare System – Minneapolis, MN
A Nebraska-Western Iowa Healthcare System - Omaha – Omaha, NE

RESUSCITATION EDUCATION AND INNOVATION

Established in 2010, the Resuscitation Education and Innovation (REdI) portfolio, led by Associate Director Tracey Robilotto, is the national VHA resuscitation program dedicated to providing VHA employees with a range of lifesaving resuscitation trainings.

As a learning organization committed to its journey in high reliability, REdI utilizes innovative tools and transformative processes to enhance medical emergency responses. REdI maintains three core initiatives:

1 NATIONAL TRAINING CENTER

REdI provides a standardized, robust resuscitation training portfolio using data-driven and innovative solutions to advance the standard of care for Veteran resuscitation outcomes. The National Training Center leverages a systemwide digital platform to amplify Basic Life Support (BLS), Advanced Cardiac Life Support (ACLS), and Pediatric Advanced Life Support (PALS) education throughout VA in 152 facilities. REdI ensures all resuscitation training meets or exceeds American Heart Association (AHA), VHA, and REdI guidelines, providing systemwide official record management for more than 2,500 aligned AHA instructors.

Poor quality CPR is a preventable harm. REdI drives resuscitation quality improvement (RQI) through validated education that provides deliberate practice of critical skills that save more lives through low dose, high frequency training. RQI easily satisfies booster training requirements in accordance with the Joint Commission and AHA guidelines. Each year, over 250,000 clinicians actively participate in REdI-sponsored programs.

2 REdI MOCK CODE (RMC) TRAINING PROGRAM

Aligned with the promise of reimagining learning to impact Veteran survival, REdI prepares learners for real-world events through immersive simulation training. This program bridges the gap between technology-based learning and clinical performance in support of the VHA Directive 1177, Cardiopulmonary Resuscitation. The RMC training program provides a framework for local facilities to identify latent safety threats and potential solutions to improve Veteran outcomes. The data collected from the RMC training program is used to develop local performance improvement initiatives to enhance the medical emergency care process.

3 RESUSCITATION SIMULATION SYSTEM TESTING (RSST)

RSST is a protected quality review that provides a facility with observations and recommendations using a Proactive Risk Assessment tool. The RSST utilizes a simulation-based strategy to identify and mitigate potential latent safety threats related to the medical emergency care response processes that are often associated with personnel, equipment, the environment, or the overall system. Based on the observations and recommendations, facilities can create an action plan to drive performance improvement initiatives at the local level.

MILESTONES
In 2021, the REdI team:

- Increased the access to lifesaving training for an augmented workforce in support of COVID-19 surges and VA's Fourth Mission.

- Collaborated with clinical services and national program offices to develop simulation-based scenarios that enhance regulatory training requirements related to medical emergencies.

- Presented Recipe for Success: Building a Robust Mock Code Training Program at the International Meeting on Simulation in Healthcare (IMSH). IMSH is the world's largest conference dedicated to healthcare simulation learning, research, and scholarship, offering more than 250 sessions in various formats, from large plenary sessions to small, interactive immersive courses. It is also considered to be the premier event for the simulation world.

- Presented Staying Alive: A Journey to Redefine the Medical Emergency Care Process at the International Cardiac Arrest Survival Summit, hosted by the Citizen CPR Foundation. Resuscitation experts, educators, and survivors gather at the Cardiac Arrest Survival Summit to offer an opportunity to learn, collaborate, and implement the latest resuscitation science across the full chain of survival.

SUPPORT OPERATIONS

SimLEARN's Support Operations portfolio, led by Associate Director Franklin Espinal, serves as the backbone of SimLEARN.

Data management, procurement, facilities management, and marketing all reside in Support Operations, providing a strong foundation for the other portfolios to succeed. Support Operations is instrumental in telling SimLEARN's story, both inside and outside of VA. In 2021, Support Operations contributed to SimLEARN's success in a variety of ways:

47
Trainings and events hosted at the NSC while adhering to COVID-19 guidelines

56
Training and informational videos developed to support virtual training

8
Blood drives coordinated at the NSC to support Operation Warp Speed to accelerate the development of a COVID-19 vaccine and support patient recovery

THE NATIONAL SIMULATION CENTER UNDERGOES CONSTRUCTION

During 2021, construction began on a second floor above SimLEARN's National Simulation Center (NSC). The Orlando VA Health Care System (OVAHCS) is expanding operations in the Lake Nona "Medical City" campus to support wet-lab research and additional office space.

