VA | U.S. Department of Veterans Affairs

DEAN

Office of Discovery, Education & Affiliate Networks

2020 Year in Review

FOREWORD

Innovation. Collaboration. Advancement.

In a year of tremendous change and uncertainty, these three words remained constants in the DEAN vocabulary. Innovation through rapid advancement in technologies and novel applications that challenge the status quo. Collaboration across the Veterans Health Administration (VHA) network, externally with the public, private sectors, academia, and with Veterans themselves. Advancement of the programs, initiatives, and best practices that support the highest quality care for Veterans.

As the following pages demonstrate, DEAN is at the forefront of driving continuous learning and improvement at VHA. From charting new paths of investigative medical research to disseminating innovative best practices, as well as training future healthcare professionals and helping clinicians at all career stages sharpen their skills through simulated education, DEAN is advancing VHA as a learning organization. Much of our work is accomplished by partnering with heroes so dedicated to the country that they volunteer again, which is an inspiration to all. Not only do Veterans entrust us with their care, but they are also our partners in research, discovery, and innovation.

One other word that defined DEAN's work this year: resilience. Faced with a once-in-a-century pandemic, DEAN quickly shifted into high gear, responding to the critical and ever-changing dynamics of COVID-19. DEAN staff ably pivoted to address the immediate health needs of Veterans and a country in crisis, while staying on task to promote research, education, and discovery.

I am tremendously proud of the work you are about to read, and of the innovation and collaboration that powered its advancement.

CAROLYN M. CLANCY, MD
Assistant Under Secretary for Health
Discovery, Education and Affiliate Networks
Veterans Health Administration

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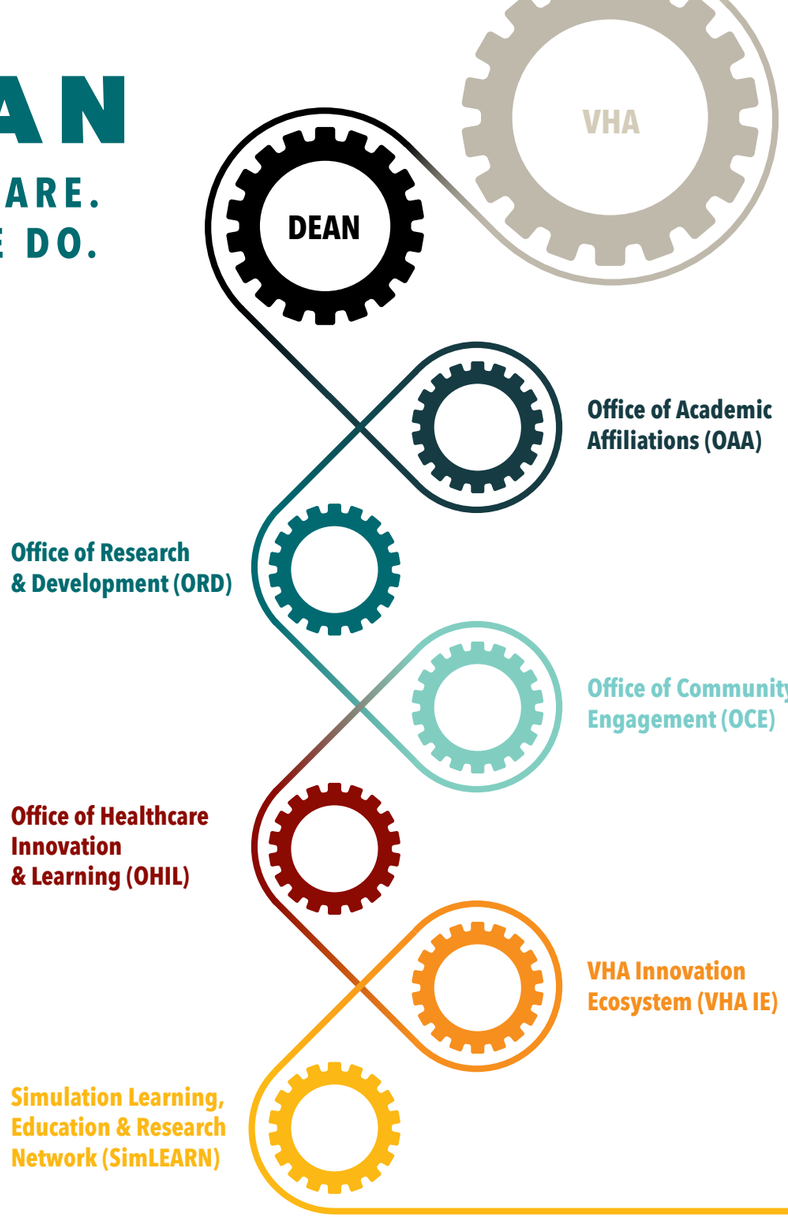
DEAN

WHO WE ARE. WHAT WE DO.



Both collectively and individually, DEAN offices promote a learning culture that celebrates shared knowledge.

The Office of Research and Development's (ORD) 95-year-old research program is embedded as part of the Nation's single largest healthcare system.

The Office of Academic Affiliations (OAA), through its extensive graduate medical education programs, is training the next generation of healthcare providers.

The VHA Innovation Ecosystem (VHA IE) programs address emerging needs, improve upon existing processes, and rapidly disseminate learning.

This year, the additions of the Office of Healthcare Innovation and Learning (OHIL), Simulation Learning, Education and Research Network (SimLEARN), and the Office of Community Engagement (OCE) to the DEAN family accelerated VA's journey toward becoming a learning organization, further amplifying innovation, collaboration, and advancement.

Together, our offices combine the best and the brightest to proactively solve some of healthcare's most challenging problems and improve health outcomes for Veterans.

OUR MISSION

To ensure that Veterans have access to the most innovative healthcare solutions by promoting medical research initiatives, training healthcare professions, and developing community partnerships.

2020

PROGRAM OFFICE HIGHLIGHTS

OFFICE OF ACADEMIC AFFILIATIONS

OFFICE OF RESEARCH & DEVELOPMENT

OFFICE OF COMMUNITY ENGAGEMENT

VHA INNOVATION ECOSYSTEM

SIMULATION LEARNING, EDUCATION & RESEARCH NETWORK

> A Learning Healthcare System is defined as a system in which science, informatics, incentives, and culture are aligned for continuous improvement and innovation.
>
> **– NATIONAL ACADEMY OF MEDICINE**

OAA

OFFICE OF ACADEMIC AFFILIATIONS

OAA conducts the Nation's largest education and training program for health professions students and residents through affiliations with over 1,800 academic institutions including nearly all U.S. medical schools—and has done so for the past 75 years. Together, VA and our academic partners are leading the way in preparing new healthcare professionals to meet the complex needs of our Veterans and provide them with the highest quality care.

Medical & Dental Education

Associated Health Education

Advanced Fellowships

Nursing Education

TRAINING PROGRAMS

In 2020, VA continued to oversee implementation of two training programs mandated by Congress—one under The Veterans Access, Choice, and Accountability Act (Choice Act) of 2014, and one under the Maintaining Systems and Strengthening Integrated Outside Networks (MISSION) Act of 2018.

Choice Act Graduate Medical Education (GME) Residency expands residency programs to improve access to primary care, mental health, and other specialties for Veterans in underserved areas. This effort provides grants to establish new affiliations, develop educational infrastructure, and fund resident positions. The 1,425 new residency positions to date is ahead of schedule in meeting the goal of 1,500 positions by 2024.

The Rural Interprofessional Faculty Development Initiative (RIFDI) is a collaborative effort between OAA and VHA Office of Rural Health to create a structured faculty development program to support new and emerging health professions training at 23 rural VA sites. Nearly three million or 1/3 of Veterans live in rural areas where often there is one physician for 2,500 patients.

VETERANS HEALING VETERANS

MISSION Act Veterans Healing Veterans Medical Access and Scholarship Program (VHV) aims to create a pipeline of clinicians who uniquely understand Veterans' health issues while addressing VA long-term staffing needs. VHV partners with five Teague-Cranston Schools and four Historically Black Colleges and Universities to sponsor two eligible Veteran students with full tuition and a monthly stipend. In return, these students commit to four years of practice with VA upon completing their training, board certification, and residency.

In 2020, VHV had its first participant in the program. Brandy Woods is a third-generation Veteran who joined the Army when she was 21. Now 19 years later, she is a first-year medical student at Morehouse School of Medicine in Atlanta, Georgia.