OVAHCS' Research Service is slated to occupy the second floor. They provide multidisciplinary cutting-edge medical capabilities in oncology, investigational drugs, hand/orthopedic surgery, and internal medicine among others. The scientific environment at the OVAHCS is set up to foster the implementation and successful completion of clinical research. SimLEARN and the research department will be strong collaborators in various research projects, as NSC's space on the first floor provides a premier testing location for research and evaluation.

SUPPORT OPERATIONS

- Oversees facilities and logistics management, such as procurement and management of supplies and medical equipment support.

- Coordinates all administrative and programmatic support for the organization, including supporting training programs, pilots and events occurring at the NSC, and professional audiovisual production services.

- Develops and manages marketing and communications tools for SimLEARN and serves as the primary interface between the organization and the broader VA.

- Provides data quality management for system of record and learning management systems, supporting the total lifecycle sustainment and customization of IT infrastructure and SimLEARN's websites.

SimLEARN DEVELOPS POWER BI DASHBOARD

In 2021, Support Operations used Power BI to develop an interactive dashboard to track and visualize SimLEARN's key performance data.

The main dashboard provides an overview of SimLEARN data, and each portfolio within SimLEARN has a separate page to display data. For example, the dashboard displays a map of all current SLICE sites, which can also be viewed on a micro level by VISN.
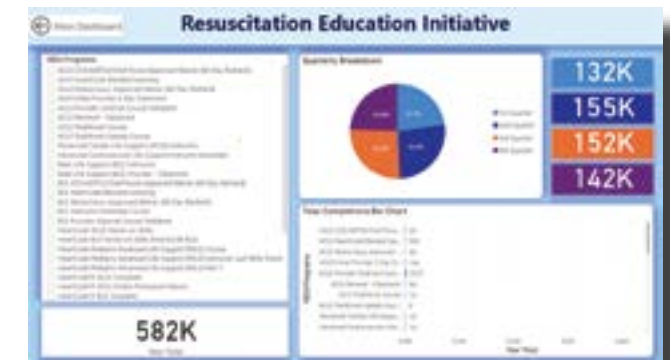
Viewers can also see a quarterly breakdown of how many people completed each REdI program.

VA SECRETARY DENIS R. MCDONOUGH VISITS THE NSC
June 18, 2021

SimLEARN hosted VA Secretary Denis R. McDonough at the NSC in Orlando, FL in mid 2021.

After giving an overview of SimLEARN, our impact on VHA, and Veteran healthcare, we led Secretary McDonough through the NSC to highlight the innovative simulation technologies we research and develop.

We showed him the operating room that displays simulated surgical spaces with high-fidelity simulated manikins.

In the emergency room, Secretary McDonough observed our technicians, who provided a live demonstration of the patient lift system, moving a simulated bariatric patient from one location to another while applying safe patient handling and mobility practices.

In the innovation room, our interprofessional team of VA emergency department providers, healthcare architects, and simulation experts created a full-scale mock-up of multiple individual treatment areas, including a representation of equipment and supplies from the new VHA design guide.

We were honored for the Secretary to have taken such interest in the NSC immersive environment that aims to facilitate simulation technologies and provide a platform to develop and evaluate clinical curriculum and processes before implementation at VA medical facilities.

SimLEARN 2022
What's Next?

In 2022, SimLEARN continues its work of amplifying outcomes, reimagining learning, and transforming simulation to enhance Veteran health and wellness.

Here's what we're looking forward to in the coming year:

- Developing additional activations of new clinical space.

- Launching a new SimLEARN public website.

- Introducing a facility that exponentially increases our impact in VA.

- Adding new SLICE cells across the country.

- Supporting Cerner integration at SimLEARN and stronger partnerships with OI&T, Biomed, Cybersecurity, and VHA to aid clinical readiness at Cerner implementation sites, conduct workflow optimization, and assess emerging biomedical devices for integration with Cerner.

- Developing the Learning Network (managed wi-fi service) for immersive learning, simulation, assessment, and evaluation across distance.

- Planning Industry Days to highlight new technologies.

- Increasing 5G collaborations among VA's 5G facilities and integration of 5G into clinical practice.

- Launching mock code training nationally after a successful pilot in 2021.

- Implementing CTAM Model – Clinical Technology Assessment Model – to assess technology and use cases, plan and execute simulations, analyze simulation findings/usability and clinical workflows, and distribute results to make technical recommendations before acquisition.

- Holding a national ribbon-cutting event for ICT – Intermediate Care Technician – (currently in development) course to include the Secretary of Veterans Affairs and notables such as Dr. Jonathan Borgwing and Dr. Ryan Vega.

LEARN MORE ABOUT SimLEARN AT innovation.va.gov/simlearn

Or, email us at VASimLEARNgeneralinformation@va.gov