"I grew up in a low-income household. Paying for medical school just wasn't feasible. When I finally applied to Morehouse, I had no idea how I would pay my tuition. That's when I learned about the Veterans Healing Veterans scholarship.

– BRANDY WOODS
VHV Award Recipient

Marjorie A. Bowman, MD, MPA, VHA Chief Academic Affiliations Officer, said, "The opportunity to foster the connection between Veterans and train Veterans as physicians who will share their expertise and unique understanding is why the scholarship is so important." Brandy agrees, "Veterans understand each other. We've been in the trenches together. We get each other in ways that are unique to military experience."

MOREHOUSE SCHOOL OF MEDICINE

READ MORE HERE

1.8k The number of OAA affiliations with academic institutions

118k The number of clinical trainees rotated through VA Medical Centers in 2020

70% The percent of our Nation's physicians who have trained within VA

OAA

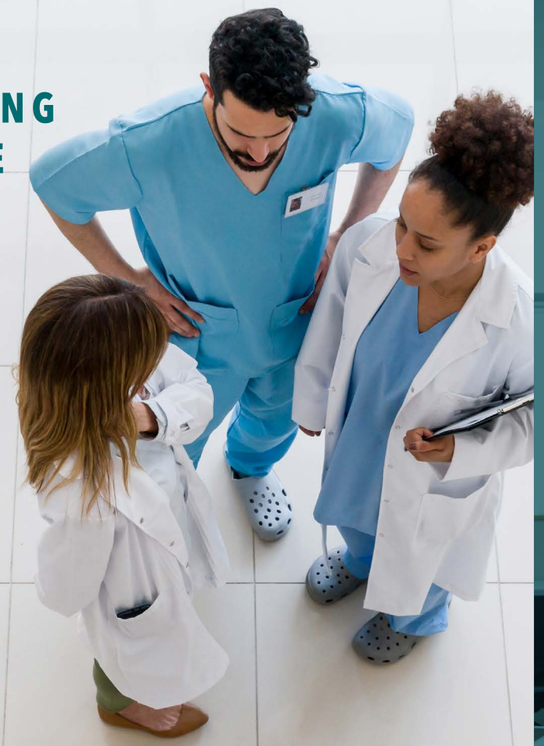
EXPANDING TRAINING & IMPROVING CARE

VA excels at providing holistic care for Veterans, and developed and implemented training programs to expand the clinical workforce across new and emerging health professions. OAA prepares health professionals at all stages of their careers.

VA is continuing to expand its training of a variety of mental health professionals, such as psychiatrists and psychologists. VA trainees work with and learn from doctors, psychiatrists, nurse practitioners, nurses, social workers, pharmacists, occupational therapists, and physical therapists while learning the importance of integrated care delivery.

OAA also offers residency programs for physician assistants and nurse practitioners to develop confidence and competence in primary care and mental health that augment VA's ability to provide timely, exceptional care.

Advanced fellowships are designed to develop skills in highly specialized clinical areas, quality improvement, health system policy and transformation, and research.



519 The number of non-physician VA residencies in 2020

653 The number of advanced VA fellowships for medical professionals in 2020

315+ The number of chaplains VA trained in 2020

7.7k+ The number of mental health professionals OAA supports annually with training

70% The percent of VA psychiatrists in the U.S. who receive clinical training at a VA Medical Center

60% The percent of VA psychologists in the U.S. who receive clinical training at a VA Medical Center

1 in 5 The number of psychologists who complete their doctoral internships in VA

VA pioneered the training program development in new health disciplines such as geriatrics, spinal cord injury medicine, and addiction psychiatry.

VA helped define the role of new treatments and practice patterns such as pain management, interprofessional education, and team-based care.

VA offers post-residency, post-doctoral and post-masters fellowships to physicians, dentists, and associated health professionals in such areas as addiction treatment, geriatric neurology, Parkinson's disease, polytrauma, traumatic brain injury rehabilitation, and women's health.

VA instituted residency programs for non-physician providers such as nurse practitioners and physician assistants.

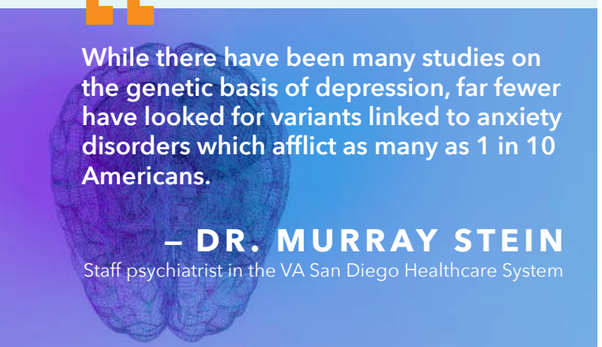
1.8k+ The number of psychologists VA trained in 2020

1.1k+ The number of social work fellows VA trained in 2020

ORD

OFFICE OF RESEARCH & DEVELOPMENT

Through ORD, VA covers the full gamut of health research, from basic sciences like biomedical laboratory studies to clinical trials, data analyses, and studies of how healthcare is delivered and how it can be improved. As part of an integrated healthcare system where more than 60 percent of VA investigators also provide direct patient care, VHA is uniquely positioned to more quickly translate research findings into everyday practice and care for Veterans.



"While there have been many studies on the genetic basis of depression, far fewer have looked for variants linked to anxiety disorders which afflict as many as 1 in 10 Americans."

– DR. MURRAY STEIN
Staff psychiatrist in the VA San Diego Healthcare System

MILLION VETERAN PROGRAM (MVP)

Launched in 2011, MVP establishes the largest and most comprehensive research database of genetic, health, lifestyle, and military exposure information in the world. Veterans partner with us by volunteering to provide a blood sample, complete several surveys, and allow access to their health records (all of which are protected). By providing these data, Veterans serve their country a second time, helping researchers develop new discoveries that will improve healthcare for all.

This year, MVP not only reached the milestone of 830,000 Veteran participants, but also made strides in mental health. MVP reported findings from the largest genome-wide association study of anxiety to date while providing a foundation for future research to examine gene interaction with mental health disorders. A team of scientists representing Yale University, the VA Connecticut Healthcare System, the VA San Diego Healthcare System, and the University of California, San Diego, identified six genetic variants linked to the development of anxiety disorders.

MVP also instituted the mental health cohort, MVP-MIND (Measures Investigating Neuropsychological Disorders), which aims at enrolling 50,000 Veterans with severe mental illness and substance use disorders.

30+ Studies Using MVP Data are Currently Underway, Including:

- Cancer
- Cardiovascular Disease
- Diabetes
- Gulf War Illness
- Kidney Disease
- Macular Degeneration
- Mental Health
- Parkinson's Disease
- PTSD
- Substance Use Disorders
- Suicide Prevention
- Traumatic Brain Injury

103
The number of active U.S. research sites

7,288
The number of active funded research projects (VA funding and other sources)

$1.99B
The total research budget (including VA and other sources)

10,249
The number of published research articles authored or co-authored by VA investigators

ARTIFICIAL INTELLIGENCE

The National Artificial Intelligence Institute (NAII) designs and collaborates on large-scale artificial intelligence (AI) research and development initiatives. The NAII is dedicated to advancing its capabilities to construct real-world impact and outcomes for Veterans' health and well-being, helping VA advance its capacity from basic to clinical research while training a new generation of AI scientists, practitioners, and clinicians.

The AI-able Data Ecosystem Pilot won a Government Innovation Award presented jointly by Government Computer News, Federal Computing Weekly, and Washington Technology and Defense Systems. The AI-able ecosystem is empowered through voluntary incentives linking federal, industry, academia, and nonprofit organizations around AI research and development.

DIVERSITY IN RESEARCH

ORD launched a Diversity, Equity, and Inclusion Working Group (DEIWG) in July 2020 to develop a diverse scientific workforce through training and funding opportunities, stimulate research focused on minority health and reduction of health disparities, promote a culture of inclusion that will enhance the quality and relevancy of our work, and promote equity in scientific activities so they accurately reflect the communities we serve. The DEIWG has also analyzed the distribution of VA scientists by race and gender to develop a job posting resource to facilitate the recruitment of diverse individuals to ORD.

ORD FEATURED RESEARCH

COOPERATIVE STUDIES PROGRAM (CSP)

CSP is responsible for planning and conducting large multi-site clinical trials and epidemiological studies that produce innovative and effective solutions to national healthcare problems. High-impact studies are conducted focusing on key diseases and conditions impacting Veterans, including mental health, infectious diseases, diabetes, and cancer.

PRECISION ONCOLOGY PROGRAM FOR CANCER OF THE PROSTATE (POPCaP)

VA partnered with the Prostate Cancer Foundation to create POPCaP. The program uses precision medicine to provide individualized prostate cancer treatment for Veterans while also ensuring access to genetic testing and counseling, biomarker-driven clinical trials, and FDA-approved drugs paired with specific mutations within prostate cancer tumors. VA launched the Prostate Cancer Analysis for Therapy Choice (PATCH) pilot program in 2020. This effort will leverage the efforts of the National Precision Oncology Program to increase the number of VA facilities involved in prostate cancer clinical trials, improve Veteran access to those trials, and increase the number of Veterans enrolled in prostate cancer research and cutting-edge therapies.

CONFIRM TRIAL

The Colonoscopy vs. Fecal Immunochemical Testing in Reducing Mortality from Colorectal Cancer (CONFIRM) trial was designed to compare the efficacy of colonoscopies vs. fecal immunochemical testing (FIT) in reducing colon cancer deaths and will have a 10-year follow-up to determine what screening approach is more effective at preventing death.

READ MORE HERE

NAVIGATE NETWORK

The NCI And VA Interagency Group to Accelerate Trials Enrollment (NAVIGATE)–a cancer clinical trials network in partnership with the National Cancer Institute (NCI)–was designed to bring more trials to Veterans within the VA system. It offers Veterans hope when their conditions are beyond what routine clinical care can offer by increasing access to novel treatments through the VA clinical research enterprise.

READ MORE HERE

PIVOT TRIAL

Prostate Cancer Intervention vs. Observation Trial (PIVOT) has spanned 20 years and includes 44 VA facilities and eight academic centers to study the second leading cause of cancer death in men, prostate cancer. It has demonstrated that for early stage prostate cancer, observation is as effective as surgery.

READ MORE HERE

2020 HIGHLIGHTS

FEB 2020

- Launched the Randomized Proton Pump Inhibitor De-prescribing Program (RaPPID) study to reduce proton pump inhibitor use, when indicated for patient safety. PPIs are used to treat acid-related stomach disorders such as ulcers, heartburn, and acid reflux. Their long-term use can lead to pneumonia, heart attack, and increased mortality.

MAY 2020

- Teamed with the Parkinson's Foundation to improve the health, well-being, and quality of life of Veterans living with Parkinson's disease.
- Started the Epidemiology, Immunology and Clinical Characteristics of COVID-19 (EPIC3), a national four-year study on the impact of COVID-19 on Veterans. The study will examine data and biospecimens, such as throat swabs and blood, to learn more about risk factors, progression, and immunity in COVID-19.

JUN 2020

- Invented the Ventilate Multiple Individuals (VentMI), a device allowing two patients with different needs to safely use the same ventilator. The device uses a regulator similar to those on air tanks used for scuba diving.
- Partnered with the GO_2 Foundation for Lung Cancer and its network of 750 Centers of Excellence to increase awareness relating to lung screening options and improve outcomes for Veterans with lung cancer.

JUL 2020

- Announced the Insights Partnership with the Departments of Energy and Health and Human Services to coordinate and share health data, research, and expertise to aid in the fight against COVID-19.
- Designed a new wheelchair that reduces bacterial hand contamination and improves shoulder ergonomics.
- Joined with the Department of Defense on the Study to Assess Risk and Resilience in Servicemembers (STARRS) to generate actionable recommendations through critical data-sharing to reduce suicides among members of the military.

AUG 2020

- Started the first of multiple studies in the VA Coronavirus Research and Efficacy Studies (VA CURES) framework to examine the use of convalescent plasma for treating seriously ill COVID-19 patients, as part of VA's larger effort to give Veterans faster access to potential treatments for COVID-19.

OCE

OFFICE OF COMMUNITY ENGAGEMENT

OCE serves as a trusted resource and a catalyst for the growth of effective partnerships at the national, state, and community levels and advances the health and wellbeing of Veterans through exploration of innovative, safe, and ethical emerging therapies. In addition to joining DEAN in 2020, OCE added 12 partnerships to its portfolio and led another successful Community Partnership Challenge.

CONNECTING WITH VETERANS IN CRISIS

In August 2020, the VA-OnStar partnership was initiated and has since provided groundbreaking efforts to address VA's top clinical priority, suicide prevention. OnStar's emergency services offer Veterans in crisis the opportunity to connect to confidential support 24/7 via the emergency services button in an OnStar-equipped vehicle or through the OnStar Guardian smartphone app. Veterans must own a GM vehicle and enroll in OnStar. This revolutionary program provides users with support services directly and immediately, with more than 400 VA suicide prevention coordinators and their teams being connected daily.

Through this partnership, OCE will collaborate with the VA's Veterans Crisis Line to provide education and training to reinforce suicide prevention efforts and access to such. It is in initiatives such as the VA-OnStar alliance that we are better able to serve those who have served us.

VA X OnStar®

VA X **GO_2 Foundation for Lung Cancer** aims to increase Veteran lung cancer screening and provide earlier healthcare interventions. VA diagnoses 7,700 Veterans with lung cancer each year and an estimated 900,000 remain at risk, making access to screening a top priority at VHA's National Center for Health Promotion and Disease Prevention. With more than 700 screening centers nationwide, GO_2 Foundation is working closely with VA to provide additional resources for screening implementation, professional development training, patient education campaigns, and potential research programs.

VA X **MAZON: A Jewish Response to Hunger** formed a partnership to improve Veterans' access to food security. MAZON leads a national effort to eliminate barriers to the Supplemental Nutrition Assistance Program (SNAP), which helps to keep food on the table for an estimated 1.4 million Veterans. The alliance increases awareness about the risks associated with food insecurity and delivers solutions to address this through outreach to Veterans.

VA X **Parkinson's Foundation** established an alliance to increase Veterans and healthcare provider access to Parkinson's disease information and resources, educate and train VA staff on disease management, and improve service coordination and navigation. The Foundation supports outreach efforts that promote education and awareness among Veterans, with whom 80,000 are currently suffering from this disease. VA operates six specialized Parkinson's Disease Research, Education, and Clinical Centers (PADRECCs), which assist Veterans in effectively managing Parkinson's and other movement disorders by way of VA pharmacy benefits, physical, occupational, and speech therapies, medical equipment, surgical services, and other valuable resources.

VA X **Y-USA** work to provide effective services to Veterans. Since 2015, this partnership has leveraged the resources and expertise of both organizations to promote the well-being of Veterans and their families. VHA employees throughout the country work with local YMCAs to connect Veterans to needed resources in their communities. Veterans can access volunteer opportunities plus services and benefits in the areas of healthy lifestyle programming and community reintegration.

OCE COMMUNITY PARTNERSHIPS

The **National VHA Community Partnership Challenge (CPC)** is an annual contest that highlights nonmonetary collaborations between VHA and non-governmental organizations to acknowledge the top three grass roots initiatives led by VHA employees.

A panel of judges reviews applications to determine which collaborations are most positively impacting Veterans, their families, caregivers, and survivors nationwide. Unique ideas, best practices, and innovative approaches allow VA to attain goals by closing gaps in services while spurring organic replication across the U.S.

This year, more than 45 facilities applied and included examples of how the partnership addressed the 2020 theme: social determinants of health (SDOH). SDOH are conditions in the environments where Veterans live, learn, play, worship, and age such as access to education, employment, food security, housing, spiritual support, and transportation.

The COVID-19 pandemic profoundly impacted SDOH with so many American Veterans or their families experiencing job loss and the inability to pay for necessities such as housing and food, making the winners that much more impactful.

2020 CPC WINNERS

- **Cincinnati VA Medical Center X Freestore Foodbank**
- **Ralph H. Johnson VA Medical Center X Lowcountry Hospitality Association**
- **VA Ann Arbor Medical Center X Toledo Community Outpatient Clinic X Toledo Bar Association**

Partnerships are an important component of VHA care that can address needs across all social determinants of health. The field-based employees know what the Veterans in their community need and are creative in partnering to achieve optimal outcomes. We lift up these best practices to support adoption across the entire VHA system.

– DR. TRACY L. WEISTREICH
Nurse Executive, Office of Community Engagement and Center for Compassionate Care Innovation

10k+
The number of meals provided to Veterans and their families by Freestore Foodback over three years

53%
The percent of HUDVASH recipients who are employed – 8% higher than the national standard

297
The number of Veterans utilizing Toledo Bar Association's free legal services in 2020

USING LIGHT TO TREAT TBI

In collaboration with subject matter experts internal and external to VA, OCE carried out a clinical demonstration pilot with clinicians at the VA Boston Healthcare System (VABHS) to explore the use of low-level laser light therapy (LLLT) using light emitting diodes (LEDs) for the treatment of mild or moderate traumatic brain injury (TBI) symptoms. Results of recent studies show that LED improves brain functioning including attention and memory, emotions, and sleep.

VA remains a world leader in the development and use of innovative therapies, such as LLLT, telehealth, yoga, and other approaches to improve health and well-being.

Throughout the year, the VABHS team leading this program successfully treated more than 120 Veterans with mild or moderate TBI symptoms.

The patient wears a specially designed LED headset for 25 minutes, three times a week, in the privacy and comfort of their home to promote healing at the cellular level. Those using this treatment demonstrated improvement in at least two functional domains and consistently reported improvements in health outcomes including social, cognitive, and physical benefits.

The program can also be tailored to meet the needs of the geographic area and patient preferences through convenient at-home treatment access and the availability of video teleconferencing appointments. Ultimately, this LED clinical series is an exemplary model of advanced patient-centered, patient-driven care developed by VA.

I sleep so much better [after my LED treatment]. I'm much more likely to be active and engaged in doing things. In general, I feel better. It really has made a significant change to me, personally.

– MICHAEL SELLERS
former U.S. Army field artillery officer

VHA IE

VHA INNOVATION ECOSYSTEM

VHA IE empowers frontline employees and leverages the collective power of external partners from academia, industry, non-profits, and other government agencies to facilitate mission-driven, healthcare innovation. This year, through its Innovator Bootcamps, VHA Shark Tank Competition, hackathons, and other initiatives, VHA IE enabled frontline staff to serve as change agents across the VHA enterprise.

SAVING FEET TO SAVE LIVES

A diabetic foot ulcer (DFU) can easily lead to amputation or even death. Most at-risk Veterans face a five year mortality rate of 43 percent after developing their first DFU. With 25 percent of Veterans suffering from diabetes, DFUs are a major concern. Last year, VA treated 75,000 DFUs accounting for more than 80% of VA's non-traumatic amputations, costing over $3.2B.

VA's partnership with Podimetrics, led by Suzanne Shirley, VHA IE's Director of Fellowships & Community Engagement, is named The Initiative to End Diabetic Limb Loss at VA (TIEDLLV), and supplies at-risk, diabetic Veterans with mats that use thermal imaging to measure foot temperature. These mats can detect DFUs up to five weeks before they would normally present. Catching these foot ulcers early, before they are visible, can save limbs and lives.

VA has worked aggressively to spread remote temperature monitoring as a standard practice. Through the creation of a national task force, Shirley tested and scaled the devices across VA and has been able to roll the program out to over 40 medical centers. VHA IE is currently preparing the program for national expansion to all VA Medical Centers (VAMCs).

VA x PODIMETRICS

92% The percent hospitalizations decrease at VA facilities where the Podimetrics Mats are rolled out

INNOVATING FOR VETERANS

In 2020, VHA IE's National Center for Collaborative Healthcare Innovation (NCCHI) formally launched its National Centers for Innovation to Impact (NCi2I) effort which aims to foster collaboration between both internal and external partners and select VAMCs to address VA's most pressing healthcare challenges. NCi2I currently encompasses three centers and continues to grow with two more centers expected in the next twelve months.

VA New England Center for Innovation Excellence
Manchester, NH

National Center for Collaborative Healthcare Innovation (NCCHI)
Palo Alto, CA

VA Ventures
Puget Sound, WA

VA New England Center for Innovation Excellence became the third center in December 2020 and is already partnering with DEKA Research and Development Corp on a clinical study of CVS Kidney Care's HemoCare Hemodialysis System.

NCCHI pioneered the NCi2I model, leading expert collaborations with academia, industry, within VA, and other government agencies that build innovative and scalable solutions. Located in Silicon Valley, NCCHI produces thoughtfully designed, developed, and implemented solutions with partners like the Department of Energy's Lawren Livermore National Laboratory, Google's DeepMind, Verizon, Microsoft, and Medivis.

VA Ventures, established in June 2020, operates as an innovation incubator designed to promote early collaboration between VA, academia, start-ups, and industry. The center works with Veterans and staff to identify challenges then turns to its collaborators to develop sustainable, high-impact solutions through hackathon efforts and quarterly pitch sessions.

1M The number of Veterans impacted

$40M The number of dollars saved

25k The number of employees engaged

VHA IE

EMPOWERING FRONTLINE EMPLOYEES

VHA IE enables the discovery and spread of healthcare innovation with much of this work being developed and driven by frontline VHA employees.

LEARN ABOUT VHA IE

VHA INNOVATORS NETWORK (iNET)

iNET invests in VA employees and drives culture change by providing frontline employees the tools and skillsets needed for them to solve the challenges they face every day. The Spark-Seed-Spread Innovation Investment Program (Spark-Seed-Spread) supported over 100 frontline employees (selected from over 300 applications) to design and implement innovative products and programs which impacted more than 85,000 Veterans in 2020. The Innovation Accelerator Program taught these same employees how to operationalize their innovations within VA and become intrapreneurs. Over one million Veterans have been affected by the 500+ Spark-Seed-Spread innovations since 2015.

DIFFUSION OF EXCELLENCE

Diffusion of Excellence (Diffusion) efforts are changing and saving Veteran lives while revolutionizing how healthcare operates throughout VA and the country at large. During the 2020 VHA Innovation Experience, 10 VHA Shark Tank Competition Finalists became Diffusion Fellows after their promising practices received winning bids from VAMC and Veteran Integrated Service Network Director Sharks throughout the U.S.

Promising Practices this year include a Telelactation Program, Centralized Lung Cancer Screening Program, and a Drive-Through Vaccination Clinic. These ten practices join the 59 previous efforts in the Diffusion portfolio and will add to the more than 100,000 Veteran lives positively impacted by Diffusion.

400+ The number of VHA Shark Tank Competition applications received

1M+ The number of Veterans who have been impacted by the 500+ Spark-Seed-Spread innovations since 2015

VHA IE FELLOWSHIP PROGRAM

The VHA IE Fellowship Program builds workforce capacity by developing emerging and senior leaders to become innovation agents capable of championing solutions that will improve healthcare for Veterans.

The Senior Innovation Fellowship is for mature, large-scale innovation projects that are ready to scale, while the Entrepreneur in Residence is for emerging projects that are ready to be tested for real-world impact. Both opportunities expand Fellows' innovation competencies and serve as a leadership development opportunity.

LEARN MORE HERE

"Delivering more, together is at the heart of who we are and what we do. It's part of our innovation DNA and is intrinsic to VHA IE's north star to change and save Veteran lives."

– RYAN VEGA, MD
Chief Officer, Office of Healthcare Innovation and Learning (OHIL)

TEETH IN A DAY

Teeth in a Day will overhaul oral and maxillofacial surgery. With this method, an eligible Veteran who is missing all their teeth, or has teeth damaged beyond repair, can have them replaced with an implant retained prothesis in one appointment.

DIGITAL CARDIOLOGY

Digital Cardiology will work to enable expansion of telecardiology services through widespread implementation and clinical integration of virtual cardiac care.

NOVEL DEVICE FOR TREATMENT OF OBSTRUCTIVE SLEEP APNEA (OSA)

This innovation aims to demonstrate efficacy in reducing obstructive sleep apnea by developing and testing a 3D computer design and printing workflow that manufactures a custom-fit mouthguard.

SimLEARN

SIMULATION LEARNING, EDUCATION & RESEARCH NETWORK

Since its founding in 2009, SimLEARN has become one of VA's treasured assets, expanding and enhancing simulation learning capabilities for VA staff and improving outcomes of care for Veterans. In 2020, SimLEARN joined DEAN, placing it at the nexus of discovery, education, and innovation.

A VALUABLE TRAINING RESOURCE

SimLEARN provides simulation-based, clinical education, and training using a train-the-trainer model and serves as the hub that supports a National Simulation Network of over 150 VAMCs delivering localized training to their staff.

"SimLEARN is energized by the opportunities that come with being part of the DEAN team. Our ability to promote innovation using simulation for education has increased exponentially.

– ERIC BRUNS
Director, SimLEARN

FACILITY CERTIFICATION

The goal for national simulation certification is to establish a structured program that will support improved local delivery of simulation-based training, augment access to developed instructional curricula, and increase continuity across VA. SimLEARN serves as a valuable resource to VA healthcare providers and educators on the operational strategies, simulation technologies, and training methods needed to address local training priorities.

Throughout 2020, 41 VA facilities have submitted applications and 20 have been approved for certification across three tiers.

SIMULATION OUTREACH NETWORK (SON)

SON helps bridge the gap between learning and performing, and in 2020 maintained its efforts to provide consultative services to VA programs and facilities. The network supported multiple simulation field-based training needs serving over 1,000 learners, 13 VAMCs across various programs, System/Hospital Activation, National Tele-Stroke, and Clinical Resource Hub. Additionally, it created and piloted two new courses: *Educator Cardiac Toolbox* and *Sim Essentials*.

The VHA Office of Rural Health (ORH) Enterprise-Wide Initiative simulation-based training occurred at 30 rural sites of care and included 802 rural health workers.

GROWTH IN 2020

Historically, SimLEARN has offered face-to-face and asynchronous modalities where learners physically attend training conducted at the National Simulation Center located in Orlando, Florida. With the changing landscape due to COVID-19, the office developed two programs as alternatives for the traditional training methods: SimLEARN Innovation Cells for Education (SLICE) and SimLEARN Virtual Academy (SVA). Both programs tout a reduction in logistic requirements and training costs such as travel and the time clinical staff are away from Veteran care.

SLICE

This method follows the distributive learning modality, where SimLEARN is the governing body responsible for creating curricula and then trains VA staff to become instructors of the program at local facilities. This method ensures continuity of curricula across the entire VA workforce and allows greater flexibility in providing individualized training across the Nation.

SVA

This method leverages innovation and technology to advance simulation education through synchronous and asynchronous modalities. Synchronous methods are conducted via virtual live instruction on various platforms to meet the needs or capabilities of each facility. Asynchronous training includes pre-learning for synchronous events, persistent learning environments for recurring asynchronous courses, and just-in-time training solutions.

33
The number of simulation-based classes delivered to 290 hospital staff, VA employees, and other participants

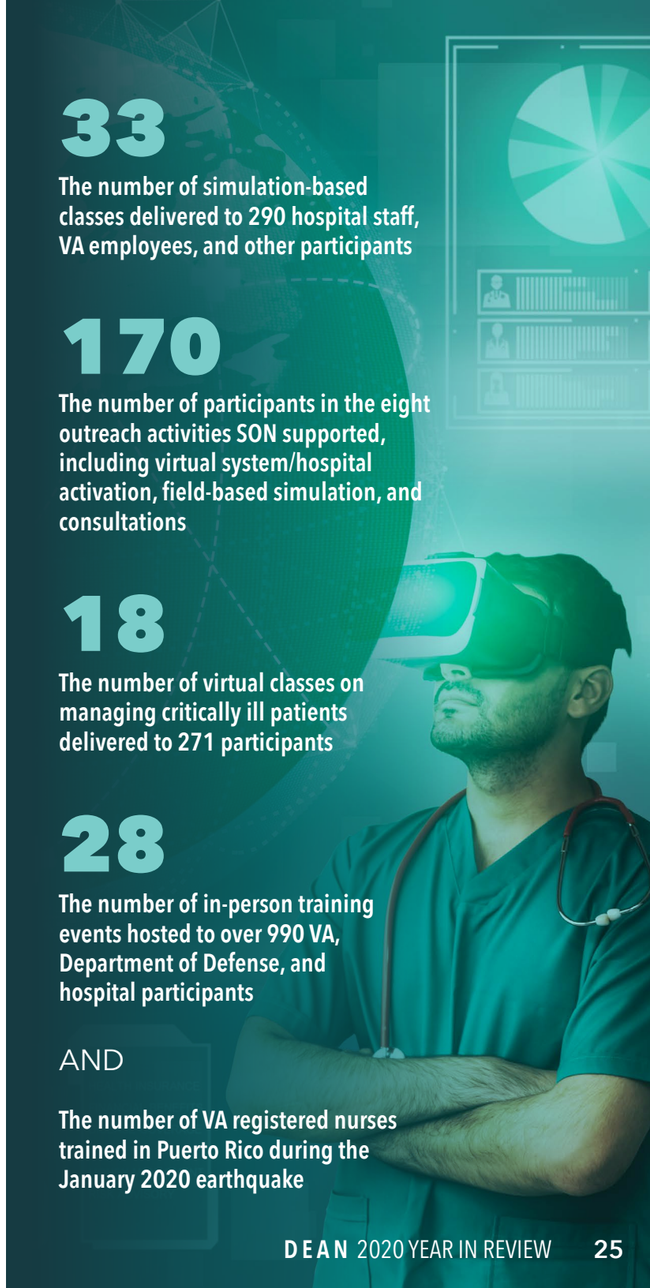
170
The number of participants in the eight outreach activities SON supported, including virtual system/hospital activation, field-based simulation, and consultations

18
The number of virtual classes on managing critically ill patients delivered to 271 participants

28
The number of in-person training events hosted to over 990 VA, Department of Defense, and hospital participants

AND

The number of VA registered nurses trained in Puerto Rico during the January 2020 earthquake



SimLEARN

SIMULATION IN ACTION

RESUSCITATION EDUCATION INITIATIVE (REdI)

REdI is a national program designed to provide enterprise-wide oversight and support through the standardization of Basic Life Support (BLS) and Advanced Cardiac Life Support (ACLS) training, tracking, and monitoring. REdI provides a robust resuscitation portfolio to deliver critical training to direct care employees across VA. REdI's goal is to transition facilities away from instructor led training to a digital platform with skills validation. This paradigm shift of low dose, high frequency training will drive resuscitation quality improvement through validated education resulting in improved patient outcomes.

RESUSCITATION SIMULATION SYSTEM TESTING (RSST)

RSST, a consultative service provided by REdI, is a simulation-based strategy used to identify and mitigate potential vulnerabilities or latent safety threats related to the medical emergency response. The ability to simulate critical patient care events allows healthcare teams to respond more confidently and effectively to a medical emergency while identifying areas of opportunity related to equipment, personnel, environment, and overall system.

7k+ The number of subscribers to the Simulation Exchange Newsletter

987 The number of SimLEARN Community of Practice (CoP) participants in 2020

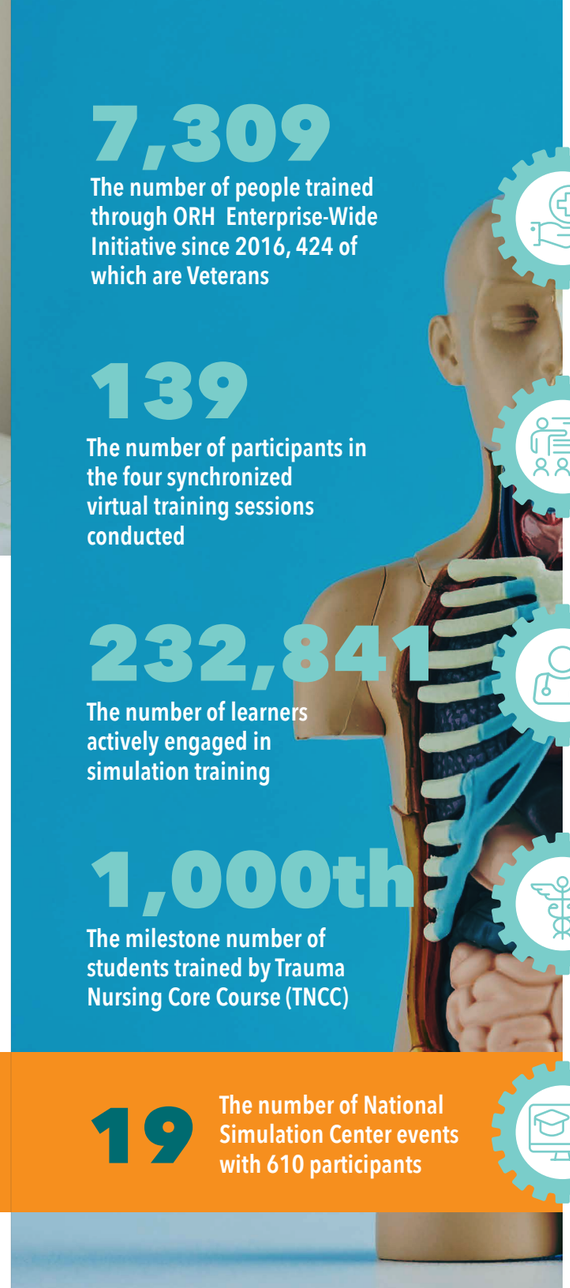
19 The number of National Simulation Center events with 610 participants

7,309
The number of people trained through ORH Enterprise-Wide Initiative since 2016, 424 of which are Veterans

139
The number of participants in the four synchronized virtual training sessions conducted

232,841
The number of learners actively engaged in simulation training

1,000th
The milestone number of students trained by Trauma Nursing Core Course (TNCC)



SAMPLE TRAINING COURSES

FUNDAMENTAL CRITICAL CARE SUPPORT (FCCS)
Provides a framework for the management of an injured patient through the prioritization and stabilization conducted using simulation equipment

INTRODUCTION TO CLINICAL SIMULATION (ICS) INSTRUCTOR TRAINING Provides a foundation for simulation-based training by combining didactic, small group and hands-on simulation activities

OUT OF OPERATING ROOM AIRWAY MANAGEMENT TRAIN THE PROVIDER (OOORAM) Addresses the appropriate competencies of providers and eliminates Out of Operating Room Airway Management knowledge gaps for procedures occurring out of the facility operating room

SIMULATION FOR CLINICAL EXCELLENCE IN NURSING SERVICES (SCENS) Learners experience synergistic collective learning through fully immersive nursing simulations to identify errors and mark successes

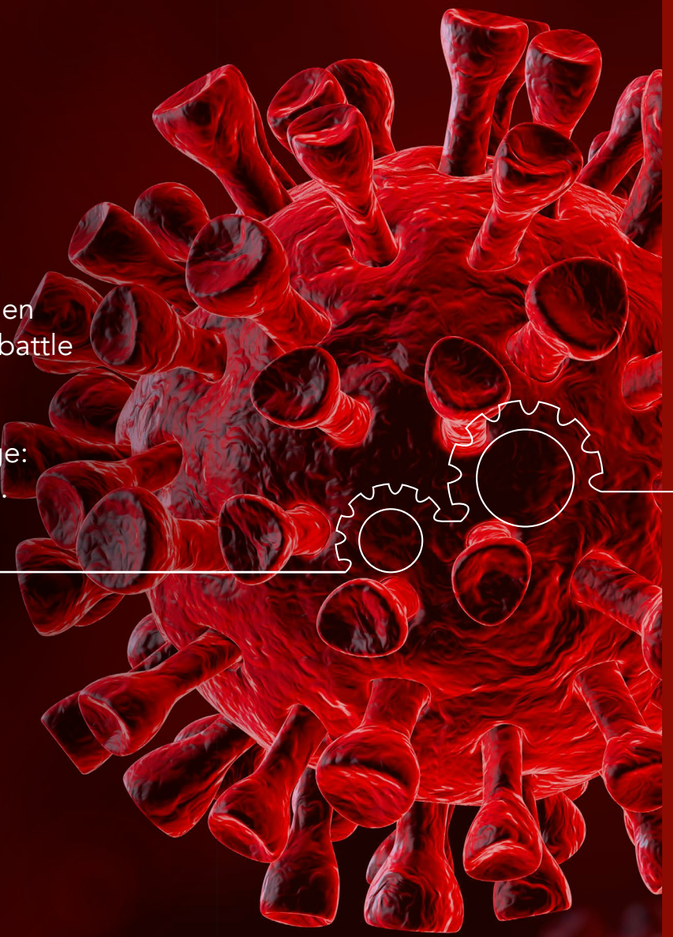
TRAUMA NURSING CORE COURSE (TNCC)
Helps nurses develop a rapid and accurate patient assessment process when caring for the ill or injured patient through lectures, hands-on psychomotor skill stations, and interactive online learning

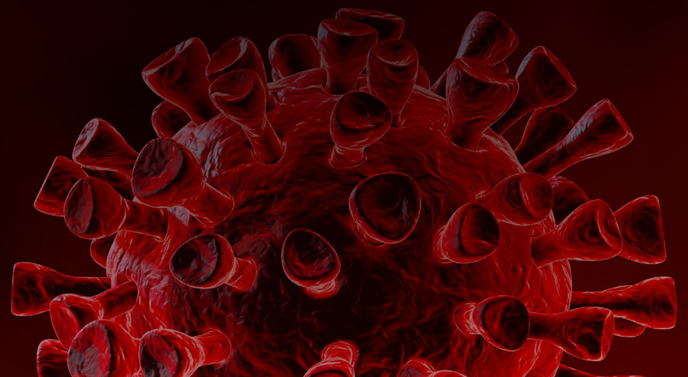
2020

RESPONDING TO COVID-19

When faced with a global pandemic, VA moved swiftly to fulfill its fourth mission: aiding the Nation in times of emergency or natural disaster. When COVID-19 became a national public health crisis, VA quickly pivoted to battle the pandemic while maintaining high-quality care for Veterans.

In many respects, the pandemic served as a catalyst for beneficial change: accelerating trends underway and expanding reach to new stakeholders.





"COVID-19 has shown the Nation the capabilities of the Department of Veterans Affairs. While we are certainly not perfect, we are a learning organization and seek to always find ways to improve."

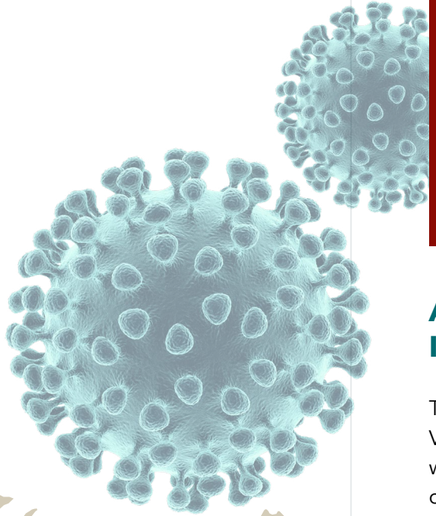
– RICHARD A. STONE, MD
Executive in Charge, VHA

COVID-19

A COORDINATED RESPONSE

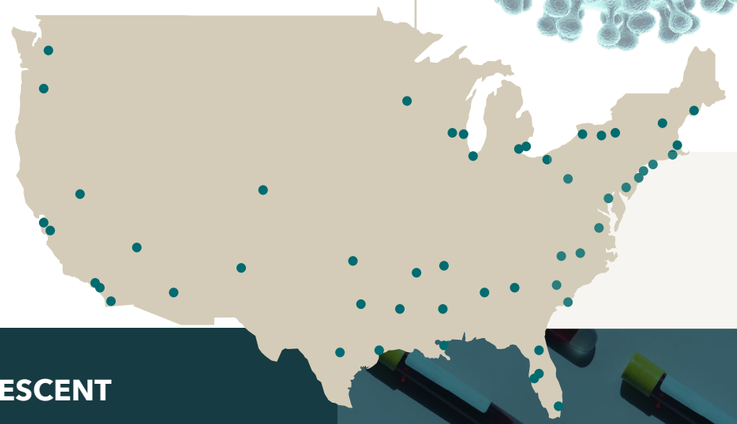
At the onset of the pandemic, ORD expanded its focus to include establishing and taking part in clinical trials and projects aimed at understanding and treating the COVID-19 virus.

VA Research coordinated closely with internal and external partners – including other federal agencies and pharmaceutical companies – to identify areas where VA's nationwide research capacity, resources, and infrastructure could make the greatest contribution.



201 COVID-19 Research Projects

In 70 locations across the Nation



ORD RESEARCH IN ACTION

ACTIV Initiative

The Accelerated COVID-19 Therapeutic Interventions and Vaccines (ACTIV) initiative is a public-private partnership with the National Institutes of Health (NIH) to develop a coordinated research strategy for prioritizing and speeding the development of the most promising treatments and vaccines.

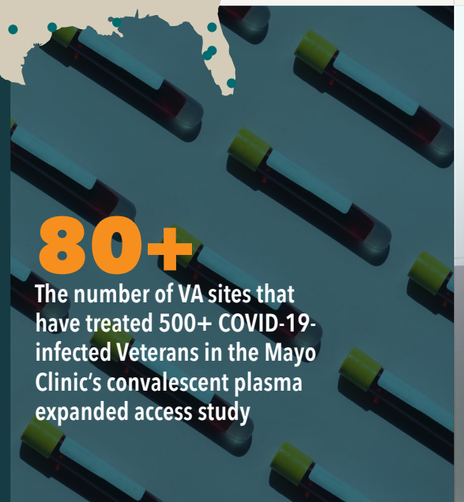
Evidence Synthesis Program

The Evidence Synthesis Program is rapidly synthesizing evidence from the available scientific literature and translating this into usable guidance for clinicians in VA and beyond.

As a participant in Operation Warp Speed, ORD engaged with private firms and other federal agencies to accelerate the development, manufacturing, and distribution of COVID-19 vaccines, therapeutics, and diagnostics including Moderna/COVE, AstraZeneca, Janssen/ENSEMBLE, and Pfizer.

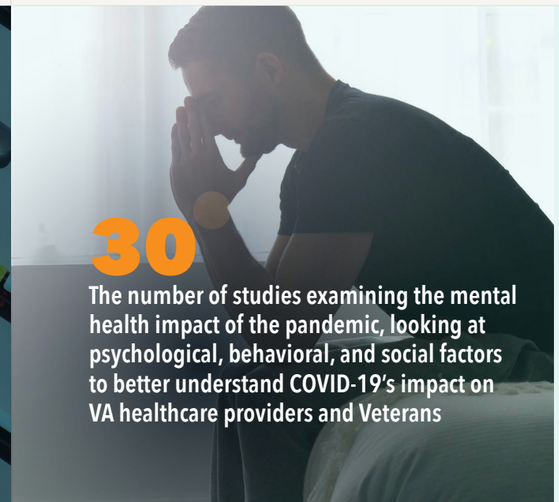
CONVALESCENT PLASMA

Dr. Parisa Khan, a VA clinical pharmacist specializing in infectious diseases – and a recovered COVID-19 patient – is one of many Veterans and VA staffers who donated convalescent plasma. The U.S. Food and Drug Administration (FDA) regulates COVID-19 convalescent plasma as an investigational treatment for critically ill patients.



80+

The number of VA sites that have treated 500+ COVID-19-infected Veterans in the Mayo Clinic's convalescent plasma expanded access study



30

The number of studies examining the mental health impact of the pandemic, looking at psychological, behavioral, and social factors to better understand COVID-19's impact on VA healthcare providers and Veterans

HITCH STUDY

A phase 2 clinical trial exploring whether degarelix, an androgen suppressor used in prostate cancer, may be effective for men with COVID-19

READ MORE HERE

EPIC3 STUDY

A study using specimens from COVID-19-infected Veterans to provide insight into the disease, outcomes, and treatment

READ MORE HERE

SimLEARN

SUPPORTING THOSE WHO SERVE

In 2020, SimLEARN partnered with Employee Education System (EES) to create a public-facing website to provide free COVID-19-related training and resources, offered through VA and other authoritative external sources, without the need for staff to log in to the VA network or utilize a specific user account.

83K+
Global Pageviews in 2020

VISIT THE SimLEARN WEBSITE

AVAILABLE TRAINING

Topics include: Intensive Care Unit, Wards, Emergency Department, Community Living Centers, Mental Health, State Veterans Homes, Intermediate Care Technicians & Nurses

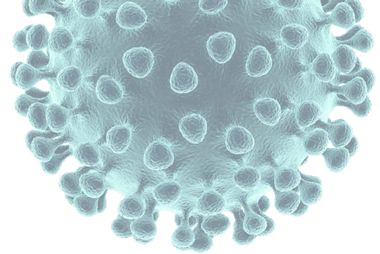
300+
The number of modules available for just-in-time Clinical Crisis Skills Training

UTILIZATION, CONDITION, LOCATION SYSTEM (UCLS) VENTILATOR DASHBOARD

The goal of Emanate Networks is to be a disruption in the biomedical industry by applying machine learning, data science, and artificial intelligence to a tagged asset. The tags are constructed with intelligence that quickly identifies anomalies by comparing a baseline operating measurement to its continuous operating state, thus identifying and alerting abnormalities in the biomedical equipment's internal components. Pioneering new technology that adds utilization and condition to location drives efficient equipment workflows, increased patient safety, better compliance, and disrupts today's standard preventative equipment maintenance to one that is predictive based on usage. The UCLS Ventilator Dashboard was conceived in March 2020 when it was evident that these mechanisms were critical to patients. Even more crucial was the need to locate and quickly determine the condition and utilization status of the ventilators. As facilities are inundated with patients, and as new infection spikes arise, the Dashboard will remain a vital tool for providers.

OAA

PROVIDING VIRTUAL CARE

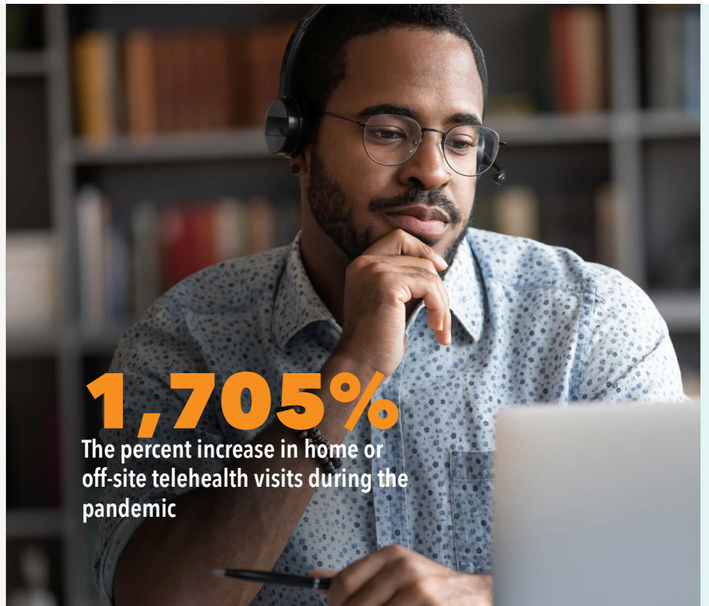


PROVIDING CARE FROM A DISTANCE TO BETTER SERVE VETERANS

When the COVID-19 pandemic hit the U.S., OAA responded immediately by allowing trainees to telework, meeting their training requirements while simultaneously augmenting the VA workforce and Veteran care across the country.

OAA changed trainee supervision policies, allowing residents and their supervisors to provide virtual care to Veterans while in different locations. Trainees were encouraged to utilize VA iPads or their own electronic devices to deliver telehealth services to Veterans while ensuring everyone's safety and social distancing.

VA's pivot to virtual trainee supervision and telework had an immediate impact. Facilities were able to transition to telemedicine and video conferencing very quickly because some had been providing these services prior to COVID-19. Baltimore VAMC Chief Resident, Quality and Safety Kiran Motwani, MD agreed, "We were using these for our heart failure patients in need of ongoing follow up outpatient care. We were able to incorporate telemedicine and video conferencing across the board to our other services very quickly because we were familiar with it."



1,705%
The percent increase in home or off-site telehealth visits during the pandemic

> "[W]here I see healthcare going is a shift in education from a face-to-face, brick and mortar type setting to a more virtual setting using much more technology to be able to reach out to the Veterans, and any patients, so that they can receive the care in the location that suits them best.
>
> **– SADIE MARSHALL, MD**
> Baltimore VAMC Chief of Staff

OCE

BEATING THE PANDEMIC

Pet Partners has collaborated with VA to develop opportunities for Veterans to participate in pet visitation, clinical interventions with therapy animals, and other activities and events that amplify benefits of animal-assisted therapies.

In response to the COVID-19 pandemic, where in-person visits were made impossible, Pet Partners volunteers began virtual therapy animal visits by emailing photos and videos of the animals to patients and conducting Facebook Live Events to stay engaged with Veterans. The "We Are All Ears" initiative was designed to maintain fundamental reading skills in school-aged children of Veteran families by reading to their pets online in the absence of a classroom environment.

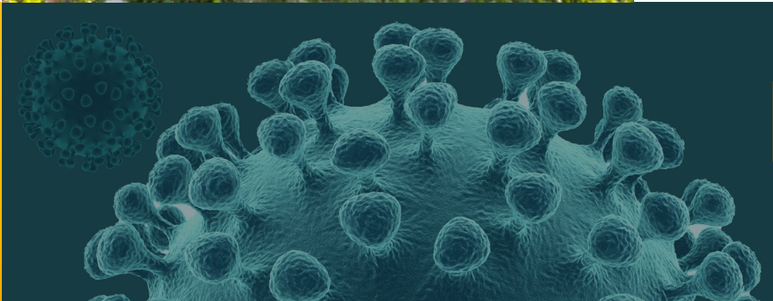
VHA IE

AGILITY OF INNOVATION

HACKATHON & 3D PRINTING EXPERTISE SUPPORTS RAPID PROTOTYPING

Innovation requires agility—as innovators test and trial their work, they have to be nimble to overcome the difficult task of driving change. But when a crisis hits, like the COVID-19 pandemic, that agility also lends itself to action.

For many years, the benefits of 3D printing in medicine were theoretical, and some people considered the potential benefits to be overhyped. As the technology matured, Beth Ripley, MD, organized and led the creation of the VHA 3D Printing Network—the largest group focused on the use of 3D printing in healthcare. Galvanizing the 3D Printing Network, Dr. Ripley coordinated the design and initial printing of prototype printable facemasks. Partnering with FDA and NIH, as well as America Makes to accelerate their efforts, the initiative has seen 611 designs for prototypes, nasal swaps, masks, and other critical pandemic response resources published to the site by users around the world—and had those designs downloaded more than 194,449 times.



MIT COVID19 CHALLENGE

VA joined Massachusetts Institute of Technology (MIT) in "Beat the Pandemic" virtual challenges to generate concepts, prototypes, and business cases focused on critical problems and health impacts.

VHA IE

INNOVATING IN CRISIS

MAKER CHALLENGES

VHA IE and the nonprofit Challenge America partnered with federal agencies, private industry, research universities, and nonprofits for a series of COVID-19 Maker Challenges. The series of five events developed innovative solutions to challenges encountered by workers on the frontlines of the COVID-19 pandemic.

Each event began with a kick-off event and a week of team research and redesign, culminating in a two-day final makeathon competition. During the makeathons, engineers and designers developed solutions to the identified challenges using rapid manufacturing processes like 3D printing to scale for needs on the ground.

The Challenge teams continue their work with the help of many VA collaborators through what is now the iNET Greenhouse Initiative.

VHA INNOVATION Ecosystem X Challenge America

LEARN MORE HERE

6,500

The number of hours volunteered by 363 subject matter experts to develop 50 working prototype solutions

HELPING VETERANS HEAR

VHA IE worked with the VA Audiology and Speech Pathology Program Office to extend care beyond the walls of VA audiology clinics. Expedited in a matter of weeks due to the pandemic, Enterprise Remote Tuning of Hearing Instruments (ERTHI) uses a specialized application that allows a Veteran to connect their hearing aids to their phone via Bluetooth from the safety and comfort of their own homes. Through virtual interaction, an audiologist can see how the hearing aid is functioning and help the Veteran adjust it if needed to abide by social distancing guidelines.

"Being able to hear has an incredible impact on how individuals interact with the world around them. This program enables us to help our patients get the most of their hearing aids in the safety of their own home.

– RACHEL McARDLE, PhD
National Director of Audiology and Speech Pathology

1.2M

The number of Veterans who receive hearing compensation loss annually

USING RIDESHARE TO FEED VETERANS IN NEED

The Veterans Employment Rideshare Initiative (Rideshare), created by VA employee Charles Franklin in 2018, helps homeless Veterans get to job interviews and find housing opportunities. Franklin saw that as housing costs in inner cities rose, Veterans moved outside the city. Consequently, public transportation was less accessible and as a result, it was a constant challenge for these Veterans to search for employment or attend medical appointments. Launching at the VA Boston Healthcare System and the Memphis VA Medical Center, the project was an instant success, assisting 42 Veterans.

When COVID-19 hit, Franklin and his team leveraged the Rideshare network to pivot the program away from transporting Veterans themselves and transporting food to them instead. The Rideshare team is delivering food from food banks to Veterans in transitional housing in Boston, St. Louis, California, Nevada and Pacific Island VA facilities. The program has delivered more than 325 boxes, with a two-week supply of food in each, to isolated Veterans, while also helping transport immune-compromised Veterans to the VA Medical Center in Oakland, CA. Since March 2020, Rideshare completed 40,000 rides to Veterans in need, whether it be food deliveries or relocating homeless Veterans to safe housing.

2020 & BEYOND

Innovation is hard work.
It's not an easy journey.
You hit a lot of walls.
You hear a lot of noes.
You often feel frustrated.

So, why do we innovate?

Because we know that when we get it right, we're going to really change Veterans' lives.

– BETH RIPLEY, MD, PhD
Director, VA Ventures

RECOGNIZING SUCCESS

Our workforce is in a tireless pursuit of excellence in education, scientific research, and innovation, and their endeavors do not go unnoticed.

In 2020, VA staff received numerous awards for their professional successes, many of which are the highest honor conferred by the awarding community. Many VA staff and DEAN offices were also recognized by external parties for their outstanding contributions.

DEBORAH DINARDO, MD, MS
David M. Worthen Rising Star Award
For advancing education and training in clinical reasoning and diagnostics

DAVID TOPOR, PhD, MS-HPEd
David M. Worthen Innovator Award
For his nationwide VA faculty development program

JOYCE WIPF, MD
David M. Worthen Career Achievement Award
For her widespread impact on VA's educational mission

MIRIAM MOREY, PhD
Paul B. Magnuson Award
For humanitarianism and dedication in service to Veterans

STEPHEN PLYMATE, MD
William S. Middleton Award
For groundbreaking contributions to VA research, particularly in the field of prostate cancer and its treatment

DAVID W. OSLIN, MD
John Blair Barnwell Award
For outstanding achievement in clinical science research

LEONIE HEYWORTH, MD, MPH
Dr. Robert Jesse Innovator of the Year Award
For the development, implementation, and clinical adoption of real-time telehealth solutions allowing otherwise isolated rural Veterans access to healthcare appointments

MATTHEW H. SAMORE, MD
Under Secretary's Award for Outstanding Achievement in Health Services
For providing major improvements to Veterans' healthcare through advances in electronic health record data and system-wide shifts in VA's approach to antibiotic prescribing and antibiotic stewardship

RACHEL RAMONI, DMD, ScD
Prostate Cancer Foundation Above and Beyond Award
For her transformational leadership in advancing biomedical research progress for Veterans with prostate cancer

GIL ALTEROVITZ, PhD, FACMI, FAMIA
FedHealthIT100
For promoting excellence in advancing health information technology related to AI applications

BETH RIPLEY, MD, PhD
Samuel J. Heyman Service to America Medal (SAMMIE)
a prestigious federal government award
For her work developing the VHA 3D Printing Network

VHA IE Staff
Gears of Government Awards
For the 4-Sight, VIONE, and VHA 3D Printing Network projects. VHA IE was also recognized for its efforts and received the Gears of Government President's Award.

LOOKING AHEAD

To note that COVID-19 has changed healthcare—and our collective experience of it—would be an understatement. This is true for the Nation at large and the entire Veteran healthcare system.

Within VHA, the pandemic accelerated implementation and remote technologies—not just for virtual appointments, but for at-home monitoring, tele-supervision of residents, and even certain aspects of clinical research trials. Helping VA facilities nationwide to better harness technology and customize its use for Veteran patients will be a DEAN priority in 2021.

The public health crisis also amplified pre-existing healthcare disparities. Although these inequities are far smaller at VHA than those observed in the private sector, much remains to be done. Supporting VHA through health equity research, promoting initiatives directed toward diversifying both the clinical and research workforce, and strengthening partnerships focused on the social determinants of Veterans' health will also be DEAN priorities in 2021.

Finally, despite the many research success stories, new vaccines and treatments, numerous questions remain. What will be the long-term impact of the novel coronavirus, for example? Expanding our knowledge base and collaborating with our federal government, academic, and industry partners in research will also be priorities as we move forward in 2021.

During this transformative time, one factor will remain the same: our unwavering commitment to ensuring the highest quality care for Veterans.

As 2021 unfolds, we invite you to stay tuned.

Innovation.
Collaboration.
Advancement.

LEARN
MORE AT
www.va.gov/dean